PROSCAL:
A Program for Probabilistic Scaling

April, 2006

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I. INTRODUCTION

PROSCAL© is a probabilistic multidimensional scaling program that represents objects by multivariate normal distributions and provides maximum likelihood estimates of each distribution's mean and variance parameters. The location of an object *i* is represented by the estimated mean of its coordinates $\hat{\mu}_{ik}$ on the $k = 1, \ldots, r$ dimensions. The coordinates of all objects are referred to as the configuration. Objects may be real or ideal.

The probabilistic model upon which PROSCAL is based was first proposed by Hefner (1958) for use with same-different judgments. For objects *i, j* in a *r* dimensional space, the distances d_{ij} were assumed to have Euclidean properties, specifically,

$$d_{ij}^2 = \sum_{k=1}^{r} (x_{ik} - x_{jk})^2 ,$$

and the coordinates x_{ik} were assumed to be normally and independently distributed with mean μ_{ik} and variance σ^2. These assumptions have been relaxed. You are now allowed to specify unique variances σ_{ik}^2 for each object *i* on each dimension *k* in a Euclidean or city-block space.

PROSCAL input data now include similarities, dissimilarities, preference ratios and binary preferential choices for pairs of real objects and liking ratings for individual real objects. For dissimilarities, preference ratios and liking ratings, high values are positively related to expected distances or expected distance ratios. Thus, a large expected distance between two real objects means that the objects are very dissimilar. A large expected distance between a real and ideal object means that the real object has a high disutility (low liking). A large expected distance ratio indicates that the real object in the numerator is less preferred (farther from the ideal) than the real object in the denominator. For similarities and binary choices, the relationship is inverse – high values indicate low expected distances or expected distance ratios. Similarity judgments are assumed to range from zero (low similarity) to one (high similarity). Binary preferential choices may have the values zero or one with a one indicating the real object in the numerator is preferred to the real object in the denominator. (See Section VI.A.1 for more detail.) All distances and distance ratios are assumed to be non-negative.

When data are collected from one subject, $\hat{\sigma}_{ik}$ - the estimate of σ_{ik}, may be interpreted as the subject's uncertainty in locating object *i* on dimension *k*. A high standard deviation indicates that the subject's knowledge or familiarity of the object is relatively vague or uncertain. When data are for more than one subject, the standard deviations can be interpreted as measures of the heterogeneity of the subjects' evaluations of the objects. Incomplete, complete or replicated data may generally be used for each subject. The one exception to this is when liking ratings are evaluated using a dependent sampling model (see Section IV.F), in which case, incomplete data are disallowed.

II WHAT'S NEW

PROSCAL's capabilities have been broadened and it's input format has been changed. New features include:

1) Simultaneous segmentation and scaling of hedonic (dominance) data – liking ratings, binary choices, preference ratios – using an expectation maximization (EM) algorithm
2) Similarity and dissimilarity judgments of proximity
3) Ability to scale liking ratings, either by themselves or simultaneously with proximity judgments or binary choice judgments
4) Ability to scale binary choice judgments, either by themselves or simultaneously with proximity judgments or liking ratings
5) Inclusion of one, two or three parameter measurement models for transforming proximity judgments or liking ratings
6) Inclusion of a power transformation measurement model for preference ratio judgments
7) Unfolding analysis using independent or dependent sampling, for all types of hedonic judgments in a Euclidean space
8) Unfolding analysis, external *or internal*, using a single ideal object
9) External unfolding based upon real objects having fixed coordinates or fixed coordinates and variances
10) Estimation of configurations whose coordinates (for real or ideal objects) may be constrained to equal one another
11) Estimation of expected distances, in a Euclidean or city-block metric, for all pairs of objects
12) Incorporation of a very quick, highly accurate, Pearsonian transformation to speed up anisotropic unfolding analyses
13) Provision of CAIC and BIC statistics for hypothesis testing
14) Improved initial estimates
15) Dynamic array allocation

III PROSCAL PARAMETER ESTIMATION

PROSCAL uses maximum likelihood (ML) procedures to estimate the mean location $\hat{\mu}_{ik}$ and variance $\hat{\sigma}^2_{ik}$ of an object i on dimension k. A significant advantage of using ML procedures to estimate the parameters is that it makes it possible to test specific hypotheses concerning the data.

To obtain the estimates, it is necessary to specify the density function of the distance random variable d_{ij}, the distance ratio random variable $r_{ijk} = d_{ij}/d_{ik}$, or the binary choice probability p_{ijk} of subject i choosing product j over product k. The selection of the appropriate density function depends upon the variance structure, the choice of a metric and the sampling process.

Variances may be defined in an isotropic or anisotropic space. In an isotropic space, variances must, for any object, have the same values on all dimensions. In an anisotropic space, variances may differ from dimension to dimension. In general, Euclidean metrics use density functions that are based upon quadratic forms in normal variables distributions. City-block metrics use density functions that are based upon folded normal distributions. When Euclidean distances are present in an isotropic space, special forms are used for the likelihood functions. For proximity judgments and liking ratings, the likelihoods are based upon the non-central chi-square distribution. For preference ratios, the likelihoods are based upon the doubly non-central F distribution. Binary preferential choices use the preceding distributions in conjunction with the binomial distribution function. (Details on how the ML functions are derived may be found in MacKay 1989, 2001; MacKay and Lilly 2004; MacKay and Zinnes 1995, Zinnes and MacKay 1983.)

When preference ratios are evaluated, PROSCAL will also print a *rescaled configuration* and *rescaled variances*. These values, which have the same likelihood as the original solution, are rescaled so that the minimum and maximum coordinate values are -1.0 and 1.0 respectively. Rescaled initial solution values are used to start the maximum likelihood analysis.

When independently sampled preference ratios, binary preference judgments or liking ratings are evaluated, PROSCAL will print *adjusted variance*s *and covariances*. Adjusted variances and covariances, which have the same likelihood as the original solution, are rescaled so that the real objects and ideal objects have the same minimum variance value on each dimension. (Independent and dependent sampling are covered in Section IV.F.)

Measurement models may be specified to express dissimilarity judgments δ_{ij} as a function of underlying latent distances d_{ij}. This process is needed when, for example, dissimilarity judgments are simultaneously evaluated with liking ratings. It may, though, also be used when dissimilarity judgments are evaluated by themselves or when they are used in conjunction with preference ratio judgments or binary choices. One, two or three-coefficient measurement models may be specified. The relationship of the underlying distances and the observed dissimilarity judgments takes the form $\delta_{ij} = a + bd_{ij}^{c}$. The user may specify which of the measurement model coefficients, *a, b* and *c*, are to be estimated. Default values of *a, b* and *c* are 0, 1, and 1 respectively. When proximities are expressed as similarities s_{ij}, additional transformations, exponential $s_{ij} = exp(-\delta_{ij})$ or Gaussian $s_{ij} = exp(-\delta_{ij}^{2})$, are used by PROSCAL to relate dissimilarities to similarities. In the psychology literature, exponential transformations are usually associated with the city-block metric and Gaussian transformations are often associated with the Euclidean metric. However, some authors (Shepard, 1987) prefer to use the exponential transformation with all metrics.

Measurement model transformations may also be defined for liking ratings. When proximities are simultaneously evaluated with liking ratings, the measurement model transformation is applied only to the proximity judgments. A power transformation may be used when preference ratio judgments are evaluated. Measurement model transformations are not used with binary choice data.

Maximum likelihood estimates maximize the value of the likelihood function. For the models described here, iterative numerical optimization methods must be used to find a solution. PROSCAL employs an iterative process which, after calculating initial estimates, enters an alternating ML estimation sequence. The usual sequence is to first estimate the variances, while fixing the coordinates and measurement model coefficients, then to estimate the coordinates and measurement model coefficients, while fixing the variances. This two-stage alternating sequence is repeated until improvement in the likelihood function reaches a cutoff value, at which point a final estimate with no fixed values is computed. When, however, an external analysis is used that fixes the coordinates of the real objects or when a mixture model is used to reassign subjects to segments, then the process is changed and a three stage sequence in which the measurement model coefficients are estimated first, the variances are estimated second and the coordinates are estimated third is followed.

IV TESTS OF HYPOTHESES

PROSCAL provides for the testing of hypotheses concerning the variance structure of the objects, locations of the objects, dimensionality of the space, metric properties of the space, the existence of a common space for proximity and hedonic judgments, dependent or independent sampling and the structure of the measurement model. All of the tests involve comparing a complex model to a simple model. When a complex model does not fit the data significantly better than a simpler model, the simpler model should be used.

The question of whether a complex model is significantly better than the simpler model can be answered by using a likelihood ratio test or information criterion statistics. Likelihood ratio tests may only be used with nested models. Information criterion statistics may be used with nested and non-nested models.

To use a likelihood ratio test, start with the log-likelihoods that are given by PROSCAL for each model. If L_c is the log likelihood of the complex model and L_s is the log likelihood of the simple model, then the quantity $2(L_c - L_s)$ has an asymptotic chi-square distribution $\chi_{(a)}^2(df)$ where the degrees of freedom df is equal to the difference in the number of free parameters estimated by the models. When evaluating $\chi_{(a)}^2(df)$ it is usually best to select a conservative (low) value for α, since maximum likelihood theorems are asymptotically defined.

A formula for computing the number of free parameters k in a model is

$$k = m + q + p + (s - 1) - r - r(r\text{-}1)/2 - 1$$

where,

m = the number of "active" coordinates (see Section IV.B)
q = the number of unique variances being estimated
p = the number of measurement model parameters being estimated (p may be zero)
s = the number of segments estimated when a mixture model is used, one otherwise
r = the dimensionality of the space

The last three terms of the equation are subtracted for the centering, rotation and scale

invariance of the solution. When anisotropic or city-block models are used, the rotational invariance term should be omitted. (See MacKay, Zinnes and Easley, 1995).

Information criterion statistics, in particular those by Akaike (1974), Schwarz (1978) and Bozdogan (1987), are also widely used. Bozdogan's statistic, called CAIC, is

$$CAIC = -2L + ck$$

where,

L = natural log likelihood of the model
$c = \ln(j) + 1$
j = the number of judgments entering the estimation process
k = the number of free parameters.

Schwarz's Bayesian Information Criterion (BIC) is very similar, the only difference being that $c = \ln(j)$.

For most models, the number of judgments is self evident. Thus, in the complete data **Prox/Lik** example of Section VII, the number of judgments is 2,160 ((8*7/2)*20 + 8*200). However, when binary choice data are used, the data are summarized over the subjects in each segment. Thus, the number of binary data points entering the estimation process is $(n*(n-1)/2)*s$ where n is the number of real objects and s is the number of segments. If a missing piece of data is found in liking ratings characterized by dependent sampling (Section IV.F below) then all of the judgments for the n real objects in that observation set are considered missing. Otherwise, a missing datum has no effect on other data.

CAIC and *BIC* are calculated for both the simple and complex model. The model with the lower value is selected.

A. Variance Structure

PROSCAL permits the estimation of a hierarchy of probabilistic scaling models. Models within the hierarchy differ in how they portray the variance structure of the objects.

Models that directly assign a variance to each object are called random coordinate or stimulus models. Three models may be distinguished for either isotropic or anisotropic variance structures. In an isotropic space, for n objects, we have the following:

S1: $\sigma_i^2 = \sigma^2 \quad i = 1,\ldots,n$

All objects have the same variance; one variance is estimated. In an isotropic space, this is the original Hefner (1958) model.

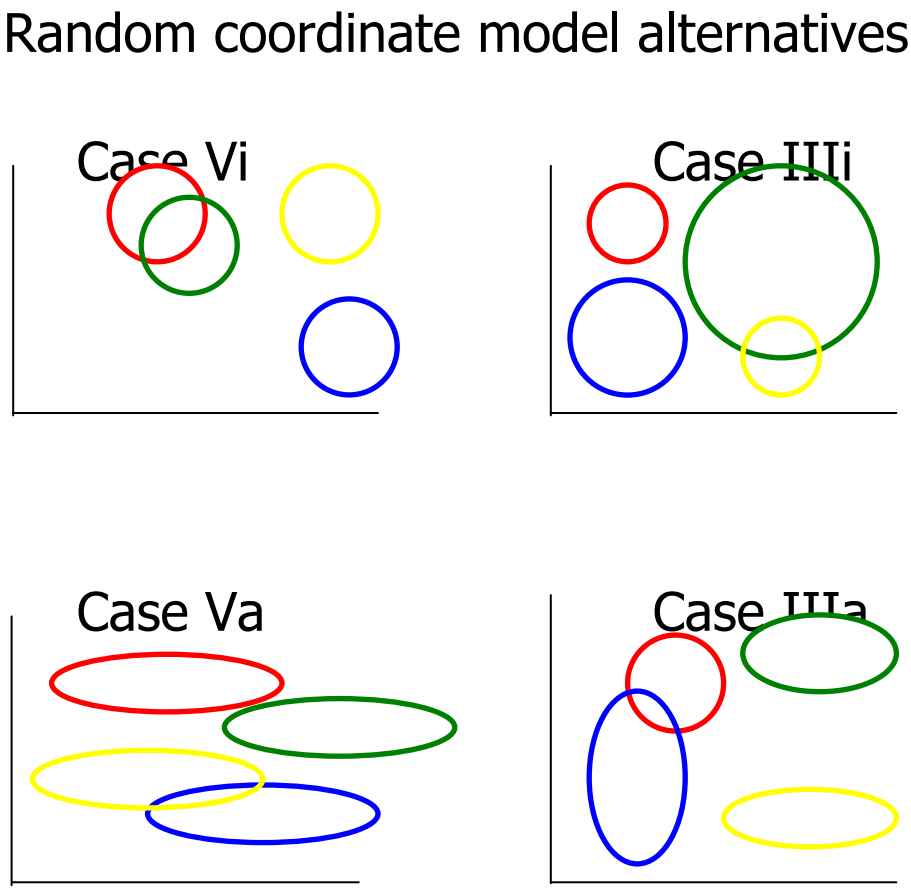
S2: $\sigma_i^2 = \sigma_k^2 \quad i = 1,\ldots,n; \qquad k = 1,\ldots,m; \qquad m < n$

Objects are divided into m sets; m variances are estimated, one for each set. The number of sets and the composition of each set must be specified before parameter estimation begins.

S3: σ_i^2 $i = 1,\ldots,n$

Individual variances are estimated for each object; *n* variances are estimated. Using Thurstone's (1927) terminology, S1 refers to Case V models while S2 and S3 refer to Case III models.

Parallel distinctions may be made for anisotropic variance structures. The following figure illustrates the types of standard deviations that can occur when you use anisotropic (a) or isotropic (i) variance structures with Case V and Case III models.



B. Location

Coordinates of all real (and ideal) objects are usually active, which means that all of the coordinate values are to be estimated and that they are independent of each other. Occasionally, you may want to test whether two or more objects are perceived similarly. This situation occurs, for example, in product testing when you wish to see if consumers perceive a reformulated product in the same way that they perceive the original product. If one object is constrained to have the same coordinates as another, then the number of active coordinates is reduced by the number of dimensions.

Location constraints may also be used with dimensionality tests, as discussed below.

Inactive coordinates are often used when evaluating data from experimental designs. In a $p \times q$ design, for example, you may wish to constrain the row (column) coordinates of each object in the same row (column) to have the same value and estimate only $p + q$ coordinates.

C. Dimensionality

Information criterion statistics provide a convenient dimensionality test that can be used with isotropic and anisotropic analyses.

Example: Section VII describes six example sets of data that may be obtained from either the PROSCAL CD or from www.proscal.com. Summary output files for the six sets are also included. Two of the examples, **Prox/Lik** and **3DProx/Lik**, are based upon the same simulated set of judgments, the parameters of which are two-dimensional. By running the examples or looking at their output files, it is seen that the log likelihood of the first (two-dimensional) analysis, is -2,933.3 and the log likelihood of the second (three-dimensional) analysis is -2,894.5. While the three-dimensional example has the higher likelihood, the two-dimensional analysis results in a lower value of CAIC — 6,127 vs. 6,171. The two-dimensional solution is thus correctly chosen as the better representation.

Likelihood ratio tests can be used with isotropic analyses. The test is a bit artificial. It requires estimating an unconstrained r dimensional solution and comparing the final log likelihood to the final log likelihood of a solution where the coordinates of the last k dimensions are constrained to have the same value. If you were testing a two versus a one dimensional solution, the constrained solution would be one where the coordinates are forced to be upon a line in a two dimensional space. Coordinate constraints are discussed in Section VI.A.2.

Example: The dependent liking rating example**, DepLikRat**, in Section VII, describes a two dimensional analysis of liking ratings for twelve real objects about a single ideal object. The output file, deplikrato.dat, reports a final log likelihood value of -1,884. Recovery of the known configuration is very good, with an R^2 of actual and estimated expected distances being 0.97. To estimate a one dimensional solution, set the last 13 values of the coordinate set membership vector to 14 (see Section VI.A.2). Run the program again. The new final log likelihood is -1,984 with a R^2 of only 0.57. Compare two times the difference in the log likelihoods, 200, to the test statistic $\chi^2_{\alpha=0.001,\,df=12} = 32.91$. The two dimensional model is seen to

be superior to the one dimensional model.

D. Metric Properties

Comparisons of Euclidean and city-block metrics are more difficult since one metric is not a nested version of the other. This is an active area of research in the mathematical literature. At this point, we recommend using information criterion statistics for hypothesis testing. Further information on the comparison of different metrics with PROSCAL is available in MacKay (2001).

Probabilistic city-block models are not as well developed as probabilistic Euclidean models. Dependent sampling, described below in Section IV.F, is available for Euclidean metrics but not city-block metrics.

E. Common Space Assumption

There has been a lot of discussion as to whether subjects use the same cognitive space when making proximity judgments as they do when making hedonic (liking rating, preference ratio or binary choice) judgments. With PROSCAL, it is possible to test whether or not a common space underlies the different types of judgments. To do this, three separate analyses are required. The first is an analysis of the proximity judgments; the second is an analysis of the hedonic judgments; and the third is joint analysis of the proximity and hedonic judgments. Since the separate proximity and hedonic judgments are independent of one another, you can compare the log likelihood of the jointly scaled judgments with the sum of the log likelihoods of the separately scaled judgments. The sum of the log likelihoods will be higher but the corresponding number of free parameters will be fewer. The comparison may be made with a likelihood ratio test or with an information criterion statistic.

Example: The annotated **Prox/Lik** example of Section VII illustrates a common space analysis of proximity and liking rating data. Using a three coefficient measurement model (see Section IV.G below) the resulting log likelihood is -2,933.27 and the CAIC statistic is 6,126.88. Splitting the data set in two parts, it is possible to do an analysis of the proximities and an analysis of the liking ratings. With a three coefficient measurement model, the proximity data have a log likelihood of -234.35 and a CAIC statistic of 615.26. Similarly, when evaluating the liking ratings by themselves, the log likelihood is -2,666.19 and the CAIC statistic is 5,558.58. To make the comparison analogous to the common space analysis, a measurement model with zero coefficients is used for the liking ratings. (In the common space model, the measurement model changes the dissimilarities but not the liking ratings.) Summing the independent proximity and liking rating analyses, the sum of the log likelihoods is -2,900.54, the sum of the free parameters is 47 (20 for the proximities and 27 for the liking ratings) and the number of judgments is 2,160. The corresponding CAIC statistic is 6,208.94. (This CAIC value must be calculated by the user with the equation of Section IV.) Thus, while the summed analyses have a higher likelihood, the common space analysis has a better (lower) CAIC statistic and the common space analysis is supported. (Another example of this test is provided in MacKay, Easley and Zinnes (1995).)

F. Sampling Properties

When preference ratios, binary choices or liking ratings are used with a Euclidean metric, dependent or independent sampling may be used. With dependent sampling, it is assumed that a subject samples the ideal object only once for each judgment (preference ratios and binary choices) or once for each set of *n* real object judgments (liking ratings). With independent sampling, it is assumed that the subject samples the ideal object twice, once for the numerator and once for the denominator, when using preference ratios or binary choices. When using liking ratings, *n* samples of the ideal object are assumed. Dependent and independent sampling may be used in either isotropic or anisotropic spaces. Dependent sampling is not available for the city-block metric.

If a solution is sought using only a single ideal object and using real objects whose locations are not fixed (internal unfolding), then dependent sampling must be used. Choice probabilities are also conditional upon whether dependent or independent sampling is assumed.

Dependent and independent sampling models have the same number of free parameters. The model with the higher likelihood should be selected.

G. Measurement Models

Likelihood ratio and information criterion statistics can also be used to determine whether the improvement in fit occasioned by going to a one, two or three-coefficient model is worth the loss in degrees of freedom. Our experience indicates that you should be cautious about using three-coefficient measurement models with small data sets and with liking rating scales.

V PROSCAL OPTIONS

In the previous section, the ability to specify alternative probabilistic scaling models and perform hypothesis tests was discussed. A number of other options is also available. The primary options are discussed in this section. Other options will be discussed in Section VI, User's Guide.

A. Location, Variance and Measurement Targets

Theory or previous studies will often suggest a particular set of target values. These targets can be used to define the initial estimates for the numerical optimization algorithms. Targets can also be compared to the final estimates, even when the targets are not used as initial estimates. To compare target and estimate locations in a Euclidean space, a proximity transformation (Cliff, 1966) is carried out on the estimates to optimally align the target and estimate coordinates. City-block spaces do not permit the arbitrary rotation of a configuration; dilation transformations are thus used to compare target and city-block coordinate estimates.

The ability to specify location, variance and measurement targets is also useful in hypothesis testing. If, for example, you have obtained an isotropic solution for Euclidean liking

rating data and you want to test this solution against a Euclidean anisotropic solution, you should first find the isotropic solution and then use that solution's final estimates as the initial solution in an anisotropic analysis. The initial and final likelihoods of the anisotropic analysis should then be used for hypothesis testing. Direct comparisons of isotropic and anisotropic likelihoods of Euclidean preference ratio data, binary choices and proximities should also be avoided.

One reason for avoiding direct comparisons of Euclidean isotropic and anisotropic likelihoods is that Euclidean isotropic solutions are based upon the non-central chi-square and doubly non-central F distributions while the Euclidean anisotropic solutions are based upon the more general quadratic forms in normal variables distribution. Theoretically, isotropic solutions have identical PDF (probability density function) values with the general and more specific distributions but slight computational differences can arise. A much more significant reason for avoiding direct comparisons occurs when calculating the doubly non-central F distribution, which is used with isotropic preference ratios and binary choices. The left tail of the doubly non-central F distribution is difficult to estimate. To overcome this problem, left-tail estimates are changed to right tail estimates by inverting the judgments and reversing the corresponding parameters. This is not done with anisotropic solutions. Isotropic and anisotropic likelihoods are thus non-comparable in a Euclidean space. (Inversion affects the likelihoods but not the estimates.)

B. Proximities

The proximity of two real objects may be measured by dissimilarity judgments (high values mean the two real objects are very different) or by similarity judgments (low values mean the two real objects are very different). Dissimilarity judgments and similarity judgments both have a lower bound of zero. Dissimilarities are unbounded on the high end and similarities are traditionally bounded by one.

To adapt similarities to a spatial model, functions are needed to transform the similarities to dissimilarities. PROSCAL provides two transformations, a Gaussian transformation $s_{ij} = \exp(-\delta_{ij}^2)$ and an exponential transformation $s_{ij} = \exp(-\delta_{ij})$. Either transformation may be used with a city-block or a Euclidean metric. However, it is traditional to associate the Gaussian transformation with the Euclidean metric and the exponential transformation with the city-block metric.

Measurement model transformations (Section III) may be used with either dissimilarities or similarities. In either case, it is the dissimilarity δ_{ij} that is being transformed by the measurement model.

C. Standardization

When data from more than one subject are simultaneously evaluated, standardization becomes an issue. Ideally, the experimental conditions from which the data are obtained will be such that standardization is not necessary. If standardization is required, this can, in some cases, be done by PROSCAL or by the user before the data are entered.

A standardization option for dissimilarity judgments provided in PROSCAL proportionally transforms the input data so that the root mean square of the dissimilarity judgments for each data set is equal to 1.0. If the data are incomplete (the number of distance judgments per data set is less than $n(n - 1)/2$ where n is the number of objects), this standardization procedure assumes that the expected values of the missing judgments do not vary significantly among data sets. If one data set consists of judgments about similar objects and another data set consists of judgments about dissimilar objects, other standardization procedures should be used. (Since standardization changes the data, likelihood, CAIC and BIC statistics cannot be compared with solutions derived from data that are not standardized.)

D. Hedonics

Hedonic judgments are evaluated with an unfolding model (Coombs, 1964). Unfolding models view utility as an inverse function of the distance from a real object to an ideal object. While individual ideal distributions may be estimated for each subject, this is not recommended since in situations where the number of parameters increases with the number of observations, the maximum likelihood estimates need not be consistent. Instead of estimating individual ideal distributions, ideal distributions are usually estimated for segments of subjects.

Many different bases may be used for segmentation. Geography, socio-economic variables and purchase history are common bases in consumer studies. When the hedonic judgments themselves are to be the basis of the segmentation, a simple procedure is to assign subjects with the same first-choice to the same segment. PROSCAL can also compute mixture maximum likelihood estimates using an expectation-maximization algorithm which automatically assigns subjects to segments on the basis of their hedonic evaluations. Segments can be of unequal size. The User's Guide, Section VI.A.2, describes how subjects are assigned to segments and Appendix 2 describes the output of the mixture model.

Liking ratings, preference ratios and binary preferential choices are the hedonic data types currently admitted by PROSCAL Examples of each data type are provided in the User's Guide, Section VI.A.3. Hedonic judgments may be evaluated by themselves or in combination with proximity data. Internal or external analyses (Section V.F below) may be requested.

E. Segmentation Analysis

When beginning the analysis of hedonic data, the user must specify the segment or group to which each set of hedonic judgments belongs. Common bases for this specification include *a priori* assignment, cluster analysis of the hedonic data and the most frequently chosen or highly evaluated product. When segments are a function of the hedonic judgments, then cluster analysis or the most frequently chosen product is usually used. *A priori* assignment is more frequent when segments are not a function of the hedonic judgments.

Improved solutions can often be obtained if the program is allowed to make its own assignment of judgments to clusters. PROSCAL provides two ways of doing this. The first way is to use an EM algorithm to simultaneously rescale the data and estimate the probabilities of each subject belonging to each of the segments. The second way is to take the probabilistic segment assignments of the EM analysis, deterministically assign subjects to their highest

probability segments, and start the scaling over again from the beginning. With large data sets there will usually be no difference between the first and second methods but with small data sets it is usually worth doing the second analysis.

F. Internal and External Analysis

When you are evaluating hedonic data, the ML estimates of the coordinates (and variances if desired) of the real objects may be estimated from the data at hand (internal analysis) or they may be fixed to equal the values of the initial estimates (external analysis). The initial values may be read in as target values or estimated.

G. Density Function Approximations

PDFs for Euclidean anisotropic spaces are based upon the quadratic forms in normal variables distribution. There is no simple closed form expression for this density function. A time consuming procedure based upon numerical integration (Imhof, 1961) has been used by previous versions of PROSCAL. In the current version of PROSCAL, Imhof's method has been replaced by an adaptation of Pearson's (1959) approximation for binary choices and preference ratios and Jensen & Solomon's (1972) approximation for proximity and liking rating data. The use of approximations for city-block spaces is described in MacKay (2001).

H. Optimization Algorithms

Previous versions of PROSCAL allowed a variety of numerical optimization algorithms. Our experience has consistently favored the results obtained by the direct search method known as STEPIT (Chandler, 1969). As a result, PROSCAL now uses only STEPIT.

VI. USER'S GUIDE

Two versions of PROSCAL are available. This user's guide describes the command line version. A graphical interface version which requires the prior installation of S-PLUS and provides perceptual share estimation and what-if modeling capability is also available.

There are two methods for obtaining the PROSCAL files:

- From the PROSCAL web site located at www.Proscal.com
  - Select **Downloads** from the PROSCAL home page.
  - Select **Proscal for Command Line Input**. This will download the file batch.zip. Place the file in a folder and extract the files. This will generate four files.
    - Prob50f.exe – the executable progam
    - p.bat – the command line batch file that links the files and executes the program
    - Lf90.eer a diagnostic program that should be located in the same folder as the executable program
    - Readme.txt – a text file that contains recent information
- From the PROSCAL CD

- Copy the files Prob50f.exe, p.bat, Lf90.eer and Readme.txt, located in the Programs folder. Paste them in a folder you will use for your project.

A. INPUT

Input is transmitted to PROSCAL by means of files. There are three different sets of input data that may be transmitted either as three individual files or as one comprehensive file.

The three sets of input data must, if three individual files are used, be identified in their first line as INITIAL DATA, TARGET DATA, and DISTANCE DATA. If one comprehensive file is used, the first line should read ALL DATA and the data provided must be in the order of initial data, then target data, and finally distance data.

A.1 INITIAL DATA defines the analysis to be performed through a listing of variables and their arguments. A summary of the primary variables and their arguments is given in Table 1. Each variable label should start on a new line, followed by one or more spaces, and its argument. Default arguments are indicated in boldface.

There are two variables, not in Table 1, which follow a different format. One, which is optional, is used to indicate a title for the analysis and the second, which is mandatory, is used to indicate the end of the INITIAL DATA file. A title is specified in two lines, the first of which has TITLE in columns 1 to 5 and the second of which contains the title in columns 1 to 80. The end of the INITIAL DATA file is specified by a line that has ENDIN in columns 1 to 5. ENDIN is needed even if all of the data are in a single ALL DATA file. See the examples provided for an illustration of how initial data are transmitted.

TABLE 1

Parameter Descriptions

Variable	Type	Values/ Description[1]
NSTIM	numeric	number of real stimulus objects
NSUB	numeric	number of subjects proximity data: the number of data sets hedonic data: the number of ideal objects
NSETS	numeric	number of total data sets proximity data: NSETS = NSUB hedonic data: the number of total data sets combination data: the total number of both kinds of data sets

NACT	numeric	proximity data: the number of active real object coordinates preference/liking data: the number of active real and ideal object coordinates (A coordinate is active if it is not constrained to be equal in value to another coordinate. Constrained coordinates are often used when evaluating experimental designs. If, for example, you have a 3 X 3 design, you might want to estimate only six coordinates. Coordinate constraints are also frequently used when testing whether a new product is perceived the same as an existing product. When constraints are not used, NACT should be equal to either NDIM*NSTIM for proximity data or NDIM*(NSTIM + NSUB) for other data.)
NDIM	numeric	number of dimensions
NPROX	numeric	number of total data sets (NSETS) that are proximity data sets – used only when DATATP is 3, 5 or 7
NCHC	numeric	number of binary choice data sets
NMMP	categorical	measurement model parameters (default value is 0) 0 $\delta_{ij} = d_{ij}$ 1 $\delta_{ij} = a + d_{ij}$ 2 $\delta_{ij} = bd_{ij}$ 3 $\delta_{ij} = d_{ij}^{c}$ 4 $\delta_{ij} = a + bd_{ij}$ 5 $\delta_{ij} = a + d_{ij}^{c}$ 6 $\delta_{ij} = bd_{ij}^{c}$ 7 $\delta_{ij} = a + bd_{ij}^{c}$
NSIG	numeric	number of variance - covariance parameters to be estimated. This value is determined by the model being estimated and the constraints placed upon the variance - covariance structure
ITMAX	numeric	maximum number of alternating maximum likelihood phases (default value is conditional upon DATATP)
NFMAX	numeric	maximum number of function evaluations at each STEPIT optimization (default value is conditional upon DATATP)

NOPT	numeric	change in the number of digits accuracy requested in the maximum likelihood estimates. To increase the requested accuracy, enter a small positive integer. To speed up execution time, enter a small negative integer. Values less than –2 and greater than +2 are not advised (default value is 0).
TCOR	categorical	1 read in target coordinates **2** do not read in target coordinates
TSIG	categorical	1 read in target variances/covariances **2** do not read in target variances/covariances
TMES	categorical	1 read in target measurement model coefficients **2** do not read in target measurement model coefficients
STAND	categorical	1 standardize proximity judgments for each data set **2** do not standardize proximity judgments (PROSCAL does not standardize preference or liking judgments.)
INITIAL	categorical	1 initial estimates come from target values (TCOR and TSIG must also equal 1. If TMES = 2, default values are used for the measurement model coefficients.) **2** initial estimates estimated by PROSCAL
DATATP	categorical	1 data are preference ratio judgments **2** data are proximity judgments 3 data are proximity and preference ratio judgments 4 data are liking rating judgments 5 data are proximity and liking rating judgments 6 data are binary choice judgments 7 data are proximity and binary choice judgments 8 data are binary choice and liking rating judgments
SIMDIS	categorical	**1** dissimilarity data 2 similarity data – Gausian distribution 3 similarity data – exponential distribution
DISTRIB	categorical	**1** isotropic analysis (likelihood functions are based on non-central chi-square and doubly non-central F distributions when METRIC equals 1) 3 anisotropic analysis
FIXED	categorical	1 external analysis – constrain real object coordinatess to initial values 2 external analysis – constrain real object coordinates and variances to initial values **3** internal analysis – do not constrain real object parameters

SAMPLE	categorical	**1** independent sampling of hedonic judgments 2[2] dependent sampling of hedonic judgments
METRIC	categorical	**1** Euclidean metric is used 2[2] city-block metric is used
MIXTURE	categorical	1 Expectation maximization algorithm is used for segmentation analysis **2** Expectation maximization algorithm is not used
DOOVER	categorical	1 Deterministic segmentation analysis follows probabilistic segmentation analysis **2** No secondary deterministic assignment analysis is used

[1] default categorical values are in bold face type
[2] dependent sampling is not defined for the city-block metric

The value entered for NSIG depends upon the structure of the model being estimated and the number of variance sets being estimated. If an isotropic model (DISTRIB = 1) is being estimated, one variance will be estimated for each variance set. If an anisotropic model (DISTRIB = 3) is being estimated, NDIM variances will be estimated for each variance set. The number of variance sets is defined by the variance set membership index which is described below.

The value entered for NACT will usually be equal to the number of objects (real and ideal) times the number of dimensions. There are, though, occasions when you may want to test models where some coordinates are constrained to have the same value. In this case, the value of NACT will be less than when there are no constraints. Specification of coordinate constraints is described below.

As mentioned at the end of Section III, an alternating maximum likelihood method is used to maximize the likelihood function. When values for ITMAX and NFMAX are omitted and PROSCAL chooses its own default values, the program will stop when there is no longer any progress being made in estimating the likelihood. If non-default values are specified, then the program will continue the estimation process until the specified values are reached. Default values for ITMAX and NFMAX are 20 and 2000 when DATATP = 1, 2, 3, 5; 30 and 3000 when DATATP = 4; 40 and 4000 when DATATP = 6, 7, 8. If the selected number of iterations is insufficient, a "Maximum Number of Iterations Reached" message is printed.

Finally, there are four variables not in Table 1 whose default values are rarely changed but which may be overridden by the user. These variables are described in Table 2.

TABLE 2

Ancillary Parameter Descriptions

Variable	Type	Values/Description
UMLMIN	numeric	minimum allowable maximum likelihood estimate of object standard deviations (default value is 1.0E-4)
UINMIN	numeric	minimum allowable initial estimate value of object standard deviations (default value is 1.0E-2)
ZMIN	numeric	value to replace zero valued judgments (default value is 1.0E-10)
NTRAC	categorical	- 1 eliminate all STEPIT output 0 standard STEPIT output + 1 extensive STEPIT output (default value is –1)

A.2 TARGET DATA are used both to define target values for the coordinates, variances and measurement model coefficients and to read in indices that relate the data to the parameters of the model being used. Target values for the coordinates, variances and measurement model coefficients may be used as a basis to which initial and final solutions are compared or they may be used to provide initial values for the ML analysis. Whether or not target values are read in is determined by the values specified for TCOR, TSIG and TMES within the initial data file.

If separate input files are used, the first line must be TARGET DATA. This is followed by the target data for first the coordinates, second the variances and third the measurement model coefficients. Coordinates for all dimensions of a single object should be entered on one line, separated by one or more spaces. Variances should be entered one per line. For isotropic spaces (DISTRIB = 1), there will be as many lines as there are variance sets. (Variance sets are described below.) For anisotropic spaces (DISTRIB = 3), there will be NDIM lines for each variance set. Measurement model coefficients should also be entered one per line, for three lines. If a measurement model with only one or two coefficients is used, enter default values for the other coefficients. The additive coefficient should be first, followed by the scalar and exponent coefficients.

The TARGET DATA file may also contain indices that indicate how an analysis is to proceed. All indices are read in as integers using a list directed format. Sequential values should be separated by one or more spaces.

For indices that are defined over real and ideal objects, it is always assumed that the real objects come first and the ideal objects are second. Indices must be in the following order:

Variance Set Membership - a variance index indicates which objects will be represented by the same variance. A value must be specified for each object. If, for example, in an analysis of 12 real objects and 2 ideal objects, a Case V analysis is performed in which all objects are estimated as having the same variance, then this line should be

1 1 1 1 1 1 1 1 1 1 1 1 1

If an isotropic space analysis were used, this example would require that NSIG was 1, no matter what the dimensionality happened to be. If this were a three dimensional anisotropic space analysis that required the estimation of three variances (DISTRIB = 3), then NSIG would equal 3.

Using the same example, if the odd real objects had a common variance, the even real objects had a different common variance and the ideal objects had their own variance, then the index would be

1 2 1 2 1 2 1 2 1 2 1 2 3 3

For this index and the next two indices, each index should start with 1 and be built using sequential integers in the sense that a value cannot be more than one one unit greater than a previously entered value. Thus, it would be **incorrect** in the previous example to have used

1 3 1 3 1 3 1 3 1 3 1 3 2 2.

Subject Set Membership - an ideal object index is needed when hedonic analyses are used and it is necessary to associate multiple sets of data with the same ideal object. An "ideal object index" is looked for whenever there is at least one ideal object represented by two or more sets of hedonic judgments. If, for example, NSETS = 15, NSUB = 5 and DATATP = 1, then the following index

1 1 2 3 3 3 3 3 3 4 4 4 5 5 1

would indicate that the first ideal object had three sets of data - the first, second and fifteenth, the second ideal object had one set of data, etc.

Coordinate Set Membership – a coordinate constraint index is always appropriate but need not be specified if no constraints are imposed and unique coordinates are estimated for all objects. Index items are ordered by dimension. A common use of this index is to force estimates of objects with similar properties to have the same coordinate values. If, for example, you did an analysis of a 3 X 3 experimental design in a two dimensional space where the first three objects were in the first row, objects 1, 4 and 7 were in the first column, etc., then this index should be specified as

1 1 1 2 2 2 3 3 3 4 5 6 4 5 6 4 5 6 .

The maximum value of this index should be equal to NACT.

Comment - sometimes things can be accomplished in multiple ways with PROSCAL. If you are doing an ideal object analysis and you have multiple sets of data that are to be assigned to the different ideal objects, then you would usually use the subject set membership option to accomplish this. However, it should be apparent that the Coordinate Set Membership index could also be used. Suppose that in a two-dimensional space there are 9 real objects, 3 ideal

objects, and 2 sets of data for each ideal object. One alternative would be to specify

NSTIM 9.
NACT 24.
NSUB 3.
NSETS 6.

And state the subject set membership as

1 1 2 2 3 3 .

A second alternative would be to specify

NSTIM 9.
NACT 24.
NSUB 6.
NSETS 6.

And state the coordinate set membership as

1 2 3 4 5 6 7 8 9 10 10 11 11 12 12 13 14 15 16 17 18 19 20 21 22 22 23 23 24 24 .

Which alternative should you use? If target data are used to define the initial solution, both examples will give the same answer. If the initial solution is computed by PROSCAL, then the final answers may differ. In general, it is recommended that the subject set membership approach be used. The computations are quicker and the initial solution tends to be better. If, though, the number of ideal objects is small, particularly if the number of ideal objects is not greater than the dimensionality of the space, then the second alternative tends to give a better initial solution.

A.3 DISTANCE DATA refers to either proximity, liking rating, preference ratio or binary choice judgments. The file starts with DISTANCE DATA on the first line. The following lines contain the judgments. Proximity, preference ratio and binary choice data are assumed to be read in as elements of sequential rows in a lower half matrix without diagonal. Even though the data are ordered as a lower half matrix, they need not be physically structured as a lower half matrix; they may be structured as a vector. Liking ratings are read in as elements of a row with one element for each real object.

Proximity Data - Proximity data are usually entered in the form of a lower-half matrix without a diagonal. All proximity judgments are positive. Negative entries indicate missing values. Proximities may be in the form of dissimilarities or similarities. For dissimilarities (SIMDIS = 1), large values indicate pairs of objects that are dissimilar, small values pairs that are similar. For similarities (SIMDIS = 2 or 3), large values indicate pairs of objects that are similar. Similarities have an upper bound of one, dissimilarities are unbounded on the upper end. If similarities exceed one, the data are automatically recoded and a warning message is printed. Proximities may be obtained directly from subjects or they may be

derived from product profile data.

Similarities may be of a Gaussian or exponential form. A Gaussian form indicates that the expected relationship of a dissimilarity δ to a similarity is of the form $s = \exp(-\delta^2)$ while an exponential form indicates that the expected relationship of a dissimilarity to a similarity is of the form $s = \exp(-\delta)$. A Gaussian form is generally specified when a Euclidean metric is being used and an exponential form is generally specified when a city-block metric is being used. When similarities are used, the values must range from 0 (low similarity) to 1 (high similarity). If the data are not within this range they are automatically rescaled and a warning message is issued.

Dissimilarity Example *The following proximity data are dissimilarity judgments for the first subject in the* proxlikd.dat *data set (Example 1, Section VII). The proximity data are located at the beginning of this data set. The first value, 1.2542 is the dissimilarity judgment for real objects 2 and 1. The value 1.6589 is for real objects 3 and 1. The greatest degree of similarity (least dissimilarity) is expressed for real objects 8 and 3. Note that the diagonal terms are missing, so that the first row corresponds to the second real object.*

```
1.2542
1.6589  .7747
 .8389  1.3700  1.0005
1.3991  1.6764  1.3997  1.0354
 .8414  1.0816  .9523  .6273  .6632
1.4546  1.0631  .4944  .7789  1.0858  .4191
1.0527  1.2632  .1825  .8596  1.0584  1.5261  .6855
```

Preference Ratio Data - Preference ratio data are usually entered in the form of a lower-half matrix without a diagonal. All preference ratio judgments are positive. Negative entries indicate missing values. Preference ratio judgments greater than 1.0 indicate that the column object is preferred to the row object. Values between 0.0 and 1.0 indicate that the row object is preferred to the column object. Alternatively, you can think of an entry in the j^{th} row and k^{th} column as a ratio of *dis*utilities for subject i; *i.e.* $r_{ijk} = d_{ij}/d_{ik}$. Preference ratio data are often obtained from subjects using graphic rating scales.

Preference Ratio Example *The following preference ratio data are from the Preference Ratio example (Example 3, Section VII). The data files to be used for this example are:* prefi.dat, preft.dat, prefd.dat. *In* prefd.dat, *the first value of the fourth line indicates that the subject prefers the first real object almost twice as much as the fifth real object. (Alternatively, the disutility for object five is greater than the disutility for object one.) Note that the diagonal terms are missing, so that the first row corresponds to the second real object.*

```
0.9775
0.7423  0.3426
1.1995  2.0228  5.3450
1.9923  1.1315  1.9936  1.0777
1.3864  1.1637  3.1746  0.7413  0.8745
0.8917  1.5122  3.1136  0.8046  0.8168  0.6253
1.6467  2.2642  3.4444  1.6325  1.1979  0.9487  1.7357
1.5765  2.3010  3.5762  1.3801  1.2176  1.5423  1.8687  1.0768
2.1924  1.3027  2.3300  1.0057  1.0362  1.4094  1.0424  0.7684  0.7299
0.5743  0.5010  0.7831  0.3687  0.4910  0.4340  0.7315  0.2915  0.3638  0.4596
0.4109  0.5256  1.0111  0.4166  0.4757  0.4732  0.3786  0.5554  0.3204  0.5829  0.7874
```

Liking Rating Data - Liking ratings are usually entered as a rectangular matrix with *n* columns, each row indicating a subject's liking for the *n* objects. High liking ratings indicate objects that are disliked, low values indicate objects that are liked. Alternatively, you can think of a liking rating as a judgment about the distance of a real object from an ideal object. Liking rating data are often obtained using integer scales.

Liking Rating Example *The following liking rating data are for the first four subjects in the* proxlikd.dat *data set (Example 1, Section VII). The data indicate that the first subject has stated that the seventh real object is liked least and the second and fifth objects are liked most.*

```
2 1 3 4 1 2 5 2
2 1 4 3 3 1 3 2
8 3 3 4 4 3 5 3
2 4 4 2 1 1 2 2
```

Binary Preferential Choice Data - Binary choice data are usually entered in the form of a lower-half matrix without a diagonal. All binary choice values must be zero or one. Negative entries indicate missing values. A binary choice value of 1 indicates that the row object is selected over the column object. (Binary choice data are thus an exception to the general PROSCAL rule that large values indicate greater distance or disutility.) Binary choice data are often obtained in choice experiments.

Binary Choice Example *The following binary choice data are from the Binary example (Example 2, Section VII). The data files to be used for this example are:* binaryi.dat, binaryt.dat, binaryd.dat. *In* binaryd.dat*, the first value of the third line indicates that the subject chooses the fourth real object over the first real object. Note that the diagonal terms are missing, so that the first row corresponds to the second real object.*

```
0
0 0
1 0 0
1 1 1 1
0 0 1 0 1
0 0 1 0 0 1
1 1 1 0 1 1 0
```

Multiple Data Sets

There are four possible combinations of data types:

- Proximity and Preference Ratio judgments
- Proximity and Liking Rating judgments
- Proximity judgments and Binary choices
- Binary choices and Liking Rating judgments

When both proximity and preference ratio data are present (DATATP = 3), then the first NDISS data sets are assumed to be proximity judgments and the remaining (NSETS - NDISS) data sets are assumed to contain preference ratio data. The same ordering is required when proximity and liking rating judgments are present (DATATP = 5) and when proximity and binary choice judgments are present (DATATP = 7). When binary choice and liking rating judgments are present (DATATP = 8) it is assumed that the binary choice judgments come first.

B. Output

PROSCAL prints the values of all program control parameters and options. If target information is provided it is printed, along with information on set memberships. When preference ratio, liking rating or binary choice data are present, the "I scales" (see Zinnes and MacKay, 1989) which are used in forming the initial parameter estimates of the ideal distributions are printed. This is followed by the initial coordinates and initial variances. A plot of the initial configuration is provided. The initial configuration is used to start the ML optimization process. Initial variances are estimated for all objects, even if a simpler model with fewer variances is requested. The mean standard deviation is also reported.

If location and variance targets are entered, the recovery of these targets by the initial estimates is printed. (The dimensionality of the target and estimate configurations must be the same.) For location estimates, two measures of recovery are given. The first is the product moment correlation of the estimated (initial) and target distances across all pairs of objects. The second is the sum of the distances between corresponding estimated and target coordinates. Before computing the second recovery measure, the estimated configuration is temporarily transformed to the scale of the target configuration and then transformed to maximum

congruence with the target coordinates (Cliff, 1966). To make comparisons between metrics easier, both of these recovery measures are based upon Euclidean distances, *even when the estimation is performed using a city-block metric.* For variances, the product moment correlation for estimated and target values is printed.

Whenever variance values are printed, the order in which they are printed is the same as that specified by the model being estimated. Variances for real objects are printed before variances for ideal objects.

When preference ratios are evaluated, PROSCAL will also print out a *rescaled configuration* and *rescaled variances*. These values, which have the same likelihood as the original solution, are rescaled so that the minimum and maximum coordinate values are -1.0 and 1.0 respectively. Rescaled initial solution values are used to start the maximum likelihood analysis.

When independently sampled preference ratios, binary preference judgments or ratings are evaluated, PROSCAL will also print out *adjusted variance*s *and covariances*. Adjusted variances and covariances, which have the same likelihood as the original solution, are rescaled so that the real objects and ideal objects have the same minimum variance value on each dimension.

The value of the optimization criterion, the log of the maximum likelihood function, is printed for the initial solution. This is followed by the values of the estimates that enter each phase of the stepwise optimization process along with the criterion values at the end of each phase.

Upon finishing, the final configuration, variances and optimization criteria are printed. A map of the estimated configuration is also given. If a target configuration is specified, a map of the target configuration is printed and the estimated configuration is transformed to maximum congruence with the target. For configurations of three or more dimensions, maps are printed for all pairs of dimensions. All dimensions are of equal scale.

Maps represent object coordinates by the numbers 1 through 9 and the letters A through Z, omitting letters I and O. An "A" thus refers to the tenth object. When hedonic data are evaluated, the beginning symbols refer to the real objects and the ending symbols refer to the ideal objects.

At the end of the maximum likelihood estimation phases, PROSCAL prints out the total number of function evaluations and the total number of constraint evaluations. Usually the number of constraint evaluations will be zero. If the number of constraint evaluations is high, the user may want to consider using a simpler model.

CAIC and BIC information criterion statistics are printed for the estimated model.

After the final parameter estimates are printed, PROSCAL prints the contribution to the final log likelihood function of each observation. Exceptionally low values may be used as an indicant of possible outliers.

At the end of the output, PROSCAL prints the estimated distances between the means of all pairs of objects as well as the corresponding expected distances. The estimated distances are based on the final (not transformed) configuration. The expected distances (MacKay, 1989; MacKay and Lilly, 2004; Zinnes and MacKay, 1983) are based on the final configuration and final variances. The value of METRIC determines whether the estimated inter-mean and expected distances are calculated following a Euclidean or a city-block metric. Final location, variance and measurement estimates are recorded in files PSOut9.ASC, PSOut10.ASC and PSOut11.ASC.

C. Limits

Table 3 provides the current limitations on the size of problem that PROSCAL can handle. There are no program limits on the number of judgments or data sets. If the number of judgments is too large for the computer's memory, the hard disk will be used to supplement the memory and the time degradation will be severe. Being able to estimate complex models with many parameters does not mean that it is desirable to do so. Our experience suggests that it is worthwhile trying to find as parsimonious a model as possible.

TABLE 3

Parameter Limits

Parameter	Limit
Number of spatial dimensions	6
Number of real and ideal object	60
Number of parameters	500

VI. EXAMPLES

The input and output of six simulated data examples are given below. The first example, which is annotated, illustrates the simultaneous scaling of proximity and liking rating judgments. Example two illustrates the analysis of preference ratio data. Example three illustrates the analysis of binary choice data and example four illustrates the simultaneous scaling and segmentation of proximity and binary choice data. A fifth example, based upon the data for Example 1, illustrates the use of edited two-dimensional output to form the initial targets for a three dimensional analysis. The sixth example illustrates multidimensional internal unfolding about a single ideal when the data are characterized by dependent sampling.

There are two methods for obtaining the data for these examples:

- From the PROSCAL web site located at www.proscal.com
  - Select **Downloads** from the PROSCAL home page
  - Select **Data for Batch Version**. This will download the file batchdata.zip, which should be placed in your project folder. The folder includes three sets of four files each – an initial instructions file, a target file, a data file and an output file.
- From the PROSCAL CD
  - Go to the **Data** folder. Copy the files from the **BatchData** folder.

Example one, the Prox/Lik data set, contains twenty sets of proximity data and 200 sets of liking ratings. The proximity data are based on 8 stimuli (real objects) and 4 ideal objects. Since the proximities and liking ratings may be scaled differently, a three parameter measurement model is estimated to transform the proximities. Integer values are simulated for the liking ratings which are often obtained from discrete, equal-appearing interval scales. Continuous values are simulated for the proximity judgments. Proximity judgments may be obtained directly from subjects or derived from attribute profile judgments. This simultaneous scaling of two different types of data illustrates the ability to obtain unique variance estimates for real and ideal objects, something that would be impossible if only liking ratings were used.

Example two, the Binary Choice data set, contains 240 sets of binary choices. The data are based on 15 real objects and 6 ideal objects. A Euclidean anisotropic model is estimated. Since binary judgments are used, no measurement model is needed. The data sets are reduced to six aggregate matrices, the number of ideal objects, and the estimation goes very rapidly.

Example three, the Preference Ratio data set, contains 248 sets of preference ratio judgments. The data are based on 12 real objects and 4 ideal objects.Real values are used for the judgments which are often obtained using graphic rating scales.

Example four, the Binary Choice and Proximity data sets, is used to illustrate segmentation analysis with the expectation maximization and reanalysis options. The data are based on 8 real objects and 3 ideal objects. The second half of the data set is intentionally misclassified to illustrate the abilities of PROSCAL's segmentation algorithms.

Example five, the data used in the two dimensional Prox/Lik analysis of example one are used here in a three dimensional analysis. Output files PSOut9.ASC, PSOut10.ASC and PSOut11.ASC from the two dimensional analysis are used to provide the coordinate, variance and measurement target values of 3DProxLikt.dat for the three dimensional analysis. A column of zeros is added to the third dimension of the coordinate targets and zero valued variances are added for the variance targets. (PROSCAL will automatically change the zero valued variances to very small positive valued constants.) The initial and final log likelihoods may be compared using, for example, CAIC for an anisotropic dimensionality test.

Example six, the Dependent Liking Rating data set, contains 100 sets of liking rating judgments for 12 real objects. All of the subjects are estimated as being in the same segment. Integer values are used for the judgments. The internal unfolding about a single ideal shows

very good recovery in a two dimensional space.

PROSCAL is run using a batch file called p.bat that is downloaded with the executable program from the www.proscal.com site and is also on the PROSCAL CD. Line commands for the six examples are as follows:

1) p proxliki.dat proxlikt.dat proxlikd.dat proxliko.dat
2) p binaryi.dat binaryt.dat binaryd.dat binaryo.dat
3) p prefi.dat preft.dat prefd.dat prefo.dat
4) p binproxsegi.dat binproxsegt.dat binproxsegd.dat binproxsego.dat
5) p 3dProxLiki.dat 3dProxLikt.dat 3dProxLikd.dat 3dProxLiko.dat
6) p depliki.dat deplikt.dat deplikd.dat depliko.dat

For each example, the four files refer to the initial data, target data, distance data and output data. Output files for these examples are also on the web site and CD.

Example 1: Input

```
INITIAL DATA
TITLE
Project1
DATATP   5.0
NSTIM    8.0
NSUB     4.0
NSETS    220.0
NDIM     2.0
METRIC   1.0
TCOR     1.0
TSIG     1.0
TMES     2.0
INITIAL  2.0
ITMAX    20.0
SAMPLE   1.0
DISTRIB  3.0
NACT     24.0
NSIG     6.0
NOPT     0.0
STAND    2.0
FIXED    3.0
NMMP     7.0
NPROX    20.0
NFMAX    2000.0
NCHC     0.0
MIXTURE  2.0
DOOVER   2.0
SIMDIS   1.0
ALGOR    1.0
MODELA   2.0
MODELB   2.0
QPDF     2.0
NTRAC    -1.0
UMLMIN   0.00010
UINMIN   0.010
ENDIN


TARGET DATA
0 0
0 1
1 1
1 0
0.4 0.5
0.5 0.6
0.6 0.5
0.5 0.4
0.2 0.2
0.2 0.8
0.8 0.8
0.8 0.2
0.04
0.04
0.2
0.2
0.2
0.04
 1 1 1 1 2 2 2 2 3 3 3 3
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2
 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2
 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2


DISTANCE DATA
   1.2542
   1.6589   .7747
    .8389  1.3700  1.0005
   1.3991  1.6764  1.3997  1.0354
    .8414  1.0816   .9523   .6273   .6632
   1.4546  1.0631   .4944   .7789  1.0858   .4191
   1.0527  1.2632   .1825   .8596  1.0584  1.5261   .6855
   1.1582
   1.2331   .9345
   1.0503  1.6660   .7676
    .7044  1.0458  1.5060  1.4077
   1.2856  1.0616   .7907  1.5785   .3890
    .8597   .6043  1.1546  1.0101   .7129   .3721
   1.1522   .9765   .5384   .2887  1.0846   .5424   .0535

               -16 sets of judgments-

    .7813
   1.4834  1.2205
   1.3907   .9861  1.1936
    .4388   .9081  1.0039   .7089
   1.7197   .4734   .2745   .4627   .4174
   1.8270   .3507   .5205  1.2133   .3329   .7675
```

```
  .2348   .7961  1.0952  1.2509  1.2696   .6495   .3188
 1.4955
 1.5466   .7757
  .9718  1.5595  1.6737
  .9908   .2524  1.3474  1.2160
 1.2377  1.0030   .4215  1.4942   .7200
 1.1870   .8368   .6561   .8043   .3240   .7918
  .6168   .7940  1.7010  1.0836   .5484  1.5350   .6772
2 1 3 4 1 2 5 2
2 1 4 3 3 1 3 2
8 3 3 4 4 3 5 3
2 4 4 2 1 1 2 2
1 4 7 3 3 5 3 3

               -- 190 sets of judgments --

4 4 5 4 5 5 2 3
3 4 2 5 2 4 2 2
7 1 4 4 1 3 1 2
4 5 2 4 3 2 2 1
3 4 3 3 4 6 5 4
```

Example 1: Output

PROSCAL

```
Project1

DATE    2006:05:03
TIME    12:13:39.567
NUMBER OF STIMULI          8
NUMBER OF ACTIVE COORD.   24
NUMBER OF DIMENSIONS       2
NUMBER OF VARIANCES        6
NUMBER OF IDEAL OBJECTS  220
NUMBER OF DATA SETS        6
NUMBER OF ML ITERATIONS   20
NUMBER OF DISTANCE SETS   20
TRANSFORMATION INDEX       7
OPTIMIZATION LEVEL         0
TARGET COORD. OPTION    TARG
TARGET VARIANCE OPT.    TARG
TARGET MEAS PARAM OPT.  TRNO
STANDARDIZATION OPT.    STNO
INITIALIZATION OPTION   COMP
DATA TYPE OPTION        PRRA
DISTRIBUTION OPTION     CVNO
FIXED POINT OPTION      FXNO
SAMPLING                INDP
METRIC OPTION           ECLD
MIXTURE OPTION          NOEM
REANALYSIS OPTION       NORD
PROXIMITIES OPTION      NOSI

UMLMIN     0.00010
UINMIN     0.01000
ZMIN       0.00000
NFMAX         2000
NTRAC           -1
```

Restatement of design parameters, optimization and output options. Values of nominal variables refer to codes used in the PROSCAL program. A key to the codes is in the

```
TARGET CONFIGURATION

         0.000          0.000
         0.000          1.000
         1.000          1.000
         1.000          0.000
         0.400          0.500
         0.500          0.600
         0.600          0.500
         0.500          0.400
         0.200          0.200
         0.200          0.800
         0.800          0.800
         0.800          0.200
```

The first eight rows are coordinates for the real objects, the last four rows are the coordinates for the ideal objects.

In this design, target values are used only as a basis of comparison for the estimates. They do not enter the estimation process.

```
TARGET VARIANCES

         0.040
         0.040
         0.200
         0.200
         0.200
         0.040
```

The first two variances are for the first four real objects, the second two are for real objects five through eight, and the last two are for the ideal objects. In each pair, the first value is for dimension V1, the second value is for dimension V2.

```
VARIANCE SET MEMBERSHIP

OBJECTS    1  2  3  4  5  6  7  8  9 10 11 12

SET        1  1  1  1  2  2  2  2  3  3  3  3
```

In this anisotropic Case III design, the first four real objects have the same variance, the second four real objects have the same variance, and the ideal objects have the same variance.

```
SUBJECT SET MEMBERSHIP

SUBJECT      SET

     1        1
     2        2
     3        3
     4        4
     5        1
     6        2
     7        3
     8        4
     9        1
    10        2
    11        3
    12        4
    13        1
    14        2
    15        3
    16        4
    17        1
    18        2
```

19	3
20	4
21	1
22	2
23	3
24	4
25	1
26	2
27	3
28	4
29	1
30	2
31	3
32	4
33	1
34	2
35	3
36	4
37	1
38	2
39	3
40	4
41	1
42	2
43	3
44	4
45	1
46	2
47	3
48	4
49	1
50	2
51	3
52	4
53	1
54	2
55	3
56	4
57	1
58	2
59	3
60	4
61	1
62	2
63	3
64	4
65	1
66	2
67	3
68	4
69	1
70	2
71	3
72	4
73	1
74	2
75	3
76	4
77	1
78	2
79	3
80	4
81	1
82	2
83	3
84	4
85	1
86	2
87	3
88	4
89	1
90	2
91	3
92	4
93	1
94	2
95	3
96	4
97	1
98	2
99	3
100	4
101	1
102	2
103	3
104	4
105	1
106	2
107	3
108	4
109	1
110	2

There are four ideal objects and 200 sets of liking rating judgments. Every fourth data set is assigned to the same ideal object.

```
111         3
112         4
113         1
114         2
115         3
116         4
117         1
118         2
119         3
120         4
121         1
122         2
123         3
124         4
125         1
126         2
127         3
128         4
129         1
130         2
131         3
132         4
133         1
134         2
135         3
136         4
137         1
138         2
139         3
140         4
141         1
142         2
143         3
144         4
145         1
146         2
147         3
148         4
149         1
150         2
151         3
152         4
153         1
154         2
155         3
156         4
157         1
158         2
159         3
160         4
161         1
162         2
163         3
164         4
165         1
166         2
167         3
168         4
169         1
170         2
171         3
172         4
173         1
174         2
175         3
176         4
177         1
178         2
179         3
180         4
181         1
182         2
183         3
184         4
185         1
186         2
187         3
188         4
189         1
190         2
191         3
192         4
193         1
194         2
195         3
196         4
197         1
198         2
199         3
200         4
```

A three-parameter measurement model was requested. These two values are the initial estimates of the additive and scale constants respectively. *i.e.*,
$\delta_{ij} = 0.86 + 3.44\ d_{ij}$

```
INITIAL ADDITIVE AND SCALE COEFFICIENTS FOR DISSIMILARITY JUDGMENT TRANSFORMATION       0.862263D+00         0.344344D+01

ISCALE FOR IDEAL OBJECT   1

   2.470   4.150   4.910   3.810   3.210   3.490   3.550   3.370

ISCALE FOR IDEAL OBJECT   2

   3.790   2.510   3.850   4.570   3.090   3.490   3.470   3.470

ISCALE FOR IDEAL OBJECT   3

   4.890   3.970   2.370   3.550   3.630   3.010   3.430   3.450

ISCALE FOR IDEAL OBJECT   4

   3.850   4.850   3.890   2.730   2.810   3.550   3.390   2.990
```

When preference ratios, binary choices or liking ratings are present, PROSCAL begins the initial estimation process by estimating I scales (Coombs, 1964) for each of the ideal objects.

```
INITIAL CONFIGURATION

        -3.082          0.654
         0.756          3.061
         3.183         -0.596
        -0.675         -3.145
        -1.220          0.521
         0.578          0.011
         0.786         -0.055
        -0.326         -0.451
        -3.082          0.654
         0.756          3.061
         3.183         -0.596
        -0.675         -3.145
```

These are the initial coordinate values that are used to begin the ML analysis. The first eight rows are for the real objects and the last four rows are for the ideal objects.

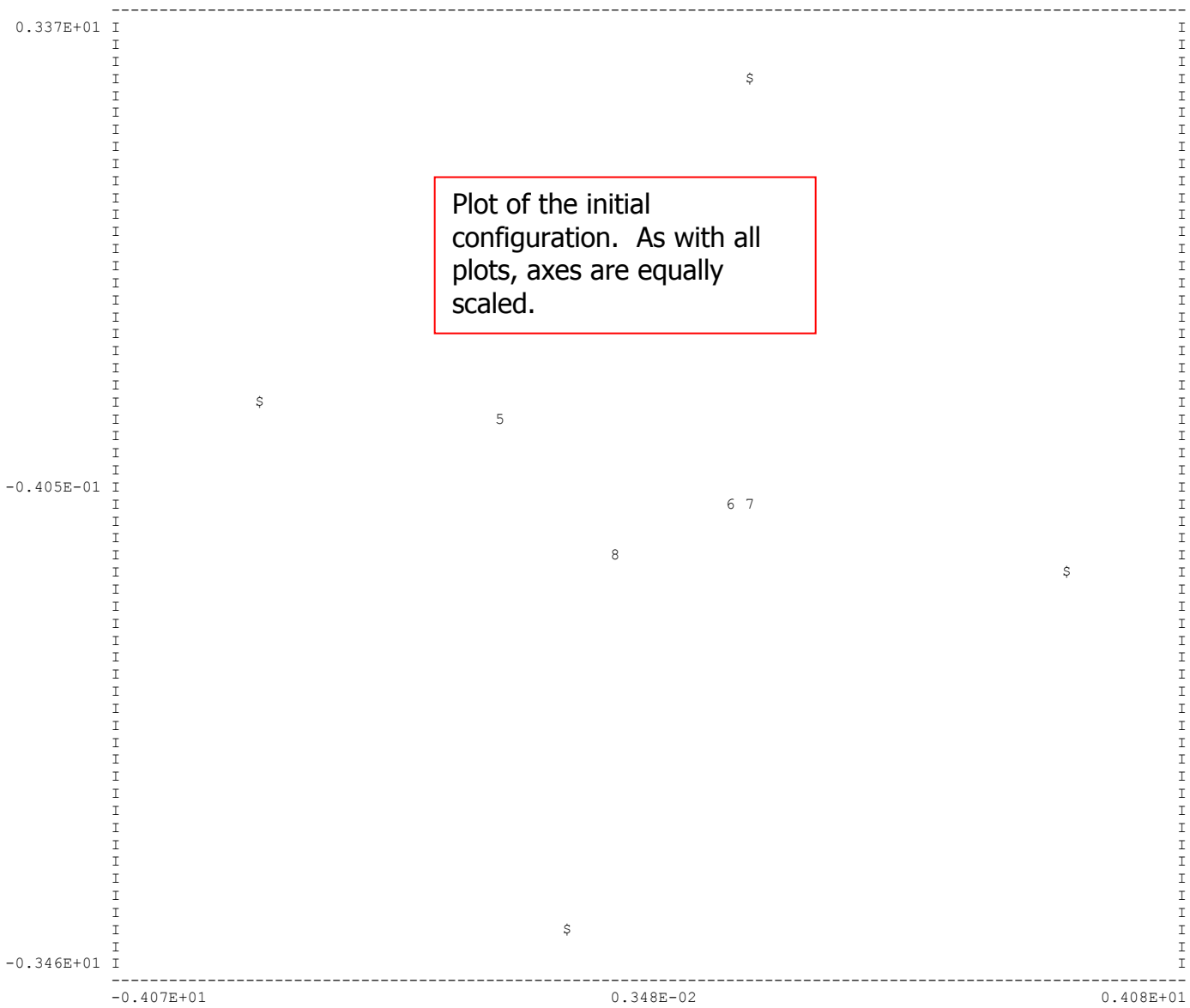
```
INITIAL STANDARD DEVIATIONS - ALL OBJECTS

         1.348
         1.367
         1.306
         1.485
         1.315
         0.987
         1.319
         1.010
         1.028
         1.024
         0.987
         1.017

MEAN OF STANDARD DEVIATIONS           1.183
```

As part of the initial estimation process, an isotropic standard deviation is estimated for each object, real and ideal.

INITIAL CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



Plot of the initial configuration. As with all plots, axes are equally scaled.

INITIAL VARIANCES - ACTIVE VARIABLES

1.895
1.895
1.340
1.340
1.028
1.028

Initial variances. These are of necessity isotropic, even when an anisotropic analysis is requested. Three sets of variances are estimated. The first two values are for the first set, etc.

INITIAL MEASUREMENT CONSTANTS -0.2504 0.2904 1.0000

TRANSFORMED CONFIGURATION

-0.407	-0.403
-0.389	0.416
0.405	0.419
0.406	-0.417
-0.202	-0.134
0.054	0.086
0.085	0.111
0.034	-0.096
-0.407	
-0.389	
0.405	
0.406	

Transformed initial estimates are the result of a proximity transformation on the initial estimates. At this point, the initial values are Euclidean and Case V in nature.

Recovery of the targets is measured in two ways. The first is the product moment correlation of all pairs of inter-object (inter-point) distances for the target and transformed configurations. The second is the sum of the Euclidean distances between corresponding estimated and target objects.

```
CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.8377     SUM OF DISTANCE DIFFERENCES =   0.150595E+01

TRANSFORMED VARIANCES AND COVARIANCES

         0.062
         0.000         0.062
         0.044
         0.000         0.044
         0.034
         0.000         0.034

INITIAL LOG LIKELIHOOD VALUE                  -0.34608970E+04
```

Estimate values are reported first by dimension across objects for the coordinates and then sequentially for the variances. With anisotropic Case III problems, the order of the variances is first across dimension and then across objects.

```
ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -3.082   0.756   3.183  -0.675  -1.220   0.578   0.786  -0.326  -3.082   0.756
  3.183  -0.675   0.654   3.061  -0.596  -3.145   0.521   0.011  -0.055  -0.451
  0.654   3.061  -0.596  -3.145   1.895   1.895   1.340   1.340   1.028   1.028

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.342901E+04

ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -3.082   0.756   3.183  -0.675  -1.220   0.578   0.786  -0.326  -3.082   0.756
  3.183  -0.675   0.654   3.061  -0.596  -3.145   0.521   0.011  -0.055  -0.451
  0.654   3.061  -0.596  -3.145   0.999   1.204   1.763   2.066   1.762   1.822

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.295843E+04

MEASUREMENT PARAMETERS       0.400000E-01  0.290408E+00  0.976404E+00


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -2.069   1.018   2.546  -0.284  -0.338   0.686   0.600  -0.070  -1.781   0.558
  2.038  -0.503   0.917   2.345  -0.444  -2.039   0.240   0.153   0.187  -0.215
  0.507   1.997  -0.679  -1.476   0.999   1.204   1.763   2.066   1.762   1.822

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.294308E+04

ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -2.069   1.018   2.546  -0.284  -0.338   0.686   0.600  -0.070  -1.781   0.558
  2.038  -0.503   0.917   2.345  -0.444  -2.039   0.240   0.153   0.187  -0.215
  0.507   1.997  -0.679  -1.476   0.704   0.758   1.495   2.885   1.152   2.185

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.293759E+04

MEASUREMENT PARAMETERS       0.400000E-01  0.283205E+00  0.976404E+00


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -1.999   1.510   2.511  -0.746  -0.357   0.594   0.571  -0.062  -1.631   0.873
  1.822  -0.813   1.556   2.416  -0.851  -2.059   0.368   0.180   0.197  -0.058
  0.846   1.878  -0.862  -1.115   0.704   0.758   1.495   2.885   1.152   2.185

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.293574E+04
```

Measurement model estimates are reported for the requested parameters. The order of the estimates is for the additive, linear and exponential terms.

```
ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -1.999   1.510   2.511  -0.746  -0.357   0.594   0.571  -0.062  -1.631   0.873
  1.822  -0.813   1.556   2.416  -0.851  -2.059   0.368   0.180   0.197  -0.058
  0.846   1.878  -0.862  -1.115   0.629   0.660   1.428   3.288   1.133   2.072

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.293431E+04


MEASUREMENT PARAMETERS       0.400000E-01  0.278314E+00  0.976404E+00


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -1.853   1.784   2.473  -0.971  -0.317   0.573   0.555  -0.024  -1.521   1.114
  1.719  -0.885   1.864   2.361  -1.128  -2.007   0.418   0.161   0.144   0.006
  0.979   1.708  -0.924  -0.915   0.629   0.660   1.428   3.288   1.133   2.072

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.293379E+04


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -1.853   1.784   2.473  -0.971  -0.317   0.573   0.555  -0.024  -1.521   1.114
  1.719  -0.885   1.864   2.361  -1.128  -2.007   0.418   0.161   0.144   0.006
  0.979   1.708  -0.924  -0.915   0.618   0.651   1.420   3.536   1.125   1.979

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.293340E+04


MEASUREMENT PARAMETERS       0.400000E-01  0.276896E+00  0.976404E+00


ESTIMATE VALUES ENTERING LAST PHASE

 -1.763   1.895   2.412  -1.080  -0.295   0.550   0.531  -0.006  -1.483   1.206
  1.659  -0.938   2.005   2.300  -1.279  -1.966   0.438   0.150   0.121   0.037
  1.033   1.614  -0.962  -0.836   0.618   0.651   1.420   3.536   1.125   1.979

FINAL LOG LIKELIHOOD VALUE      -0.293327E+04

NUMBER OF FREE PARAMETERS        30
NUMBER OF JUDGMENTS      2160
CAIC                0.612688E+04
BIC                 0.609688E+04


FUNCTION EVALUATIONS =   4006       CONSTRAINT EVALUATIONS =      0


FINAL CONFIGURATION

        -1.731         2.039
         1.927         2.268
         2.384        -1.332
        -1.114        -1.965
        -0.277         0.447
         0.534         0.138
         0.518         0.107
        -0.004         0.037
        -1.475         1.042
         1.237         1.575
         1.639        -0.987
        -0.961        -0.817


FINAL VARIANCES

         0.608
         0.653
         1.420
         3.615
         1.118
         1.943


FINAL MEASUREMENT TRANSFORMATION COEFFICIENTS

  0.399999999000E-01
  0.276896415243E+00
  0.976403566657E+00
```

After finishing the alternating ML estimation process, a final phase in which all coordinate and variance estimates may be updated is conducted.

The final log likelihood along with the information criterion statistics CAIC and BIC of Bozdogan and Schwarz.

Final estimates, before transformation to the targets (if provided).

TRANSFORMED CONFIGURATION

-0.540	-0.438
-0.469	0.512
0.475	0.501
0.513	-0.422
-0.078	-0.120
0.030	0.077
0.038	0.072
0.037	-0.065
-0.274	-0.408
-0.315	0.310
0.360	0.322
0.223	-0.342

Final transformed coordinates and their recovery measures.

CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.9747 SUM OF DISTANCE DIFFERENCES = 0.797740E+00

TRANSFORMED VARIANCES AND COVARIANCES

0.044	
0.000	0.041
0.242	
-0.020	0.099
0.130	
-0.008	0.077

Contributions of the pair comparison proximities to the final log likelihood.

CONTRIBUTIONS TO FINAL LOG LIKELIHOOD FUNCTION (SUBJECT, OBJECT, OBJECT, LIKELIHOOD)

1	2	1	0.144E+00	1	3	1	0.155E+00	1	3	2	-0.159E+00	1	4	1	-0.315E+00	1	4	2	0.281E+00
1	4	3	0.354E+00	1	5	1	-0.111E+01	1	5	2	-0.155E+01	1	5	3	-0.457E+00	1	5	4	-0.195E+00
1	6	1	-0.217E-01	1	6	2	-0.215E+00	1	6	3	-0.251E-01	1	6	4	-0.181E+00	1	6	5	-0.847E-02
1	7	1	-0.745E+00	1	7	2	-0.183E+00	1	7	3	-0.305E+00	1	7	4	-0.337E-01	1	7	5	-0.472E+00
1	7	6	-0.103E+00	1	8	1	-0.130E+00	1	8	2	-0.347E+00	1	8	3	-0.230E+01	1	8	4	-0.457E-01
1	8	5	-0.480E+00	1	8	6	-0.164E+01	1	8	7	-0.553E-02								
2	2	1	0.313E+00	2	3	1	-0.604E-01	2	3	2	0.241E+00	2	4	1	0.249E+00	2	4	2	0.699E-01
2	4	3	-0.128E+00	2	5	1	0.337E-01	2	5	2	-0.451E-01	2	5	3	-0.727E+00	2	5	4	-0.882E+00
2	6	1	-0.353E+00	2	6	2	-0.189E+00	2	6	3	0.486E-01	2	6	4	-0.132E+01	2	6	5	-0.248E+00
2	7	1	-0.158E-01	2	7	2	-0.184E+00	2	7	3	-0.329E+00	2	7	4	-0.983E-01	2	7	5	-0.218E-01
2	7	6	-0.183E+00	2	8	1	-0.266E+00	2	8	2	-0.437E-01	2	8	3	-0.449E+00	2	8	4	-0.813E+00
2	8	5	-0.532E+00	2	8	6	-0.120E-01	2	8	7	-0.198E+01								
3	2	1	-0.142E+01	3	3	1	-0.302E+00	3	3	2	-0.330E+00	3	4	1	0.231E+00	3	4	2	-0.176E+00
3	4	3	0.168E+00	3	5	1	-0.256E-01	3	5	2	-0.892E+00	3	5	3	-0.305E+00	3	5	4	-0.131E+00
3	6	1	-0.182E+00	3	6	2	-0.397E+00	3	6	3	-0.323E-01	3	6	4	-0.414E+00	3	6	5	-0.419E-01
3	7	1	-0.351E-01	3	7	2	-0.783E-01	3	7	3	-0.118E+00	3	7	4	-0.257E+00	3	7	5	-0.833E+00
3	7	6	-0.325E-01	3	8	1	-0.158E+01	3	8	2	-0.121E+01	3	8	3	-0.146E+01	3	8	4	-0.182E+00
3	8	5	-0.378E+00	3	8	6	-0.462E+00	3	8	7	0.527E-02								
4	2	1	-0.113E+01	4	3	1	0.166E+00	4	3	2	-0.729E+00	4	4	1	-0.988E+00	4	4	2	0.281E+00
4	4	3	-0.662E+00	4	5	1	-0.203E+01	4	5	2	-0.328E-01	4	5	3	-0.887E-01	4	5	4	-0.424E+00
4	6	1	-0.309E-01	4	6	2	-0.226E+00	4	6	3	-0.300E+00	4	6	4	-0.251E-01	4	6	5	-0.397E+00
4	7	1	-0.213E+00	4	7	2	-0.347E-01	4	7	3	-0.840E-01	4	7	4	-0.105E+01	4	7	5	-0.180E+00
4	7	6	-0.143E+00	4	8	1	-0.249E+00	4	8	2	-0.536E-01	4	8	3	0.484E-01	4	8	4	-0.321E+00
4	8	5	-0.322E+00	4	8	6	-0.207E+00	4	8	7	-0.682E+00								
5	2	1	0.212E-01	5	3	1	0.295E+00	5	3	2	0.417E-01	5	4	1	-0.117E+01	5	4	2	-0.129E+01
5	4	3	0.327E+00	5	5	1	-0.187E+01	5	5	2	-0.217E+00	5	5	3	-0.360E+00	5	5	4	-0.216E+00
5	6	1	-0.102E+01	5	6	2	-0.108E+00	5	6	3	-0.335E+00	5	6	4	-0.697E-01	5	6	5	-0.423E-01
5	7	1	-0.130E+01	5	7	2	-0.486E+00	5	7	3	-0.490E+00	5	7	4	-0.992E-01	5	7	5	-0.116E+00
5	7	6	-0.161E+01	5	8	1	-0.183E+01	5	8	2	-0.344E-01	5	8	3	-0.478E+00	5	8	4	-0.278E+00
5	8	5	-0.853E+00	5	8	6	-0.407E-01	5	8	7	-0.107E+01								
6	2	1	0.304E-01	6	3	1	-0.980E-01	6	3	2	0.794E-01	6	4	1	0.136E+00	6	4	2	-0.247E+01
6	4	3	-0.230E+01	6	5	1	0.331E-01	6	5	2	0.186E-02	6	5	3	-0.303E-01	6	5	4	-0.127E+00
6	6	1	-0.440E-01	6	6	2	-0.134E+00	6	6	3	-0.152E+01	6	6	4	-0.137E+01	6	6	5	-0.663E+00
6	7	1	-0.101E+01	6	7	2	-0.168E+00	6	7	3	-0.220E+00	6	7	4	-0.572E-01	6	7	5	-0.112E+01
6	7	6	-0.426E-01	6	8	1	-0.811E+00	6	8	2	-0.225E+01	6	8	3	0.539E-01	6	8	4	-0.243E-01
6	8	5	-0.244E+00	6	8	6	-0.208E+00	6	8	7	-0.184E+01								
7	2	1	0.362E+00	7	3	1	0.322E+00	7	3	2	0.333E+00	7	4	1	-0.304E+00	7	4	2	0.505E-01
7	4	3	0.363E+00	7	5	1	-0.861E-01	7	5	2	-0.353E-01	7	5	3	-0.288E+00	7	5	4	-0.173E+00
7	6	1	-0.244E+00	7	6	2	-0.398E-01	7	6	3	-0.111E+01	7	6	4	-0.266E+00	7	6	5	-0.804E-01
7	7	1	-0.490E+00	7	7	2	-0.180E+00	7	7	3	-0.277E+00	7	7	4	-0.769E+00	7	7	5	-0.620E+00
7	7	6	-0.845E-01	7	8	1	-0.130E+00	7	8	2	-0.143E+01	7	8	3	-0.580E+00	7	8	4	-0.501E-01
7	8	5	-0.151E+01	7	8	6	-0.815E-01	7	8	7	-0.106E+00								
8	2	1	0.361E+00	8	3	1	0.435E-01	8	3	2	-0.711E-01	8	4	1	-0.106E+01	8	4	2	0.312E+00
8	4	3	-0.726E+00	8	5	1	0.344E-01	8	5	2	-0.160E-01	8	5	3	-0.334E-01	8	5	4	-0.721E+00
8	6	1	-0.958E-02	8	6	2	-0.271E+00	8	6	3	-0.460E-01	8	6	4	-0.109E+01	8	6	5	-0.110E+00
8	7	1	-0.224E+01	8	7	2	-0.636E-01	8	7	3	-0.341E+01	8	7	4	-0.107E+01	8	7	5	-0.879E-01
8	7	6	-0.818E+00	8	8	1	-0.212E-01	8	8	2	-0.229E+00	8	8	3	-0.109E+00	8	8	4	-0.305E+00
8	8	5	-0.133E+00	8	8	6	-0.107E+01	8	8	7	-0.667E-01								
9	2	1	-0.117E+00	9	3	1	-0.694E+00	9	3	2	-0.184E-01	9	4	1	0.283E+00	9	4	2	0.996E-01
9	4	3	0.139E+00	9	5	1	-0.211E+00	9	5	2	-0.699E+00	9	5	3	-0.598E+00	9	5	4	-0.883E-01
9	6	1	-0.125E+00	9	6	2	-0.108E+01	9	6	3	-0.817E-01	9	6	4	-0.130E+01	9	6	5	-0.430E+00
9	7	1	-0.320E-02	9	7	2	-0.112E+00	9	7	3	-0.920E+00	9	7	4	-0.916E+00	9	7	5	-0.103E+01
9	7	6	-0.342E-01	9	8	1	-0.417E+00	9	8	2	-0.240E+01	9	8	3	-0.169E+01	9	8	4	-0.482E+00

9	8	5	-0.566E-01	9	8	6	-0.224E+00	9	8	7	-0.176E+00									
10	2	1	-0.277E+00	10	3	1	-0.198E+00	10	3	2	-0.648E+00	10	4	1	0.161E+00	10	4	2	-0.312E-01	
10	4	3	-0.569E+00	10	5	1	-0.420E-01	10	5	2	-0.207E+00	10	5	3	-0.699E-01	10	5	4	-0.111E+00	
10	6	1	-0.160E+00	10	6	2	-0.316E-01	10	6	3	-0.401E+00	10	6	4	-0.444E+00	10	6	5	-0.412E+00	
10	7	1	-0.461E-03	10	7	2	-0.283E+00	10	7	3	-0.375E+00	10	7	4	-0.259E+00	10	7	5	-0.408E-01	
10	7	6	-0.327E+00	10	8	1	-0.813E+00	10	8	2	-0.434E+00	10	8	3	-0.197E+01	10	8	4	-0.717E-01	
10	8	5	-0.225E+01	10	8	6	-0.897E+00	10	8	7	-0.196E+01									
11	2	1	0.383E-01	11	3	1	0.333E+00	11	3	2	-0.435E+00	11	4	1	-0.176E+00	11	4	2	0.847E-02	
11	4	3	0.267E-01	11	5	1	0.385E-01	11	5	2	-0.566E+00	11	5	3	-0.652E+00	11	5	4	-0.137E+01	
11	6	1	-0.765E+00	11	6	2	-0.602E+00	11	6	3	-0.189E+00	11	6	4	-0.269E-01	11	6	5	-0.686E-01	
11	7	1	-0.763E-01	11	7	2	-0.242E+00	11	7	3	-0.410E+00	11	7	4	-0.103E+01	11	7	5	-0.781E-02	
11	7	6	-0.396E+00	11	8	1	-0.661E+00	11	8	2	-0.370E-01	11	8	3	-0.145E+00	11	8	4	-0.414E+00	
11	8	5	-0.119E+00	11	8	6	-0.715E+00	11	8	7	-0.400E-01									
12	2	1	0.360E+00	12	3	1	0.306E+00	12	3	2	0.223E+00	12	4	1	0.774E-01	12	4	2	-0.971E+00	
12	4	3	0.143E+00	12	5	1	-0.376E-01	12	5	2	-0.131E+00	12	5	3	-0.233E+00	12	5	4	-0.506E+00	
12	6	1	-0.627E-01	12	6	2	-0.445E-01	12	6	3	0.157E-02	12	6	4	-0.136E+01	12	6	5	-0.808E+00	
12	7	1	-0.502E+00	12	7	2	-0.953E-01	12	7	3	-0.988E-01	12	7	4	-0.536E+00	12	7	5	-0.951E-02	
12	7	6	-0.106E+01	12	8	1	-0.133E+01	12	8	2	-0.883E-01	12	8	3	-0.897E-01	12	8	4	-0.104E+00	
12	8	5	-0.455E+00	12	8	6	-0.502E+00	12	8	7	-0.928E+00									
13	2	1	-0.628E+00	13	3	1	-0.418E+00	13	3	2	-0.263E+00	13	4	1	-0.264E+00	13	4	2	0.260E+00	
13	4	3	0.342E+00	13	5	1	-0.134E+01	13	5	2	-0.282E+00	13	5	3	-0.127E+01	13	5	4	-0.206E+00	
13	6	1	-0.180E-01	13	6	2	-0.182E+01	13	6	3	-0.587E+00	13	6	4	-0.233E+01	13	6	5	-0.174E+00	
13	7	1	-0.378E+00	13	7	2	-0.411E+00	13	7	3	-0.629E+00	13	7	4	-0.116E+00	13	7	5	-0.418E+00	
13	7	6	-0.170E+00	13	8	1	-0.169E-01	13	8	2	-0.181E+00	13	8	3	-0.583E+00	13	8	4	-0.347E-01	
13	8	5	-0.163E+01	13	8	6	-0.404E-01	13	8	7	-0.821E+00									
14	2	1	-0.109E-01	14	3	1	0.203E+00	14	3	2	-0.303E+00	14	4	1	-0.735E+00	14	4	2	0.316E+00	
14	4	3	0.309E+00	14	5	1	-0.228E+00	14	5	2	-0.547E-01	14	5	3	-0.897E+00	14	5	4	-0.347E+00	
14	6	1	-0.212E+00	14	6	2	-0.781E+00	14	6	3	-0.255E+00	14	6	4	-0.363E-01	14	6	5	-0.348E-01	
14	7	1	-0.222E+00	14	7	2	-0.647E-01	14	7	3	-0.227E+01	14	7	4	-0.137E+01	14	7	5	-0.278E+00	
14	7	6	-0.145E-01	14	8	1	-0.337E+00	14	8	2	-0.204E+01	14	8	3	-0.550E+00	14	8	4	-0.960E+00	
14	8	5	-0.349E+00	14	8	6	0.986E-03	14	8	7	-0.114E+01									
15	2	1	0.294E+00	15	3	1	0.293E+00	15	3	2	0.241E+00	15	4	1	0.204E+00	15	4	2	-0.232E+00	
15	4	3	-0.721E-02	15	5	1	-0.209E+01	15	5	2	-0.265E-01	15	5	3	0.184E-01	15	5	4	-0.902E-01	
15	6	1	-0.518E+00	15	6	2	-0.121E+00	15	6	3	-0.209E-01	15	6	4	-0.136E+01	15	6	5	-0.106E+01	
15	7	1	-0.208E-02	15	7	2	-0.192E+01	15	7	3	-0.472E+00	15	7	4	-0.365E+00	15	7	5	-0.151E+01	
15	7	6	-0.132E+00	15	8	1	-0.148E+01	15	8	2	-0.125E+01	15	8	3	-0.312E+00	15	8	4	-0.949E+00	
15	8	5	-0.120E+00	15	8	6	-0.115E+01	15	8	7	-0.239E-02									
16	2	1	0.345E+00	16	3	1	-0.951E+00	16	3	2	0.233E+00	16	4	1	0.222E-01	16	4	2	0.327E+00	
16	4	3	-0.156E+00	16	5	1	0.371E-01	16	5	2	-0.290E+00	16	5	3	0.541E-02	16	5	4	-0.781E+00	
16	6	1	-0.573E+00	16	6	2	-0.590E-01	16	6	3	-0.112E+01	16	6	4	-0.568E+00	16	6	5	-0.707E+00	
16	7	1	-0.115E+01	16	7	2	-0.431E-01	16	7	3	-0.729E+00	16	7	4	-0.204E+01	16	7	5	-0.163E+01	
16	7	6	-0.110E+01	16	8	1	-0.183E+00	16	8	2	-0.223E+01	16	8	3	-0.520E+00	16	8	4	-0.284E+00	
16	8	5	-0.161E-01	16	8	6	-0.185E+00	16	8	7	-0.271E-01									
17	2	1	0.352E+00	17	3	1	-0.269E-01	17	3	2	-0.222E+01	17	4	1	0.913E-01	17	4	2	0.280E+00	
17	4	3	-0.858E+00	17	5	1	-0.119E+01	17	5	2	-0.118E+00	17	5	3	-0.250E+00	17	5	4	0.223E+01	
17	6	1	-0.180E+00	17	6	2	-0.330E-01	17	6	3	-0.905E-01	17	6	4	-0.226E+01	17	6	5	-0.157E-01	
17	7	1	-0.119E+01	17	7	2	-0.379E+00	17	7	3	0.474E-01	17	7	4	-0.390E-01	17	7	5	-0.307E+00	
17	7	6	0.122E-01	17	8	1	-0.123E-01	17	8	2	-0.201E+01	17	8	3	-0.234E+01	17	8	4	-0.163E+00	
17	8	5	-0.788E+00	17	8	6	-0.827E-01	17	8	7	-0.163E+01									
18	2	1	0.255E+00	18	3	1	0.318E+00	18	3	2	0.202E+00	18	4	1	-0.473E+00	18	4	2	0.334E-01	
18	4	3	-0.150E+00	18	5	1	-0.216E+01	18	5	2	-0.141E+01	18	5	3	-0.402E+00	18	5	4	-0.108E+01	
18	6	1	-0.758E-01	18	6	2	-0.472E-01	18	6	3	0.273E-01	18	6	4	-0.436E-01	18	6	5	-0.155E+01	
18	7	1	-0.341E-01	18	7	2	-0.260E+00	18	7	3	-0.796E+00	18	7	4	-0.265E-01	18	7	5	-0.410E+00	
18	7	6	-0.717E+00	18	8	1	-0.153E+01	18	8	2	-0.720E-01	18	8	3	-0.802E+00	18	8	4	-0.112E+00	
18	8	5	-0.414E+00	18	8	6	-0.120E+00	18	8	7	-0.149E+01									
19	2	1	-0.180E+00	19	3	1	0.338E+00	19	3	2	0.171E+00	19	4	1	0.181E-01	19	4	2	-0.103E+01	
19	4	3	0.216E+00	19	5	1	-0.311E+00	19	5	2	0.113E-01	19	5	3	0.185E-01	19	5	4	-0.101E+00	
19	6	1	-0.162E+01	19	6	2	-0.415E+00	19	6	3	-0.114E+01	19	6	4	-0.526E+00	19	6	5	-0.193E+00	
19	7	1	-0.205E+01	19	7	2	-0.801E+00	19	7	3	-0.243E+00	19	7	4	-0.383E+00	19	7	5	-0.382E+00	
19	7	6	-0.635E-01	19	8	1	-0.146E+01	19	8	2	-0.787E-01	19	8	3	-0.689E-01	19	8	4	-0.630E+00	
19	8	5	-0.945E+00	19	8	6	0.449E-02	19	8	7	-0.355E+00									
20	2	1	-0.803E+00	20	3	1	0.316E+00	20	3	2	-0.155E+00	20	4	1	0.104E+00	20	4	2	0.268E+00	
20	4	3	-0.219E+01	20	5	1	-0.145E+00	20	5	2	-0.173E+01	20	5	3	-0.345E+00	20	5	4	-0.459E+00	
20	6	1	-0.266E+00	20	6	2	-0.123E+00	20	6	3	-0.516E+00	20	6	4	-0.105E+01	20	6	5	-0.238E-01	
20	7	1	-0.187E+00	20	7	2	-0.348E-01	20	7	3	-0.218E-01	20	7	4	-0.258E-01	20	7	5	-0.408E+00	
20	7	6	-0.868E-01	20	8	1	-0.184E+00	20	8	2	-0.803E-01	20	8	3	-0.179E+01	20	8	4	-0.296E+00	
20	8	5	-0.520E-02	20	8	6	-0.166E+01	20	8	7	-0.245E-02									

Contributions of the liking rating judgments to the final log likelihood.

CONTRIBUTIONS TO FINAL LOG LIKELIHOOD FUNCTION (SUBJECT, OBJECT, LIKELIHOOD)

1	1	-0.104E+01	1	2	-0.400E+01	1	3	-0.209E+01	1	4	-0.141E+01	1	5	-0.178E+01
1	1	-0.152E+01	1	2	-0.213E+01	1	3	-0.138E+01						
2	1	-0.177E+01	2	2	-0.122E+01	2	3	-0.137E+01	2	4	-0.180E+01	2	5	-0.137E+01
2	1	-0.176E+01	2	2	-0.145E+01	2	3	-0.144E+01						
3	1	-0.386E+01	3	2	-0.135E+01	3	3	-0.160E+01	3	4	-0.130E+01	3	5	-0.158E+01
3	1	-0.141E+01	3	2	-0.247E+01	3	3	-0.136E+01						
4	1	-0.164E+01	4	2	-0.130E+01	4	3	-0.117E+01	4	4	-0.105E+01	4	5	-0.170E+01
4	1	-0.197E+01	4	2	-0.137E+01	4	3	-0.129E+01						
5	1	-0.121E+01	5	2	-0.117E+01	5	3	-0.256E+01	5	4	-0.130E+01	5	5	-0.138E+01
5	1	-0.213E+01	5	2	-0.134E+01	5	3	-0.137E+01						
6	1	-0.196E+01	6	2	-0.157E+01	6	3	-0.137E+01	6	4	-0.136E+01	6	5	-0.231E+01
6	1	-0.184E+01	6	2	-0.145E+01	6	3	-0.197E+01						
7	1	-0.205E+01	7	2	-0.184E+01	7	3	-0.990E+00	7	4	-0.116E+01	7	5	-0.232E+01
7	1	-0.134E+01	7	2	-0.140E+01	7	3	-0.136E+01						
8	1	-0.142E+01	8	2	-0.130E+01	8	3	-0.131E+01	8	4	-0.105E+01	8	5	-0.170E+01
8	1	-0.138E+01	8	2	-0.195E+01	8	3	-0.171E+01						

9	1	-0.104E+01	9	2	-0.117E+01	9	3	-0.209E+01	9	4	-0.196E+01	9	5	-0.184E+01
9	1	-0.152E+01	9	2	-0.152E+01	9	3	-0.138E+01						
10	1	-0.117E+01	10	2	-0.157E+01	10	3	-0.130E+01	10	4	-0.413E+01	10	5	-0.170E+01
10	1	-0.136E+01	10	2	-0.184E+01	10	3	-0.141E+01						
11	1	-0.126E+01	11	2	-0.267E+01	11	3	-0.118E+01	11	4	-0.130E+01	11	5	-0.157E+01
11	1	-0.141E+01	11	2	-0.140E+01	11	3	-0.228E+01						
12	1	-0.301E+01	12	2	-0.130E+01	12	3	-0.131E+01	12	4	-0.105E+01	12	5	-0.132E+01
12	1	-0.138E+01	12	2	-0.173E+01	12	3	-0.171E+01						
13	1	-0.121E+01	13	2	-0.142E+01	13	3	-0.164E+01	13	4	-0.141E+01	13	5	-0.129E+01
13	1	-0.152E+01	13	2	-0.158E+01	13	3	-0.236E+01						
14	1	-0.125E+01	14	2	-0.157E+01	14	3	-0.130E+01	14	4	-0.133E+01	14	5	-0.201E+01
14	1	-0.247E+01	14	2	-0.145E+01	14	3	-0.141E+01						
15	1	-0.205E+01	15	2	-0.135E+01	15	3	-0.990E+00	15	4	-0.116E+01	15	5	-0.138E+01
15	1	-0.181E+01	15	2	-0.140E+01	15	3	-0.136E+01						
16	1	-0.128E+01	16	2	-0.130E+01	16	3	-0.131E+01	16	4	-0.127E+01	16	5	-0.170E+01
16	1	-0.138E+01	16	2	-0.136E+01	16	3	-0.129E+01						
17	1	-0.158E+01	17	2	-0.151E+01	17	3	-0.256E+01	17	4	-0.196E+01	17	5	-0.138E+01
17	1	-0.134E+01	17	2	-0.294E+01	17	3	-0.196E+01						
18	1	-0.125E+01	18	2	-0.157E+01	18	3	-0.137E+01	18	4	-0.180E+01	18	5	-0.170E+01
18	1	-0.136E+01	18	2	-0.137E+01	18	3	-0.144E+01						
19	1	-0.126E+01	19	2	-0.135E+01	19	3	-0.990E+00	19	4	-0.130E+01	19	5	-0.157E+01
19	1	-0.134E+01	19	2	-0.140E+01	19	3	-0.136E+01						
20	1	-0.201E+01	20	2	-0.130E+01	20	3	-0.117E+01	20	4	-0.383E+01	20	5	-0.132E+01
20	1	-0.172E+01	20	2	-0.173E+01	20	3	-0.142E+01						
21	1	-0.260E+01	21	2	-0.117E+01	21	3	-0.137E+01	21	4	-0.130E+01	21	5	-0.129E+01
21	1	-0.229E+01	21	2	-0.229E+01	21	3	-0.137E+01						
22	1	-0.177E+01	22	2	-0.265E+01	22	3	-0.418E+01	22	4	-0.180E+01	22	5	-0.137E+01
22	1	-0.247E+01	22	2	-0.137E+01	22	3	-0.144E+01						
23	1	-0.139E+01	23	2	-0.184E+01	23	3	-0.160E+01	23	4	-0.116E+01	23	5	-0.157E+01
23	1	-0.141E+01	23	2	-0.134E+01	23	3	-0.167E+01						
24	1	-0.201E+01	24	2	-0.186E+01	24	3	-0.370E+01	24	4	-0.154E+01	24	5	-0.170E+01
24	1	-0.138E+01	24	2	-0.173E+01	24	3	-0.129E+01						
25	1	-0.121E+01	25	2	-0.151E+01	25	3	-0.209E+01	25	4	-0.168E+01	25	5	-0.178E+01
25	1	-0.157E+01	25	2	-0.294E+01	25	3	-0.137E+01						
26	1	-0.117E+01	26	2	-0.101E+01	26	3	-0.137E+01	26	4	-0.133E+01	26	5	-0.141E+01
26	1	-0.247E+01	26	2	-0.184E+01	26	3	-0.197E+01						
27	1	-0.165E+01	27	2	-0.184E+01	27	3	-0.160E+01	27	4	-0.116E+01	27	5	-0.157E+01
27	1	-0.134E+01	27	2	-0.134E+01	27	3	-0.167E+01						
28	1	-0.142E+01	28	2	-0.130E+01	28	3	-0.213E+01	28	4	-0.250E+01	28	5	-0.132E+01
28	1	-0.236E+01	28	2	-0.195E+01	28	3	-0.188E+01						
29	1	-0.121E+01	29	2	-0.117E+01	29	3	-0.123E+01	29	4	-0.141E+01	29	5	-0.178E+01
29	1	-0.213E+01	29	2	-0.294E+01	29	3	-0.196E+01						
30	1	-0.177E+01	30	2	-0.157E+01	30	3	-0.130E+01	30	4	-0.133E+01	30	5	-0.137E+01
30	1	-0.184E+01	30	2	-0.145E+01	30	3	-0.141E+01						
31	1	-0.139E+01	31	2	-0.135E+01	31	3	-0.990E+00	31	4	-0.130E+01	31	5	-0.138E+01
31	1	-0.181E+01	31	2	-0.181E+01	31	3	-0.136E+01						
32	1	-0.128E+01	32	2	-0.130E+01	32	3	-0.117E+01	32	4	-0.383E+01	32	5	-0.132E+01
32	1	-0.197E+01	32	2	-0.136E+01	32	3	-0.142E+01						
33	1	-0.104E+01	33	2	-0.151E+01	33	3	-0.123E+01	33	4	-0.292E+01	33	5	-0.138E+01
33	1	-0.134E+01	33	2	-0.134E+01	33	3	-0.137E+01						
34	1	-0.125E+01	34	2	-0.122E+01	34	3	-0.189E+01	34	4	-0.133E+01	34	5	-0.231E+01
34	1	-0.176E+01	34	2	-0.137E+01	34	3	-0.228E+01						
35	1	-0.126E+01	35	2	-0.184E+01	35	3	-0.990E+00	35	4	-0.130E+01	35	5	-0.158E+01
35	1	-0.181E+01	35	2	-0.181E+01	35	3	-0.136E+01						
36	1	-0.142E+01	36	2	-0.186E+01	36	3	-0.131E+01	36	4	-0.127E+01	36	5	-0.132E+01
36	1	-0.236E+01	36	2	-0.137E+01	36	3	-0.129E+01						
37	1	-0.158E+01	37	2	-0.243E+01	37	3	-0.398E+01	37	4	-0.168E+01	37	5	-0.178E+01
37	1	-0.157E+01	37	2	-0.229E+01	37	3	-0.137E+01						
38	1	-0.125E+01	38	2	-0.157E+01	38	3	-0.137E+01	38	4	-0.185E+01	38	5	-0.201E+01
38	1	-0.184E+01	38	2	-0.245E+01	38	3	-0.141E+01						
39	1	-0.126E+01	39	2	-0.135E+01	39	3	-0.118E+01	39	4	-0.203E+01	39	5	-0.158E+01
39	1	-0.246E+01	39	2	-0.140E+01	39	3	-0.206E+01						
40	1	-0.128E+01	40	2	-0.130E+01	40	3	-0.131E+01	40	4	-0.127E+01	40	5	-0.170E+01
40	1	-0.136E+01	40	2	-0.549E+01	40	3	-0.129E+01						
41	1	-0.121E+01	41	2	-0.142E+01	41	3	-0.137E+01	41	4	-0.130E+01	41	5	-0.184E+01
41	1	-0.157E+01	41	2	-0.294E+01	41	3	-0.236E+01						
42	1	-0.177E+01	42	2	-0.157E+01	42	3	-0.137E+01	42	4	-0.280E+01	42	5	-0.413E+01
42	1	-0.184E+01	42	2	-0.137E+01	42	3	-0.144E+01						
43	1	-0.126E+01	43	2	-0.289E+01	43	3	-0.118E+01	43	4	-0.168E+01	43	5	-0.158E+01
43	1	-0.181E+01	43	2	-0.134E+01	43	3	-0.167E+01						
44	1	-0.164E+01	44	2	-0.284E+01	44	3	-0.117E+01	44	4	-0.105E+01	44	5	-0.170E+01
44	1	-0.136E+01	44	2	-0.136E+01	44	3	-0.171E+01						
45	1	-0.121E+01	45	2	-0.142E+01	45	3	-0.137E+01	45	4	-0.141E+01	45	5	-0.184E+01
45	1	-0.213E+01	45	2	-0.134E+01	45	3	-0.137E+01						
46	1	-0.177E+01	46	2	-0.157E+01	46	3	-0.130E+01	46	4	-0.133E+01	46	5	-0.137E+01
46	1	-0.184E+01	46	2	-0.145E+01	46	3	-0.141E+01						
47	1	-0.165E+01	47	2	-0.554E+01	47	3	-0.118E+01	47	4	-0.168E+01	47	5	-0.157E+01
47	1	-0.134E+01	47	2	-0.181E+01	47	3	-0.136E+01						
48	1	-0.201E+01	48	2	-0.134E+01	48	3	-0.117E+01	48	4	-0.105E+01	48	5	-0.170E+01
48	1	-0.197E+01	48	2	-0.136E+01	48	3	-0.188E+01						
49	1	-0.121E+01	49	2	-0.243E+01	49	3	-0.256E+01	49	4	-0.130E+01	49	5	-0.184E+01
49	1	-0.134E+01	49	2	-0.213E+01	49	3	-0.138E+01						
50	1	-0.125E+01	50	2	-0.265E+01	50	3	-0.130E+01	50	4	-0.133E+01	50	5	-0.413E+01
50	1	-0.176E+01	50	2	-0.177E+01	50	3	-0.141E+01						
51	1	-0.139E+01	51	2	-0.135E+01	51	3	-0.277E+01	51	4	-0.130E+01	51	5	-0.279E+01
51	1	-0.134E+01	51	2	-0.134E+01	51	3	-0.167E+01						
52	1	-0.142E+01	52	2	-0.134E+01	52	3	-0.213E+01	52	4	-0.154E+01	52	5	-0.188E+01
52	1	-0.321E+01	52	2	-0.136E+01	52	3	-0.188E+01						
53	1	-0.104E+01	53	2	-0.117E+01	53	3	-0.209E+01	53	4	-0.265E+01	53	5	-0.138E+01
53	1	-0.157E+01	53	2	-0.152E+01	53	3	-0.172E+01						
54	1	-0.117E+01	54	2	-0.101E+01	54	3	-0.418E+01	54	4	-0.185E+01	54	5	-0.201E+01
54	1	-0.145E+01	54	2	-0.137E+01	54	3	-0.141E+01						

55	1	-0.165E+01	55	2	-0.135E+01	55	3	-0.160E+01	55	4	-0.168E+01	55	5	-0.157E+01
55	1	-0.181E+01	55	2	-0.181E+01	55	3	-0.142E+01						
56	1	-0.201E+01	56	2	-0.284E+01	56	3	-0.117E+01	56	4	-0.105E+01	56	5	-0.188E+01
56	1	-0.172E+01	56	2	-0.195E+01	56	3	-0.129E+01						
57	1	-0.121E+01	57	2	-0.117E+01	57	3	-0.164E+01	57	4	-0.265E+01	57	5	-0.129E+01
57	1	-0.213E+01	57	2	-0.158E+01	57	3	-0.236E+01						
58	1	-0.117E+01	58	2	-0.157E+01	58	3	-0.137E+01	58	4	-0.133E+01	58	5	-0.137E+01
58	1	-0.145E+01	58	2	-0.137E+01	58	3	-0.197E+01						
59	1	-0.126E+01	59	2	-0.135E+01	59	3	-0.118E+01	59	4	-0.130E+01	59	5	-0.157E+01
59	1	-0.134E+01	59	2	-0.181E+01	59	3	-0.136E+01						
60	1	-0.142E+01	60	2	-0.134E+01	60	3	-0.117E+01	60	4	-0.127E+01	60	5	-0.170E+01
60	1	-0.136E+01	60	2	-0.137E+01	60	3	-0.129E+01						
61	1	-0.158E+01	61	2	-0.151E+01	61	3	-0.137E+01	61	4	-0.130E+01	61	5	-0.129E+01
61	1	-0.157E+01	61	2	-0.152E+01	61	3	-0.137E+01						
62	1	-0.324E+01	62	2	-0.122E+01	62	3	-0.137E+01	62	4	-0.133E+01	62	5	-0.201E+01
62	1	-0.247E+01	62	2	-0.137E+01	62	3	-0.228E+01						
63	1	-0.331E+01	63	2	-0.135E+01	63	3	-0.118E+01	63	4	-0.203E+01	63	5	-0.138E+01
63	1	-0.141E+01	63	2	-0.547E+01	63	3	-0.228E+01						
64	1	-0.128E+01	64	2	-0.130E+01	64	3	-0.165E+01	64	4	-0.250E+01	64	5	-0.188E+01
64	1	-0.197E+01	64	2	-0.137E+01	64	3	-0.188E+01						
65	1	-0.104E+01	65	2	-0.117E+01	65	3	-0.164E+01	65	4	-0.141E+01	65	5	-0.138E+01
65	1	-0.134E+01	65	2	-0.152E+01	65	3	-0.236E+01						
66	1	-0.117E+01	66	2	-0.157E+01	66	3	-0.137E+01	66	4	-0.133E+01	66	5	-0.231E+01
66	1	-0.326E+01	66	2	-0.184E+01	66	3	-0.172E+01						
67	1	-0.126E+01	67	2	-0.135E+01	67	3	-0.990E+00	67	4	-0.130E+01	67	5	-0.158E+01
67	1	-0.141E+01	67	2	-0.134E+01	67	3	-0.206E+01						
68	1	-0.128E+01	68	2	-0.284E+01	68	3	-0.131E+01	68	4	-0.154E+01	68	5	-0.132E+01
68	1	-0.136E+01	68	2	-0.137E+01	68	3	-0.171E+01						
69	1	-0.260E+01	69	2	-0.142E+01	69	3	-0.256E+01	69	4	-0.130E+01	69	5	-0.138E+01
69	1	-0.152E+01	69	2	-0.294E+01	69	3	-0.138E+01						
70	1	-0.125E+01	70	2	-0.101E+01	70	3	-0.175E+01	70	4	-0.136E+01	70	5	-0.201E+01
70	1	-0.136E+01	70	2	-0.137E+01	70	3	-0.228E+01						
71	1	-0.126E+01	71	2	-0.180E+01	71	3	-0.990E+00	71	4	-0.116E+01	71	5	-0.158E+01
71	1	-0.181E+01	71	2	-0.247E+01	71	3	-0.206E+01						
72	1	-0.142E+01	72	2	-0.130E+01	72	3	-0.117E+01	72	4	-0.154E+01	72	5	-0.132E+01
72	1	-0.197E+01	72	2	-0.136E+01	72	3	-0.142E+01						
73	1	-0.121E+01	73	2	-0.142E+01	73	3	-0.256E+01	73	4	-0.265E+01	73	5	-0.460E+01
73	1	-0.213E+01	73	2	-0.134E+01	73	3	-0.172E+01						
74	1	-0.196E+01	74	2	-0.265E+01	74	3	-0.137E+01	74	4	-0.136E+01	74	5	-0.137E+01
74	1	-0.136E+01	74	2	-0.417E+01	74	3	-0.172E+01						
75	1	-0.165E+01	75	2	-0.135E+01	75	3	-0.160E+01	75	4	-0.130E+01	75	5	-0.138E+01
75	1	-0.181E+01	75	2	-0.247E+01	75	3	-0.142E+01						
76	1	-0.164E+01	76	2	-0.130E+01	76	3	-0.131E+01	76	4	-0.154E+01	76	5	-0.132E+01
76	1	-0.197E+01	76	2	-0.136E+01	76	3	-0.171E+01						
77	1	-0.104E+01	77	2	-0.142E+01	77	3	-0.137E+01	77	4	-0.141E+01	77	5	-0.178E+01
77	1	-0.157E+01	77	2	-0.152E+01	77	3	-0.172E+01						
78	1	-0.117E+01	78	2	-0.122E+01	78	3	-0.280E+01	78	4	-0.136E+01	78	5	-0.141E+01
78	1	-0.176E+01	78	2	-0.145E+01	78	3	-0.172E+01						
79	1	-0.205E+01	79	2	-0.135E+01	79	3	-0.160E+01	79	4	-0.116E+01	79	5	-0.138E+01
79	1	-0.134E+01	79	2	-0.140E+01	79	3	-0.142E+01						
80	1	-0.128E+01	80	2	-0.186E+01	80	3	-0.131E+01	80	4	-0.154E+01	80	5	-0.145E+01
80	1	-0.172E+01	80	2	-0.173E+01	80	3	-0.142E+01						
81	1	-0.121E+01	81	2	-0.151E+01	81	3	-0.137E+01	81	4	-0.168E+01	81	5	-0.138E+01
81	1	-0.229E+01	81	2	-0.134E+01	81	3	-0.138E+01						
82	1	-0.117E+01	82	2	-0.122E+01	82	3	-0.130E+01	82	4	-0.133E+01	82	5	-0.201E+01
82	1	-0.136E+01	82	2	-0.177E+01	82	3	-0.141E+01						
83	1	-0.139E+01	83	2	-0.180E+01	83	3	-0.990E+00	83	4	-0.130E+01	83	5	-0.279E+01
83	1	-0.141E+01	83	2	-0.134E+01	83	3	-0.136E+01						
84	1	-0.164E+01	84	2	-0.130E+01	84	3	-0.213E+01	84	4	-0.105E+01	84	5	-0.132E+01
84	1	-0.321E+01	84	2	-0.136E+01	84	3	-0.171E+01						
85	1	-0.158E+01	85	2	-0.400E+01	85	3	-0.137E+01	85	4	-0.265E+01	85	5	-0.184E+01
85	1	-0.157E+01	85	2	-0.213E+01	85	3	-0.137E+01						
86	1	-0.117E+01	86	2	-0.122E+01	86	3	-0.130E+01	86	4	-0.180E+01	86	5	-0.141E+01
86	1	-0.184E+01	86	2	-0.137E+01	86	3	-0.304E+01						
87	1	-0.139E+01	87	2	-0.135E+01	87	3	-0.160E+01	87	4	-0.116E+01	87	5	-0.138E+01
87	1	-0.181E+01	87	2	-0.140E+01	87	3	-0.142E+01						
88	1	-0.201E+01	88	2	-0.130E+01	88	3	-0.165E+01	88	4	-0.154E+01	88	5	-0.188E+01
88	1	-0.136E+01	88	2	-0.173E+01	88	3	-0.171E+01						
89	1	-0.121E+01	89	2	-0.117E+01	89	3	-0.137E+01	89	4	-0.141E+01	89	5	-0.129E+01
89	1	-0.157E+01	89	2	-0.158E+01	89	3	-0.423E+01						
90	1	-0.125E+01	90	2	-0.122E+01	90	3	-0.130E+01	90	4	-0.180E+01	90	5	-0.137E+01
90	1	-0.145E+01	90	2	-0.417E+01	90	3	-0.144E+01						
91	1	-0.139E+01	91	2	-0.184E+01	91	3	-0.118E+01	91	4	-0.116E+01	91	5	-0.138E+01
91	1	-0.181E+01	91	2	-0.140E+01	91	3	-0.311E+01						
92	1	-0.142E+01	92	2	-0.179E+01	92	3	-0.273E+01	92	4	-0.127E+01	92	5	-0.132E+01
92	1	-0.138E+01	92	2	-0.237E+01	92	3	-0.259E+01						
93	1	-0.121E+01	93	2	-0.142E+01	93	3	-0.164E+01	93	4	-0.196E+01	93	5	-0.256E+01
93	1	-0.152E+01	93	2	-0.152E+01	93	3	-0.196E+01						
94	1	-0.117E+01	94	2	-0.101E+01	94	3	-0.130E+01	94	4	-0.180E+01	94	5	-0.141E+01
94	1	-0.247E+01	94	2	-0.324E+01	94	3	-0.172E+01						
95	1	-0.139E+01	95	2	-0.180E+01	95	3	-0.118E+01	95	4	-0.116E+01	95	5	-0.138E+01
95	1	-0.246E+01	95	2	-0.140E+01	95	3	-0.206E+01						
96	1	-0.260E+01	96	2	-0.186E+01	96	3	-0.117E+01	96	4	-0.250E+01	96	5	-0.132E+01
96	1	-0.425E+01	96	2	-0.323E+01	96	3	-0.188E+01						
97	1	-0.121E+01	97	2	-0.142E+01	97	3	-0.209E+01	97	4	-0.168E+01	97	5	-0.138E+01
97	1	-0.134E+01	97	2	-0.229E+01	97	3	-0.320E+01						
98	1	-0.125E+01	98	2	-0.157E+01	98	3	-0.130E+01	98	4	-0.136E+01	98	5	-0.137E+01
98	1	-0.136E+01	98	2	-0.137E+01	98	3	-0.172E+01						
99	1	-0.253E+01	99	2	-0.267E+01	99	3	-0.160E+01	99	4	-0.168E+01	99	5	-0.138E+01
99	1	-0.134E+01	99	2	-0.433E+01	99	3	-0.228E+01						
100	1	-0.128E+01	100	2	-0.286E+01	100	3	-0.131E+01	100	4	-0.154E+01	100	5	-0.254E+01
100	1	-0.136E+01	100	2	-0.173E+01	100	3	-0.188E+01						

101	1	-0.104E+01	101	2	-0.142E+01	101	3	-0.256E+01	101	4	-0.141E+01	101	5	-0.184E+01
101	1	-0.157E+01	101	2	-0.158E+01	101	3	-0.236E+01						
102	1	-0.117E+01	102	2	-0.122E+01	102	3	-0.130E+01	102	4	-0.136E+01	102	5	-0.141E+01
102	1	-0.184E+01	102	2	-0.137E+01	102	3	-0.304E+01						
103	1	-0.139E+01	103	2	-0.184E+01	103	3	-0.990E+00	103	4	-0.116E+01	103	5	-0.207E+01
103	1	-0.246E+01	103	2	-0.140E+01	103	3	-0.311E+01						
104	1	-0.128E+01	104	2	-0.179E+01	104	3	-0.131E+01	104	4	-0.105E+01	104	5	-0.145E+01
104	1	-0.172E+01	104	2	-0.136E+01	104	3	-0.188E+01						
105	1	-0.158E+01	105	2	-0.142E+01	105	3	-0.137E+01	105	4	-0.196E+01	105	5	-0.129E+01
105	1	-0.134E+01	105	2	-0.213E+01	105	3	-0.172E+01						
106	1	-0.117E+01	106	2	-0.101E+01	106	3	-0.175E+01	106	4	-0.136E+01	106	5	-0.137E+01
106	1	-0.136E+01	106	2	-0.184E+01	106	3	-0.504E+01						
107	1	-0.165E+01	107	2	-0.135E+01	107	3	-0.990E+00	107	4	-0.130E+01	107	5	-0.158E+01
107	1	-0.246E+01	107	2	-0.247E+01	107	3	-0.142E+01						
108	1	-0.128E+01	108	2	-0.284E+01	108	3	-0.273E+01	108	4	-0.127E+01	108	5	-0.170E+01
108	1	-0.172E+01	108	2	-0.136E+01	108	3	-0.171E+01						
109	1	-0.104E+01	109	2	-0.117E+01	109	3	-0.137E+01	109	4	-0.130E+01	109	5	-0.138E+01
109	1	-0.152E+01	109	2	-0.152E+01	109	3	-0.172E+01						
110	1	-0.177E+01	110	2	-0.101E+01	110	3	-0.137E+01	110	4	-0.136E+01	110	5	-0.201E+01
110	1	-0.136E+01	110	2	-0.145E+01	110	3	-0.141E+01						
111	1	-0.126E+01	111	2	-0.135E+01	111	3	-0.118E+01	111	4	-0.203E+01	111	5	-0.138E+01
111	1	-0.181E+01	111	2	-0.181E+01	111	3	-0.142E+01						
112	1	-0.201E+01	112	2	-0.186E+01	112	3	-0.117E+01	112	4	-0.154E+01	112	5	-0.145E+01
112	1	-0.172E+01	112	2	-0.137E+01	112	3	-0.129E+01						
113	1	-0.121E+01	113	2	-0.142E+01	113	3	-0.137E+01	113	4	-0.141E+01	113	5	-0.129E+01
113	1	-0.157E+01	113	2	-0.152E+01	113	3	-0.172E+01						
114	1	-0.117E+01	114	2	-0.101E+01	114	3	-0.189E+01	114	4	-0.180E+01	114	5	-0.231E+01
114	1	-0.145E+01	114	2	-0.245E+01	114	3	-0.141E+01						
115	1	-0.139E+01	115	2	-0.135E+01	115	3	-0.990E+00	115	4	-0.130E+01	115	5	-0.157E+01
115	1	-0.246E+01	115	2	-0.134E+01	115	3	-0.136E+01						
116	1	-0.142E+01	116	2	-0.130E+01	116	3	-0.131E+01	116	4	-0.250E+01	116	5	-0.145E+01
116	1	-0.236E+01	116	2	-0.173E+01	116	3	-0.129E+01						
117	1	-0.158E+01	117	2	-0.142E+01	117	3	-0.123E+01	117	4	-0.141E+01	117	5	-0.178E+01
117	1	-0.294E+01	117	2	-0.158E+01	117	3	-0.137E+01						
118	1	-0.117E+01	118	2	-0.122E+01	118	3	-0.175E+01	118	4	-0.136E+01	118	5	-0.141E+01
118	1	-0.145E+01	118	2	-0.184E+01	118	3	-0.144E+01						
119	1	-0.205E+01	119	2	-0.392E+01	119	3	-0.277E+01	119	4	-0.116E+01	119	5	-0.157E+01
119	1	-0.141E+01	119	2	-0.140E+01	119	3	-0.167E+01						
120	1	-0.164E+01	120	2	-0.186E+01	120	3	-0.117E+01	120	4	-0.127E+01	120	5	-0.132E+01
120	1	-0.236E+01	120	2	-0.173E+01	120	3	-0.142E+01						
121	1	-0.158E+01	121	2	-0.117E+01	121	3	-0.123E+01	121	4	-0.130E+01	121	5	-0.256E+01
121	1	-0.157E+01	121	2	-0.134E+01	121	3	-0.236E+01						
122	1	-0.125E+01	122	2	-0.157E+01	122	3	-0.189E+01	122	4	-0.443E+01	122	5	-0.137E+01
122	1	-0.184E+01	122	2	-0.184E+01	122	3	-0.172E+01						
123	1	-0.165E+01	123	2	-0.135E+01	123	3	-0.990E+00	123	4	-0.130E+01	123	5	-0.138E+01
123	1	-0.181E+01	123	2	-0.181E+01	123	3	-0.142E+01						
124	1	-0.301E+01	124	2	-0.186E+01	124	3	-0.165E+01	124	4	-0.154E+01	124	5	-0.188E+01
124	1	-0.236E+01	124	2	-0.137E+01	124	3	-0.259E+01						
125	1	-0.398E+01	125	2	-0.151E+01	125	3	-0.137E+01	125	4	-0.141E+01	125	5	-0.138E+01
125	1	-0.294E+01	125	2	-0.158E+01	125	3	-0.196E+01						
126	1	-0.117E+01	126	2	-0.122E+01	126	3	-0.137E+01	126	4	-0.133E+01	126	5	-0.141E+01
126	1	-0.247E+01	126	2	-0.137E+01	126	3	-0.172E+01						
127	1	-0.165E+01	127	2	-0.184E+01	127	3	-0.118E+01	127	4	-0.168E+01	127	5	-0.138E+01
127	1	-0.134E+01	127	2	-0.134E+01	127	3	-0.142E+01						
128	1	-0.164E+01	128	2	-0.134E+01	128	3	-0.117E+01	128	4	-0.127E+01	128	5	-0.170E+01
128	1	-0.136E+01	128	2	-0.136E+01	128	3	-0.129E+01						
129	1	-0.121E+01	129	2	-0.142E+01	129	3	-0.137E+01	129	4	-0.141E+01	129	5	-0.256E+01
129	1	-0.134E+01	129	2	-0.158E+01	129	3	-0.138E+01						
130	1	-0.125E+01	130	2	-0.157E+01	130	3	-0.137E+01	130	4	-0.185E+01	130	5	-0.313E+01
130	1	-0.184E+01	130	2	-0.184E+01	130	3	-0.228E+01						
131	1	-0.165E+01	131	2	-0.135E+01	131	3	-0.990E+00	131	4	-0.130E+01	131	5	-0.138E+01
131	1	-0.141E+01	131	2	-0.134E+01	131	3	-0.142E+01						
132	1	-0.142E+01	132	2	-0.286E+01	132	3	-0.131E+01	132	4	-0.105E+01	132	5	-0.145E+01
132	1	-0.236E+01	132	2	-0.137E+01	132	3	-0.129E+01						
133	1	-0.104E+01	133	2	-0.142E+01	133	3	-0.137E+01	133	4	-0.141E+01	133	5	-0.138E+01
133	1	-0.134E+01	133	2	-0.152E+01	133	3	-0.172E+01						
134	1	-0.507E+01	134	2	-0.157E+01	134	3	-0.280E+01	134	4	-0.278E+01	134	5	-0.141E+01
134	1	-0.184E+01	134	2	-0.245E+01	134	3	-0.141E+01						
135	1	-0.126E+01	135	2	-0.135E+01	135	3	-0.990E+00	135	4	-0.130E+01	135	5	-0.138E+01
135	1	-0.134E+01	135	2	-0.181E+01	135	3	-0.142E+01						
136	1	-0.164E+01	136	2	-0.284E+01	136	3	-0.131E+01	136	4	-0.154E+01	136	5	-0.254E+01
136	1	-0.138E+01	136	2	-0.237E+01	136	3	-0.142E+01						
137	1	-0.121E+01	137	2	-0.142E+01	137	3	-0.123E+01	137	4	-0.141E+01	137	5	-0.184E+01
137	1	-0.152E+01	137	2	-0.213E+01	137	3	-0.138E+01						
138	1	-0.117E+01	138	2	-0.101E+01	138	3	-0.280E+01	138	4	-0.133E+01	138	5	-0.137E+01
138	1	-0.184E+01	138	2	-0.137E+01	138	3	-0.197E+01						
139	1	-0.165E+01	139	2	-0.267E+01	139	3	-0.990E+00	139	4	-0.116E+01	139	5	-0.158E+01
139	1	-0.181E+01	139	2	-0.134E+01	139	3	-0.167E+01						
140	1	-0.142E+01	140	2	-0.284E+01	140	3	-0.117E+01	140	4	-0.250E+01	140	5	-0.188E+01
140	1	-0.138E+01	140	2	-0.173E+01	140	3	-0.259E+01						
141	1	-0.158E+01	141	2	-0.117E+01	141	3	-0.137E+01	141	4	-0.141E+01	141	5	-0.129E+01
141	1	-0.152E+01	141	2	-0.152E+01	141	3	-0.172E+01						
142	1	-0.196E+01	142	2	-0.157E+01	142	3	-0.130E+01	142	4	-0.136E+01	142	5	-0.170E+01
142	1	-0.176E+01	142	2	-0.640E+01	142	3	-0.228E+01						
143	1	-0.165E+01	143	2	-0.135E+01	143	3	-0.990E+00	143	4	-0.168E+01	143	5	-0.158E+01
143	1	-0.181E+01	143	2	-0.247E+01	143	3	-0.228E+01						
144	1	-0.128E+01	144	2	-0.130E+01	144	3	-0.131E+01	144	4	-0.154E+01	144	5	-0.170E+01
144	1	-0.172E+01	144	2	-0.173E+01	144	3	-0.129E+01						
145	1	-0.260E+01	145	2	-0.243E+01	145	3	-0.137E+01	145	4	-0.427E+01	145	5	-0.129E+01
145	1	-0.134E+01	145	2	-0.152E+01	145	3	-0.138E+01						
146	1	-0.125E+01	146	2	-0.122E+01	146	3	-0.284E+01	146	4	-0.136E+01	146	5	-0.137E+01
146	1	-0.145E+01	146	2	-0.137E+01	146	3	-0.197E+01						

147	1	-0.126E+01	147	2	-0.135E+01	147	3	-0.118E+01	147	4	-0.168E+01	147	5	-0.138E+01
147	1	-0.141E+01	147	2	-0.140E+01	147	3	-0.136E+01						
148	1	-0.440E+01	148	2	-0.130E+01	148	3	-0.131E+01	148	4	-0.127E+01	148	5	-0.188E+01
148	1	-0.197E+01	148	2	-0.136E+01	148	3	-0.129E+01						
149	1	-0.104E+01	149	2	-0.243E+01	149	3	-0.137E+01	149	4	-0.141E+01	149	5	-0.129E+01
149	1	-0.229E+01	149	2	-0.158E+01	149	3	-0.138E+01						
150	1	-0.125E+01	150	2	-0.101E+01	150	3	-0.280E+01	150	4	-0.133E+01	150	5	-0.137E+01
150	1	-0.184E+01	150	2	-0.245E+01	150	3	-0.172E+01						
151	1	-0.126E+01	151	2	-0.135E+01	151	3	-0.990E+00	151	4	-0.116E+01	151	5	-0.373E+01
151	1	-0.134E+01	151	2	-0.673E+01	151	3	-0.142E+01						
152	1	-0.164E+01	152	2	-0.130E+01	152	3	-0.437E+01	152	4	-0.105E+01	152	5	-0.132E+01
152	1	-0.172E+01	152	2	-0.136E+01	152	3	-0.259E+01						
153	1	-0.104E+01	153	2	-0.142E+01	153	3	-0.209E+01	153	4	-0.130E+01	153	5	-0.349E+01
153	1	-0.134E+01	153	2	-0.152E+01	153	3	-0.138E+01						
154	1	-0.125E+01	154	2	-0.101E+01	154	3	-0.189E+01	154	4	-0.133E+01	154	5	-0.137E+01
154	1	-0.136E+01	154	2	-0.184E+01	154	3	-0.228E+01						
155	1	-0.126E+01	155	2	-0.135E+01	155	3	-0.990E+00	155	4	-0.168E+01	155	5	-0.158E+01
155	1	-0.141E+01	155	2	-0.181E+01	155	3	-0.136E+01						
156	1	-0.201E+01	156	2	-0.130E+01	156	3	-0.117E+01	156	4	-0.127E+01	156	5	-0.145E+01
156	1	-0.136E+01	156	2	-0.195E+01	156	3	-0.129E+01						
157	1	-0.158E+01	157	2	-0.587E+01	157	3	-0.123E+01	157	4	-0.141E+01	157	5	-0.349E+01
157	1	-0.134E+01	157	2	-0.213E+01	157	3	-0.138E+01						
158	1	-0.117E+01	158	2	-0.101E+01	158	3	-0.130E+01	158	4	-0.133E+01	158	5	-0.141E+01
158	1	-0.184E+01	158	2	-0.177E+01	158	3	-0.144E+01						
159	1	-0.139E+01	159	2	-0.135E+01	159	3	-0.990E+00	159	4	-0.168E+01	159	5	-0.158E+01
159	1	-0.134E+01	159	2	-0.181E+01	159	3	-0.228E+01						
160	1	-0.164E+01	160	2	-0.134E+01	160	3	-0.117E+01	160	4	-0.154E+01	160	5	-0.145E+01
160	1	-0.138E+01	160	2	-0.173E+01	160	3	-0.142E+01						
161	1	-0.398E+01	161	2	-0.234E+01	161	3	-0.123E+01	161	4	-0.196E+01	161	5	-0.138E+01
161	1	-0.213E+01	161	2	-0.134E+01	161	3	-0.137E+01						
162	1	-0.177E+01	162	2	-0.122E+01	162	3	-0.130E+01	162	4	-0.133E+01	162	5	-0.170E+01
162	1	-0.184E+01	162	2	-0.145E+01	162	3	-0.144E+01						
163	1	-0.331E+01	163	2	-0.180E+01	163	3	-0.437E+01	163	4	-0.116E+01	163	5	-0.232E+01
163	1	-0.181E+01	163	2	-0.181E+01	163	3	-0.228E+01						
164	1	-0.142E+01	164	2	-0.134E+01	164	3	-0.213E+01	164	4	-0.127E+01	164	5	-0.188E+01
164	1	-0.236E+01	164	2	-0.195E+01	164	3	-0.129E+01						
165	1	-0.121E+01	165	2	-0.142E+01	165	3	-0.164E+01	165	4	-0.130E+01	165	5	-0.129E+01
165	1	-0.134E+01	165	2	-0.213E+01	165	3	-0.196E+01						
166	1	-0.117E+01	166	2	-0.122E+01	166	3	-0.189E+01	166	4	-0.136E+01	166	5	-0.137E+01
166	1	-0.184E+01	166	2	-0.184E+01	166	3	-0.172E+01						
167	1	-0.205E+01	167	2	-0.267E+01	167	3	-0.990E+00	167	4	-0.116E+01	167	5	-0.207E+01
167	1	-0.246E+01	167	2	-0.140E+01	167	3	-0.136E+01						
168	1	-0.201E+01	168	2	-0.130E+01	168	3	-0.165E+01	168	4	-0.154E+01	168	5	-0.132E+01
168	1	-0.136E+01	168	2	-0.136E+01	168	3	-0.188E+01						
169	1	-0.121E+01	169	2	-0.117E+01	169	3	-0.164E+01	169	4	-0.130E+01	169	5	-0.178E+01
169	1	-0.134E+01	169	2	-0.158E+01	169	3	-0.138E+01						
170	1	-0.125E+01	170	2	-0.265E+01	170	3	-0.130E+01	170	4	-0.185E+01	170	5	-0.201E+01
170	1	-0.145E+01	170	2	-0.177E+01	170	3	-0.141E+01						
171	1	-0.126E+01	171	2	-0.180E+01	171	3	-0.990E+00	171	4	-0.168E+01	171	5	-0.158E+01
171	1	-0.181E+01	171	2	-0.134E+01	171	3	-0.136E+01						
172	1	-0.142E+01	172	2	-0.130E+01	172	3	-0.165E+01	172	4	-0.127E+01	172	5	-0.145E+01
172	1	-0.138E+01	172	2	-0.136E+01	172	3	-0.129E+01						
173	1	-0.260E+01	173	2	-0.234E+01	173	3	-0.137E+01	173	4	-0.130E+01	173	5	-0.184E+01
173	1	-0.152E+01	173	2	-0.229E+01	173	3	-0.172E+01						
174	1	-0.177E+01	174	2	-0.101E+01	174	3	-0.130E+01	174	4	-0.133E+01	174	5	-0.170E+01
174	1	-0.247E+01	174	2	-0.145E+01	174	3	-0.172E+01						
175	1	-0.205E+01	175	2	-0.135E+01	175	3	-0.990E+00	175	4	-0.168E+01	175	5	-0.373E+01
175	1	-0.134E+01	175	2	-0.134E+01	175	3	-0.311E+01						
176	1	-0.164E+01	176	2	-0.130E+01	176	3	-0.370E+01	176	4	-0.105E+01	176	5	-0.254E+01
176	1	-0.138E+01	176	2	-0.173E+01	176	3	-0.259E+01						
177	1	-0.398E+01	177	2	-0.142E+01	177	3	-0.123E+01	177	4	-0.141E+01	177	5	-0.129E+01
177	1	-0.152E+01	177	2	-0.134E+01	177	3	-0.236E+01						
178	1	-0.125E+01	178	2	-0.265E+01	178	3	-0.189E+01	178	4	-0.136E+01	178	5	-0.201E+01
178	1	-0.136E+01	178	2	-0.245E+01	178	3	-0.172E+01						
179	1	-0.139E+01	179	2	-0.135E+01	179	3	-0.118E+01	179	4	-0.130E+01	179	5	-0.157E+01
179	1	-0.246E+01	179	2	-0.181E+01	179	3	-0.136E+01						
180	1	-0.301E+01	180	2	-0.130E+01	180	3	-0.117E+01	180	4	-0.105E+01	180	5	-0.132E+01
180	1	-0.138E+01	180	2	-0.195E+01	180	3	-0.349E+01						
181	1	-0.158E+01	181	2	-0.243E+01	181	3	-0.137E+01	181	4	-0.196E+01	181	5	-0.138E+01
181	1	-0.229E+01	181	2	-0.229E+01	181	3	-0.137E+01						
182	1	-0.177E+01	182	2	-0.101E+01	182	3	-0.175E+01	182	4	-0.180E+01	182	5	-0.170E+01
182	1	-0.184E+01	182	2	-0.137E+01	182	3	-0.172E+01						
183	1	-0.126E+01	183	2	-0.135E+01	183	3	-0.437E+01	183	4	-0.116E+01	183	5	-0.158E+01
183	1	-0.134E+01	183	2	-0.181E+01	183	3	-0.167E+01						
184	1	-0.164E+01	184	2	-0.130E+01	184	3	-0.131E+01	184	4	-0.154E+01	184	5	-0.170E+01
184	1	-0.425E+01	184	2	-0.237E+01	184	3	-0.129E+01						
185	1	-0.104E+01	185	2	-0.243E+01	185	3	-0.209E+01	185	4	-0.196E+01	185	5	-0.184E+01
185	1	-0.152E+01	185	2	-0.134E+01	185	3	-0.172E+01						
186	1	-0.196E+01	186	2	-0.157E+01	186	3	-0.137E+01	186	4	-0.133E+01	186	5	-0.141E+01
186	1	-0.136E+01	186	2	-0.184E+01	186	3	-0.197E+01						
187	1	-0.139E+01	187	2	-0.180E+01	187	3	-0.118E+01	187	4	-0.130E+01	187	5	-0.207E+01
187	1	-0.134E+01	187	2	-0.140E+01	187	3	-0.167E+01						
188	1	-0.142E+01	188	2	-0.134E+01	188	3	-0.165E+01	188	4	-0.250E+01	188	5	-0.188E+01
188	1	-0.172E+01	188	2	-0.137E+01	188	3	-0.129E+01						
189	1	-0.104E+01	189	2	-0.117E+01	189	3	-0.209E+01	189	4	-0.130E+01	189	5	-0.138E+01
189	1	-0.134E+01	189	2	-0.158E+01	189	3	-0.138E+01						
190	1	-0.117E+01	190	2	-0.101E+01	190	3	-0.137E+01	190	4	-0.136E+01	190	5	-0.201E+01
190	1	-0.136E+01	190	2	-0.137E+01	190	3	-0.197E+01						
191	1	-0.139E+01	191	2	-0.289E+01	191	3	-0.990E+00	191	4	-0.116E+01	191	5	-0.138E+01
191	1	-0.141E+01	191	2	-0.247E+01	191	3	-0.311E+01						
192	1	-0.128E+01	192	2	-0.459E+01	192	3	-0.131E+01	192	4	-0.105E+01	192	5	-0.132E+01
192	1	-0.197E+01	192	2	-0.173E+01	192	3	-0.129E+01						

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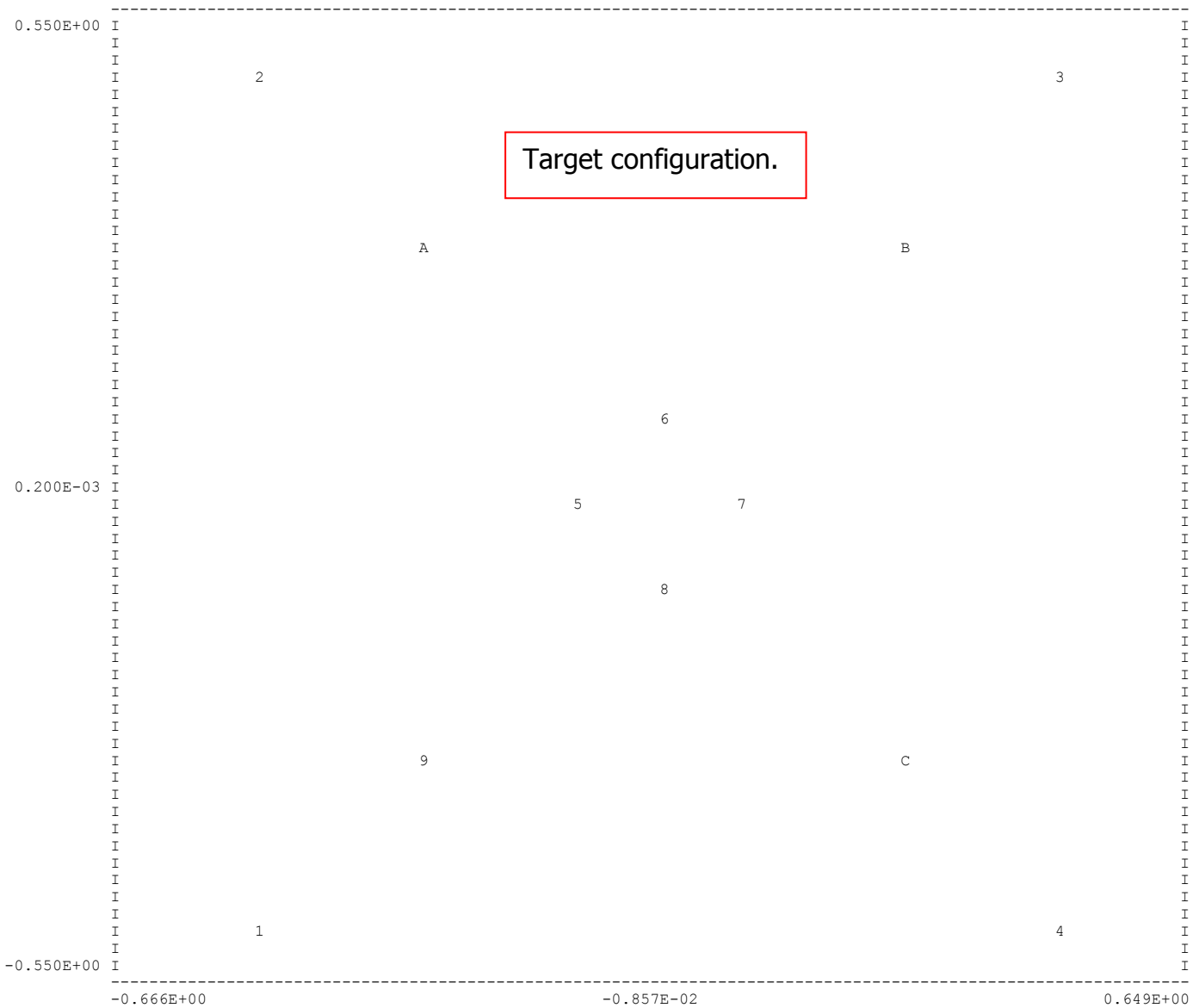
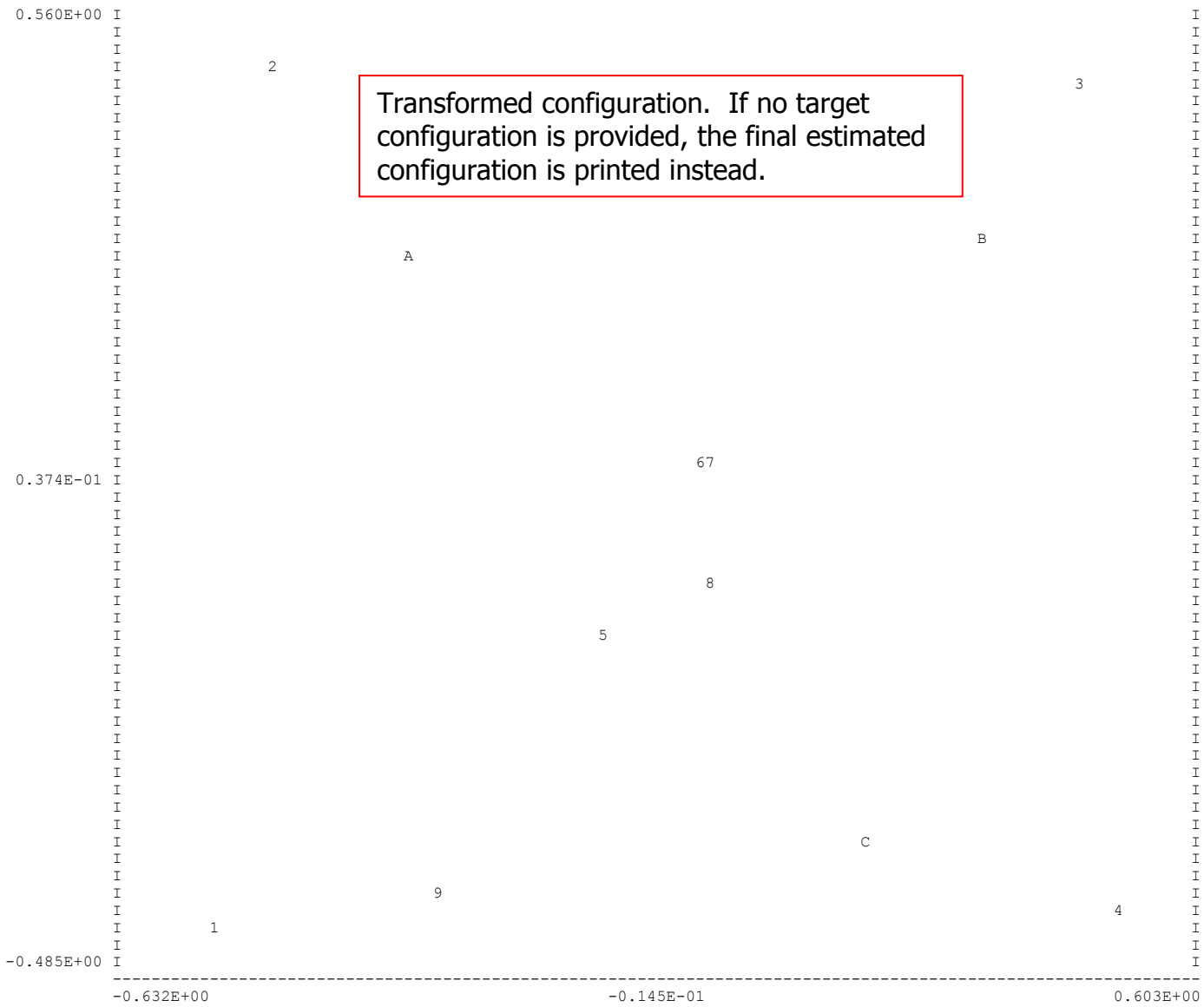
193   1  -0.158E+01 193   2  -0.151E+01 193   3  -0.123E+01 193   4  -0.168E+01 193   5  -0.138E+01
193   1  -0.157E+01 193   2  -0.152E+01 193   3  -0.138E+01
194   1  -0.196E+01 194   2  -0.157E+01 194   3  -0.284E+01 194   4  -0.133E+01 194   5  -0.141E+01
194   1  -0.184E+01 194   2  -0.145E+01 194   3  -0.144E+01
195   1  -0.139E+01 195   2  -0.135E+01 195   3  -0.160E+01 195   4  -0.203E+01 195   5  -0.138E+01
195   1  -0.134E+01 195   2  -0.140E+01 195   3  -0.142E+01
196   1  -0.142E+01 196   2  -0.130E+01 196   3  -0.165E+01 196   4  -0.250E+01 196   5  -0.254E+01
196   1  -0.236E+01 196   2  -0.137E+01 196   3  -0.142E+01
197   1  -0.158E+01 197   2  -0.117E+01 197   3  -0.344E+01 197   4  -0.196E+01 197   5  -0.129E+01
197   1  -0.157E+01 197   2  -0.152E+01 197   3  -0.138E+01
198   1  -0.507E+01 198   2  -0.122E+01 198   3  -0.137E+01 198   4  -0.133E+01 198   5  -0.201E+01
198   1  -0.145E+01 198   2  -0.177E+01 198   3  -0.144E+01
199   1  -0.139E+01 199   2  -0.180E+01 199   3  -0.990E+00 199   4  -0.130E+01 199   5  -0.138E+01
199   1  -0.134E+01 199   2  -0.134E+01 199   3  -0.206E+01
200   1  -0.128E+01 200   2  -0.130E+01 200   3  -0.131E+01 200   4  -0.154E+01 200   5  -0.188E+01
200   1  -0.321E+01 200   2  -0.237E+01 200   3  -0.188E+01
```

TARGET CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



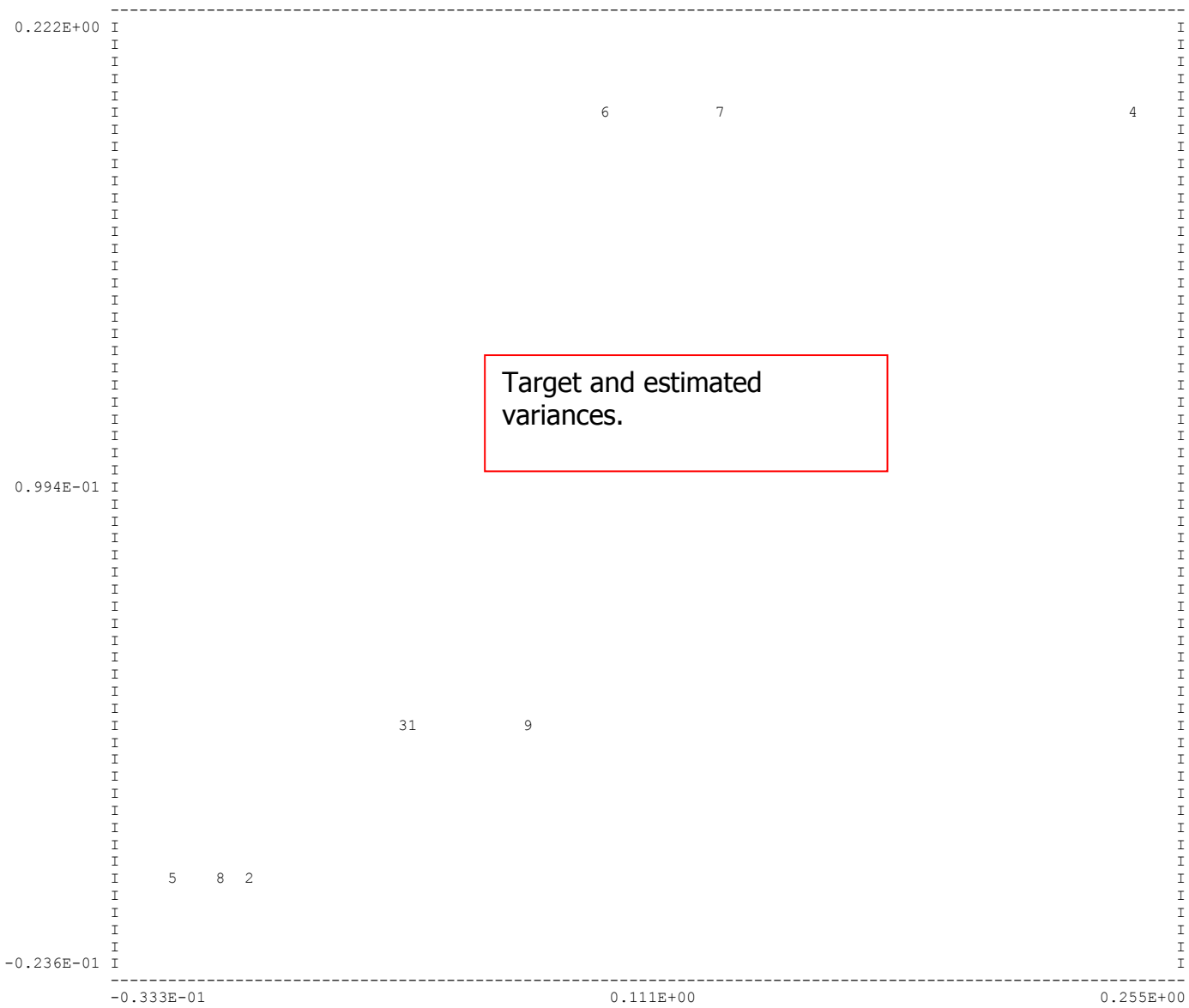
TRANSFORMED / ESTIMATED CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



Transformed configuration. If no target configuration is provided, the final estimated configuration is printed instead.

PRODUCT MOMENT CORRELATION OF TARGET AND FINAL TRANSFORMED STIMULUS VARIANCES = 0.8636

TARGET VARIANCES ON Y AXIS FINAL TRANSFORMED VARIANCES ON X AXIS



Target and estimated variances.

ESTIMATED TRUE AND EXPECTED DISTANCES

OBJECTS		TRUE	EXPECTED
2	1	0.366482E+01	0.384689E+01
3	1	0.531912E+01	0.543992E+01
3	2	0.362871E+01	0.380266E+01
4	1	0.405120E+01	0.420585E+01
4	2	0.521187E+01	0.533318E+01
4	3	0.355456E+01	0.374229E+01
5	1	0.215596E+01	0.296833E+01
5	2	0.285848E+01	0.348636E+01
5	3	0.320058E+01	0.377354E+01
5	4	0.255329E+01	0.319754E+01
6	1	0.295658E+01	0.356220E+01
6	2	0.254503E+01	0.321670E+01
6	3	0.236301E+01	0.312130E+01
6	4	0.267158E+01	0.331767E+01
6	5	0.867372E+00	0.288541E+01
7	1	0.296435E+01	0.356680E+01
7	2	0.257983E+01	0.324117E+01
7	3	0.235661E+01	0.311817E+01
7	4	0.263722E+01	0.329283E+01
7	5	0.864033E+00	0.288423E+01
7	6	0.349669E-01	0.277639E+01
8	1	0.264431E+01	0.330333E+01
8	2	0.295067E+01	0.353557E+01
8	3	0.275197E+01	0.342388E+01
8	4	0.228875E+01	0.303636E+01

"True" values refer to the distances between the means of the objects in the estimated (not transformed) configuration. "Expected" values are the corresponding expected distances. True and expected distances are calculated using the metric specified in the design.

```
   8   5    0.493075E+00    0.281024E+01
   8   6    0.546987E+00    0.281994E+01
   8   7    0.526079E+00    0.281672E+01
   9   1    0.102964E+01    0.205594E+01
   9   2    0.361608E+01    0.396328E+01
   9   3    0.453032E+01    0.479496E+01
   9   4    0.302821E+01    0.337175E+01
   9   5    0.133758E+01    0.278103E+01
   9   6    0.220251E+01    0.324310E+01
   9   7    0.220079E+01    0.324084E+01
   9   8    0.178172E+01    0.298734E+01
  10   1    0.300340E+01    0.342945E+01
  10   2    0.978222E+00    0.203804E+01
  10   3    0.312498E+01    0.346602E+01
  10   4    0.424909E+01    0.449857E+01
  10   5    0.188721E+01    0.304243E+01
  10   6    0.159947E+01    0.288824E+01
  10   7    0.163442E+01    0.290444E+01
  10   8    0.197605E+01    0.308111E+01
  10   9    0.276340E+01    0.342694E+01
  11   1    0.452885E+01    0.478062E+01
  11   2    0.326734E+01    0.357794E+01
  11   3    0.820919E+00    0.198353E+01
  11   4    0.292156E+01    0.335289E+01
  11   5    0.239293E+01    0.334824E+01
  11   6    0.157698E+01    0.287940E+01
  11   7    0.156653E+01    0.287487E+01
  11   8    0.193541E+01    0.307373E+01
  11   9    0.371631E+01    0.418695E+01
  11  10    0.259299E+01    0.320629E+01
  12   1    0.295856E+01    0.331768E+01
  12   2    0.422649E+01    0.449070E+01
  12   3    0.338446E+01    0.376281E+01
  12   4    0.115730E+01    0.211070E+01
  12   5    0.143833E+01    0.281641E+01
  12   6    0.177448E+01    0.298489E+01
  12   7    0.174426E+01    0.296946E+01
  12   8    0.128326E+01    0.275318E+01
  12   9    0.192904E+01    0.278934E+01
  12  10    0.324888E+01    0.376113E+01
  12  11    0.260584E+01    0.330924E+01

 ELAPSED MINUTES =         1
```

Example 2: Input

```
INITIAL DATA
TITLE
Project1
DATATP   6.0
NSTIM    15.0
NSUB     6.0
NSETS    240.0
NDIM     2.0
METRIC   1.0
TCOR     1.0
TSIG     1.0
TMES     2.0
INITIAL  2.0
ITMAX    40.0
SAMPLE   1.0
DISTRIB  3.0
NACT     42.0
NSIG     4.0
NOPT     0.0
STAND    2.0
FIXED    3.0
NMMP     0.0
NPROX    0.0
NFMAX    4000.0
NCHC     240.0
MIXTURE  2.0
DOOVER   2.0
SIMDIS   1.0
ALGOR    1.0
MODELA   2.0
MODELB   2.0
QPDF     2.0
NTRAC    -1.0
UMLMIN   0.00010
UINMIN   0.010
ENDIN


TARGET DATA
 0.01062 -0.24198
 0.43467  0.28774
 0.02554 -0.36983
 0.24483  0.31380
 0.38767  0.34014
 0.07310  0.38413
-0.02451  0.18505
 0.42736  0.28683
-0.23778 -0.49702
-0.12418  0.03891
 0.23483 -0.25482
-0.07884  0.17945
 0.23974  0.30526
-0.26715 -0.30169
-0.43934  0.23834
 0.49880 -0.10063
 0.39824 -0.27400
-0.03684  0.19372
 0.09605 -0.07214
 0.13243 -0.02915
-0.05356 -0.29178
0.01
0.01
0.03
0.03
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2
 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
 31 32 33 34 35 36 37 38 39 40 41 42


DISTANCE DATA
   0
   0  0
   1  0  0
   1  1  1  1
   0  0  1  0  1
   0  0  1  0  0  1
   1  1  1  0  1  1  0
   0  0  0  0  0  0  0  0
   1  0  0  0  0  0  1  0  1
   1  0  1  1  1  1  1  1  1  1
   0  0  0  0  0  0  1  0  1  0  0
```

```
1  0  0  0  0  1  1  0  1  1  0  1
0  0  1  0  0  0  0  0  1  0  0  0  0
0  0  0  0  0  0  0  0  0  0  0  0  0  0
0
1  0
0  0  0
0  0  0  0
0  0  0  0  0
0  0  0  0  1  1
0  0  0  0  1  1  1
0  0  0  1  0  0  1  0
0  0  0  1  1  1  1  0  1
0  1  1  1  1  1  1  1  1  1
0  0  0  0  0  1  0  0  1  1  0
0  0  0  0  1  1  1  0  1  0  0  1
0  0  0  1  1  1  0  0  1  0  0  1  0
0  0  0  0  0  1  0  0  0  0  0  0  0  0
0
0  0
0  1  1
0  0  0  0
1  1  1  1  1
1  1  1  1  1  1
1  1  1  0  0  0  0
0  0  1  0  0  0  0  1
1  1  1  1  0  0  0  1  1
0  0  0  0  0  0  0  1  1  0
1  1  1  1  1  0  0  1  1  1  1
1  1  1  0  1  1  0  1  1  1  1  0
1  0  0  0  1  0  0  0  1  0  0  0  0
0  1  0  0  0  0  0  0  1  0  0  0  0  0
```

---- 236 data sets deleted ----------

```
0
1  1
0  0  0
0  1  0  0
0  0  0  1  1
0  1  0  0  1  1
0  1  0  1  0  0  0
1  1  0  1  1  0  1  1
1  1  0  1  1  1  0  1  0
1  1  0  1  1  1  1  1  1  0
0  1  0  0  1  0  0  1  0  0  0
0  1  0  0  1  1  0  0  0  0  1  0
1  1  1  1  1  1  0  1  0  0  1  1  1
                                    0  1  0  0  1  1  0  0  0  0  0  1  0  0
```

Example 2: Output

PROSCAL

Project1

DATE 2006:05:03
TIME 12:05:15.926

NUMBER OF STIMULI	15		
NUMBER OF ACTIVE COORD.	42	UMLMIN	0.00010
NUMBER OF DIMENSIONS	2	UINMIN	0.01000
NUMBER OF VARIANCES	4	ZMIN	0.00000
NUMBER OF IDEAL OBJECTS	240	NFMAX	4000
NUMBER OF DATA SETS	4	NTRAC	-1
NUMBER OF CHOICE SETS	240		
NUMBER OF ML ITERATIONS	40		
TRANSFORMATION INDEX	0		
OPTIMIZATION LEVEL	0		
TARGET COORD. OPTION	TARG		
TARGET VARIANCE OPT.	TARG		
TARGET MEAS PARAM OPT.	TRNO		
STANDARDIZATION OPT.	STNO		
INITIALIZATION OPTION	COMP		
DATA TYPE OPTION	BINR		
DISTRIBUTION OPTION	CVNO		
FIXED POINT OPTION	FXNO		
SAMPLING	INDP		
METRIC OPTION	ECLD		
MIXTURE OPTION	NOEM		
REANALYSIS OPTION	NORD		
PROXIMITIES OPTION	NOSI		

TARGET CONFIGURATION

0.011	-0.242
0.435	0.288
0.026	-0.370
0.245	0.314
0.388	0.340
0.073	0.384
-0.025	0.185
0.427	0.287
-0.238	-0.497
-0.124	0.039
0.235	-0.255
-0.079	0.179
0.240	0.305
-0.267	-0.302
-0.439	0.238
0.499	-0.101
0.398	-0.274
-0.037	0.194
0.096	-0.072
0.132	-0.029
-0.054	-0.292

TARGET VARIANCES

0.010
0.010
0.030
0.030

VARIANCE SET MEMBERSHIP

OBJECTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
SET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2

SUBJECT SET MEMBERSHIP

SUBJECT	SET
1	1
2	2
3	3
4	4
5	5
6	6
7	1

```
 8       2
 9       3
10       4
11       5
12       6
13       1
14       2
15       3
16       4
17       5
18       6
19       1
20       2
21       3
22       4
23       5
24       6
25       1
26       2
27       3
28       4
29       5
30       6
31       1
32       2
33       3
34       4
35       5
36       6
37       1
38       2
39       3
40       4
41       5
42       6
43       1
44       2
45       3
46       4
47       5
48       6
49       1
50       2
51       3
52       4
53       5
54       6
55       1
56       2
57       3
58       4
59       5
60       6
61       1
62       2
63       3
64       4
65       5
66       6
67       1
68       2
69       3
70       4
71       5
72       6
73       1
74       2
75       3
76       4
77       5
78       6
79       1
80       2
81       3
82       4
83       5
84       6
85       1
86       2
87       3
88       4
89       5
90       6
91       1
92       2
93       3
94       4
95       5
96       6
97       1
98       2
99       3
```

100	4
101	5
102	6
103	1
104	2
105	3
106	4
107	5
108	6
109	1
110	2
111	3
112	4
113	5
114	6
115	1
116	2
117	3
118	4
119	5
120	6
121	1
122	2
123	3
124	4
125	5
126	6
127	1
128	2
129	3
130	4
131	5
132	6
133	1
134	2
135	3
136	4
137	5
138	6
139	1
140	2
141	3
142	4
143	5
144	6
145	1
146	2
147	3
148	4
149	5
150	6
151	1
152	2
153	3
154	4
155	5
156	6
157	1
158	2
159	3
160	4
161	5
162	6
163	1
164	2
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166	4
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168	6
169	1
170	2
171	3
172	4
173	5
174	6
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176	2
177	3
178	4
179	5
180	6
181	1
182	2
183	3
184	4
185	5
186	6
187	1
188	2
189	3
190	4
191	5

192	6
193	1
194	2
195	3
196	4
197	5
198	6
199	1
200	2
201	3
202	4
203	5
204	6
205	1
206	2
207	3
208	4
209	5
210	6
211	1
212	2
213	3
214	4
215	5
216	6
217	1
218	2
219	3
220	4
221	5
222	6
223	1
224	2
225	3
226	4
227	5
228	6
229	1
230	2
231	3
232	4
233	5
234	6
235	1
236	2
237	3
238	4
239	5
240	6

SUMMARY FREQUENCY MATRICES

27.0													
14.0	7.0												
27.0	14.0	21.0											
24.0	12.0	26.0	26.0										
14.0	3.0	17.0	11.0	8.0									
12.0	5.0	22.0	16.0	12.0	23.0								
31.0	24.0	32.0	26.0	22.0	36.0	36.0							
1.0	1.0	6.0	2.0	1.0	10.0	5.0	0.0						
12.0	2.0	9.0	8.0	6.0	16.0	13.0	4.0	32.0					
33.0	26.0	34.0	34.0	31.0	40.0	34.0	36.0	40.0	36.0				
16.0	2.0	17.0	9.0	8.0	19.0	21.0	4.0	36.0	20.0	3.0			
23.0	17.0	23.0	20.0	14.0	33.0	17.0	11.0	38.0	31.0	8.0	32.0		
3.0	0.0	6.0	3.0	2.0	12.0	6.0	3.0	28.0	10.0	0.0	10.0	4.0	
0.0	0.0	1.0	1.0	0.0	3.0	1.0	0.0	10.0	0.0	0.0	1.0	0.0	6.0
11.0													
20.0	30.0												
10.0	14.0	8.0											
4.0	18.0	6.0	17.0										
2.0	7.0	3.0	6.0	12.0									
8.0	15.0	4.0	23.0	24.0	26.0								
6.0	19.0	7.0	23.0	27.0	33.0	27.0							
3.0	13.0	4.0	12.0	14.0	23.0	12.0	12.0						
3.0	22.0	6.0	23.0	21.0	30.0	23.0	14.0	23.0					
33.0	38.0	30.0	40.0	40.0	40.0	40.0	38.0	39.0	37.0				
6.0	18.0	6.0	17.0	16.0	33.0	15.0	11.0	28.0	17.0	0.0			
5.0	14.0	6.0	20.0	28.0	28.0	24.0	17.0	28.0	18.0	0.0	24.0		
4.0	9.0	3.0	20.0	12.0	24.0	14.0	12.0	17.0	17.0	0.0	18.0	14.0	
0.0	0.0	0.0	0.0	5.0	4.0	1.0	0.0	1.0	1.0	0.0	5.0	1.0	1.0
18.0													
11.0	12.0												
25.0	30.0	35.0											
16.0	21.0	28.0	11.0										
31.0	39.0	37.0	29.0	35.0									
39.0	39.0	40.0	37.0	40.0	24.0								
21.0	17.0	24.0	7.0	17.0	5.0	1.0							
4.0	2.0	11.0	0.0	2.0	0.0	0.0	7.0						
36.0	34.0	38.0	26.0	34.0	20.0	9.0	38.0	40.0					
11.0	13.0	19.0	4.0	14.0	2.0	0.0	16.0	34.0	5.0				
38.0	39.0	40.0	33.0	40.0	27.0	15.0	40.0	40.0	24.0	40.0			

```
  27.0   34.0   40.0   18.0   29.0   12.0    4.0   34.0   40.0   13.0   35.0   10.0
  17.0   20.0   19.0    4.0   14.0    2.0    0.0    9.0   26.0    1.0   19.0    1.0    6.0
  25.0   30.0   31.0   14.0   19.0    8.0    2.0   23.0   37.0    6.0   31.0    4.0   10.0   31.0
   6.0
  19.0   30.0
   8.0   29.0   19.0
   7.0   19.0   12.0   18.0
   7.0   23.0   15.0   15.0   25.0
  15.0   32.0   18.0   28.0   30.0   27.0
   9.0   15.0   14.0    9.0   22.0   16.0   13.0
   5.0   20.0    7.0   16.0   20.0   15.0    9.0   21.0
  23.0   36.0   21.0   23.0   33.0   30.0   22.0   31.0   32.0
  18.0   30.0   28.0   24.0   31.0   33.0   22.0   33.0   37.0   22.0
  14.0   33.0   15.0   25.0   25.0   24.0   21.0   35.0   30.0   19.0   15.0
  14.0   24.0   16.0   22.0   27.0   22.0   11.0   27.0   23.0   17.0   13.0   18.0
   9.0   26.0   11.0   18.0   25.0   20.0   10.0   20.0   22.0    7.0   10.0   15.0   14.0
   2.0   11.0    7.0   10.0   20.0   13.0    9.0   15.0   15.0    6.0    2.0    6.0   13.0   11.0
  11.0
  18.0   30.0
  15.0   24.0   17.0
   9.0   18.0   13.0   14.0
   9.0   12.0   15.0   21.0   23.0
  18.0   30.0   30.0   20.0   28.0   26.0
  13.0   21.0   14.0   15.0   17.0   16.0   10.0
   8.0   17.0   10.0   11.0   16.0    8.0    4.0   10.0
  15.0   26.0   22.0   22.0   29.0   30.0   22.0   32.0   36.0
  16.0   30.0   28.0   20.0   30.0   25.0   25.0   27.0   36.0   17.0
  18.0   33.0   25.0   24.0   28.0   35.0   21.0   24.0   30.0   14.0   21.0
  17.0   25.0   24.0   17.0   25.0   21.0   15.0   26.0   35.0   16.0   14.0   21.0
  20.0   18.0   12.0   12.0   18.0   14.0   10.0   21.0   27.0    8.0    9.0    8.0   19.0
   7.0    6.0    1.0    5.0    8.0    8.0    2.0    7.0   12.0    5.0    3.0    4.0    9.0    9.0
   0.0
  19.0   40.0
   1.0   23.0    0.0
   0.0   19.0    1.0   12.0
   2.0   23.0    0.0   16.0   27.0
   3.0   28.0    2.0   26.0   37.0   32.0
   0.0   23.0    1.0   18.0   17.0   13.0    7.0
  10.0   36.0   16.0   37.0   37.0   36.0   28.0   38.0
   8.0   38.0   14.0   33.0   36.0   32.0   27.0   37.0   20.0
  16.0   40.0   18.0   35.0   40.0   36.0   26.0   39.0   22.0   24.0
   1.0   36.0   11.0   33.0   35.0   31.0   22.0   33.0   10.0    9.0   10.0
   1.0   29.0    4.0   12.0   27.0   18.0   11.0   22.0    3.0    6.0    7.0   12.0
  12.0   37.0   17.0   39.0   40.0   39.0   31.0   39.0   22.0   24.0   23.0   29.0   38.0
   2.0   24.0    4.0   21.0   28.0   28.0    5.0   27.0    5.0    0.0    4.0   15.0   20.0    1.0


SAMPLE SIZES FOR SUMMARY FREQUENCY MATRICES

  40.0
  40.0   40.0
  40.0   40.0   40.0
  40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
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  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
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  40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
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  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0   40.0
  40.0
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  40.0  40.0
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  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0
  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0
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  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0
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  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0
  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0
  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0
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  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0  40.0


ISCALE FOR IDEAL OBJECT   1

   0.965   0.332   1.196   0.889   0.670   1.619   1.258   0.428   2.509   1.614
   0.010   1.498   0.885   2.217   3.055


ISCALE FOR IDEAL OBJECT   2

   0.843   1.576   0.852   1.794   1.981   2.454   1.863   1.571   2.158   1.786
   0.010   1.992   1.806   2.147   3.547


ISCALE FOR IDEAL OBJECT   3

   1.779   1.974   2.388   1.153   1.853   0.646   0.010   2.014   3.023   0.671
   2.270   0.192   1.035   2.325   1.598


ISCALE FOR IDEAL OBJECT   4

   0.010   1.012   0.321   0.584   0.989   0.785   0.288   1.008   1.040   0.143
   0.037   0.346   0.590   0.822   1.317


ISCALE FOR IDEAL OBJECT   5

   0.068   0.626   0.243   0.289   0.663   0.562   0.039   0.627   1.099   0.010
   0.033   0.068   0.318   0.693   1.471


ISCALE FOR IDEAL OBJECT   6

   0.010   2.273   0.233   1.953   2.378   2.016   1.286   2.272   0.676   0.730
   0.525   1.272   1.915   0.364   1.937


INITIAL CONFIGURATION

        -1.131         0.433
        -0.984        -1.585
        -1.971         0.958
         0.299        -1.213
        -0.320        -1.667
         1.731        -0.834
         0.960        -0.377
        -1.035        -1.537
        -1.390         2.790
         0.852         0.380
        -2.194         0.368
```

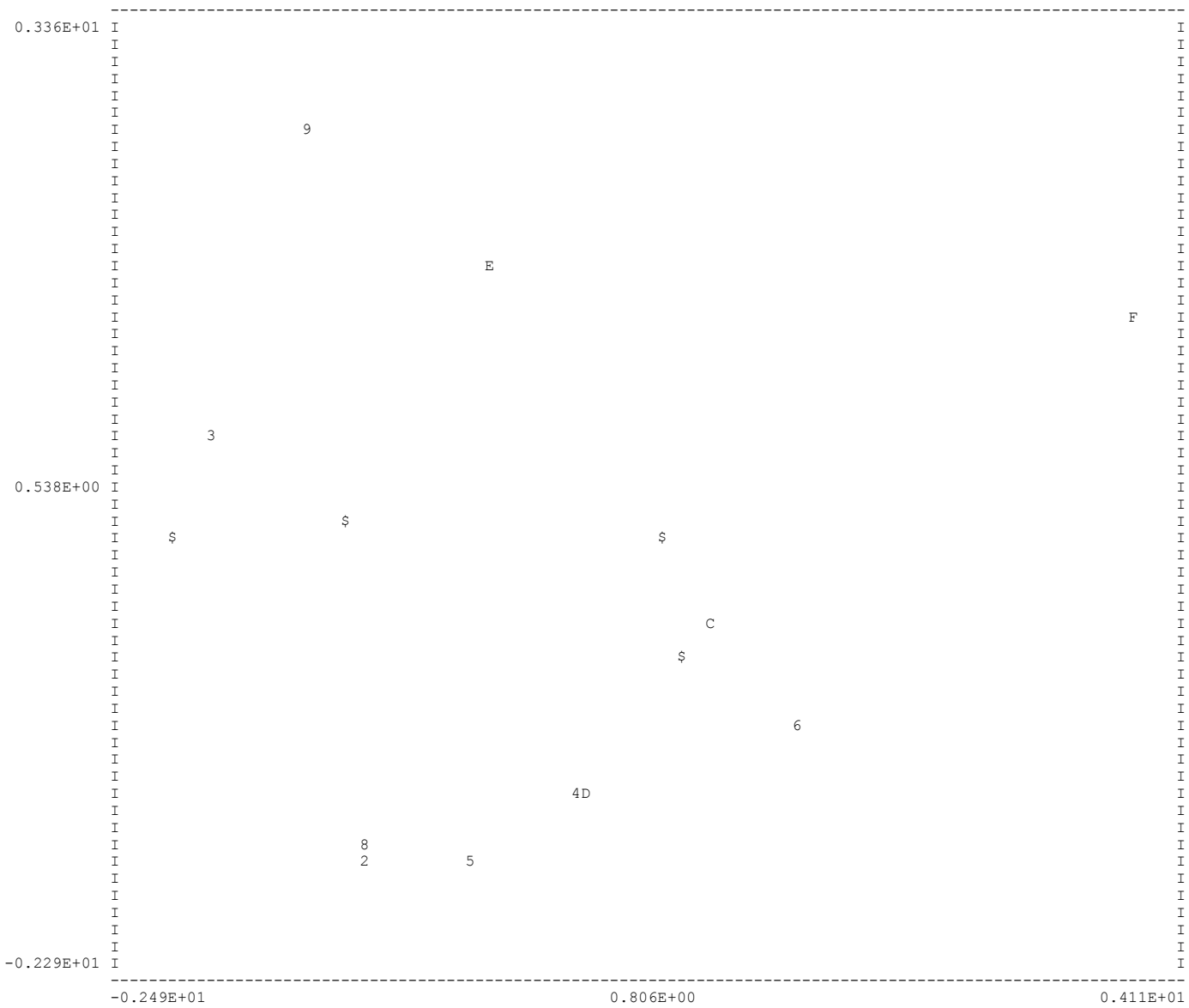
1.195	-0.153
0.400	-1.203
-0.216	1.981
3.803	1.660
-2.194	0.368
-2.194	0.368
0.960	-0.377
-1.131	0.433
0.852	0.380
-1.131	0.433

INITIAL STANDARD DEVIATIONS - ALL OBJECTS

0.010
0.010
0.010
0.010
0.010
4.133
0.010
0.010
5.905
0.010
0.010
0.010
0.010
0.010
22.918
8.366
10.265
0.010
3.527
3.593
0.010

MEAN OF STANDARD DEVIATIONS 2.802

INITIAL CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



INITIAL VARIANCES - ACTIVE VARIABLES

```
       8.255
       8.255
       5.649
       5.649
```

INITIAL MEASUREMENT CONSTANTS 0.0000 1.0000 1.0000

TRANSFORMED CONFIGURATION

```
       0.074       -0.173
       0.332        0.123
       0.116       -0.361
       0.106        0.249
       0.253        0.226
      -0.143        0.395
      -0.100        0.226
       0.333        0.110
      -0.216       -0.531
      -0.190        0.108
       0.228       -0.311
      -0.163        0.228
       0.090        0.262
      -0.265       -0.258
      -0.770        0.340
       0.228       -0.311
```

```
        0.228        -0.311
       -0.100         0.226
        0.074        -0.173
       -0.190         0.108
        0.074        -0.173

CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.7930     SUM OF DISTANCE DIFFERENCES =   0.288203E+01

TRANSFORMED VARIANCES AND COVARIANCES

        0.311
        0.000         0.311
        0.213
        0.000         0.213

INITIAL LOG LIKELIHOOD VALUE                 -0.16709427E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -1.131  -0.984  -1.971   0.299  -0.320   1.731   0.960  -1.035  -1.390   0.852
 -2.194   1.195   0.400  -0.216   3.803  -2.194  -2.194   0.960  -1.131   0.852
 -1.131   0.433  -1.585   0.958  -1.213  -1.667  -0.834  -0.377  -1.537   2.790
  0.380   0.368  -0.153  -1.203   1.981   1.660   0.368   0.368  -0.377   0.433
  0.380   0.433   8.255   8.255   5.649   5.649

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.149051E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -1.131  -0.984  -1.971   0.299  -0.320   1.731   0.960  -1.035  -1.390   0.852
 -2.194   1.195   0.400  -0.216   3.803  -2.194  -2.194   0.960  -1.131   0.852
 -1.131   0.433  -1.585   0.958  -1.213  -1.667  -0.834  -0.377  -1.537   2.790
  0.380   0.368  -0.153  -1.203   1.981   1.660   0.368   0.368  -0.377   0.433
  0.380   0.433   1.177   0.005   2.826   0.000

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.126865E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -1.045  -1.712  -1.334  -0.305  -1.106   0.996   0.905  -1.702   0.584   1.134
 -2.391   1.069  -0.257   0.805   4.343  -4.152  -3.357   1.818  -0.555  -0.604
 -0.585   1.904  -2.656   2.581  -2.196  -2.814  -2.273  -1.044  -2.656   3.973
  0.897   0.835  -1.024  -2.198   3.358   1.654  -0.866   0.837  -0.668   0.553
  0.275   2.015   1.177   0.005   2.826   0.000

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.126489E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -1.045  -1.712  -1.334  -0.305  -1.106   0.996   0.905  -1.702   0.584   1.134
 -2.391   1.069  -0.257   0.805   4.343  -4.152  -3.357   1.818  -0.555  -0.604
 -0.585   1.904  -2.656   2.581  -2.196  -2.814  -2.273  -1.044  -2.656   3.973
  0.897   0.835  -1.024  -2.198   3.358   1.654  -0.866   0.837  -0.668   0.553
  0.275   2.015   0.928   0.197   2.206   0.500

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.126124E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -0.793  -1.648  -1.241  -0.260  -1.045   1.197   0.928  -1.647   0.462   1.227
 -2.394   1.194  -0.199   0.863   4.201  -3.733  -3.244   1.368  -0.650  -0.764
 -0.573   2.065  -2.785   2.725  -2.277  -2.983  -2.196  -0.938  -2.797   4.128
  0.904   1.217  -0.834  -2.260   3.358   0.972  -0.703   0.814  -0.597   0.559
  0.259   2.156   0.928   0.197   2.206   0.500

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.125929E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -0.793  -1.648  -1.241  -0.260  -1.045   1.197   0.928  -1.647   0.462   1.227
 -2.394   1.194  -0.199   0.863   4.201  -3.733  -3.244   1.368  -0.650  -0.764
 -0.573   2.065  -2.785   2.725  -2.277  -2.983  -2.196  -0.938  -2.797   4.128
  0.904   1.217  -0.834  -2.260   3.358   0.972  -0.703   0.814  -0.597   0.559
  0.259   2.156   0.761   0.328   1.790   0.845

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.125797E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -0.747  -1.649  -1.238  -0.260  -1.066   1.182   0.916  -1.649   0.224   1.194
 -2.350   1.207  -0.203   0.806   4.048  -3.552  -3.177   1.291  -0.667  -0.775
```

```
 -0.553   2.088  -2.821   2.757  -2.292  -3.042  -2.170  -0.861  -2.836   4.269
  0.874   1.288  -0.703  -2.271   3.388   0.911  -0.664   0.790  -0.611   0.585
  0.259   2.233   0.761   0.328   1.790   0.845

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.125717E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -0.747  -1.649  -1.238  -0.260  -1.066   1.182   0.916  -1.649   0.224   1.194
 -2.350   1.207  -0.203   0.806   4.048  -3.552  -3.177   1.291  -0.667  -0.775
 -0.553   2.088  -2.821   2.757  -2.292  -3.042  -2.170  -0.861  -2.836   4.269
  0.874   1.288  -0.703  -2.271   3.388   0.911  -0.664   0.790  -0.611   0.585
  0.259   2.233   0.659   0.409   1.508   1.051

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.125663E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -0.708  -1.671  -1.235  -0.264  -1.098   1.160   0.928  -1.674   0.100   1.184
 -2.305   1.230  -0.203   0.773   3.957  -3.402  -3.099   1.264  -0.660  -0.760
 -0.535   2.109  -2.829   2.788  -2.305  -3.066  -2.170  -0.811  -2.848   4.360
  0.876   1.332  -0.610  -2.280   3.427   0.920  -0.614   0.782  -0.627   0.608
  0.265   2.288   0.659   0.409   1.508   1.051

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.125629E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -0.708  -1.671  -1.235  -0.264  -1.098   1.160   0.928  -1.674   0.100   1.184
 -2.305   1.230  -0.203   0.773   3.957  -3.402  -3.099   1.264  -0.660  -0.760
 -0.535   2.109  -2.829   2.788  -2.305  -3.066  -2.170  -0.811  -2.848   4.360
  0.876   1.332  -0.610  -2.280   3.427   0.920  -0.614   0.782  -0.627   0.608
  0.265   2.288   0.599   0.455   1.322   1.181

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.125610E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -0.689  -1.678  -1.228  -0.268  -1.110   1.147   0.931  -1.682   0.053   1.174
 -2.279   1.233  -0.206   0.767   3.890  -3.357  -3.087   1.233  -0.660  -0.757
 -0.527   2.123  -2.843   2.808  -2.322  -3.088  -2.173  -0.784  -2.861   4.400
  0.876   1.361  -0.565  -2.292   3.442   0.923  -0.595   0.782  -0.633   0.616
  0.265   2.316   0.599   0.455   1.322   1.181

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.125597E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -0.689  -1.678  -1.228  -0.268  -1.110   1.147   0.931  -1.682   0.053   1.174
 -2.279   1.233  -0.206   0.767   3.890  -3.357  -3.087   1.233  -0.660  -0.757
 -0.527   2.123  -2.843   2.808  -2.322  -3.088  -2.173  -0.784  -2.861   4.400
  0.876   1.361  -0.565  -2.292   3.442   0.923  -0.595   0.782  -0.633   0.616
  0.265   2.316   0.560   0.478   1.210   1.258

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.125589E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -0.670  -1.671  -1.215  -0.260  -1.106   1.142   0.935  -1.673   0.032   1.170
 -2.250   1.241  -0.196   0.763   3.849  -3.320  -3.069   1.225  -0.650  -0.745
 -0.521   2.127  -2.847   2.811  -2.325  -3.096  -2.177  -0.769  -2.864   4.415
  0.884   1.372  -0.533  -2.297   3.442   0.933  -0.586   0.779  -0.637   0.619
  0.265   2.331   0.560   0.478   1.210   1.258

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.125584E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -0.670  -1.671  -1.215  -0.260  -1.106   1.142   0.935  -1.673   0.032   1.170
 -2.250   1.241  -0.196   0.763   3.849  -3.320  -3.069   1.225  -0.650  -0.745
 -0.521   2.127  -2.847   2.811  -2.325  -3.096  -2.177  -0.769  -2.864   4.415
  0.884   1.372  -0.533  -2.297   3.442   0.933  -0.586   0.779  -0.637   0.619
  0.265   2.331   0.540   0.490   1.140   1.301

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.125581E+05


ESTIMATE VALUES ENTERING LAST PHASE

 -0.657  -1.671  -1.207  -0.260  -1.110   1.142   0.941  -1.677   0.023   1.175
 -2.238   1.248  -0.196   0.763   3.830  -3.299  -3.056   1.212  -0.650  -0.742
 -0.514   2.136  -2.854   2.824  -2.336  -3.106  -2.177  -0.763  -2.871   4.428
  0.884   1.393  -0.523  -2.307   3.449   0.927  -0.574   0.779  -0.637   0.619
  0.265   2.337   0.540   0.490   1.140   1.301
```

FINAL LOG LIKELIHOOD VALUE -0.125574E+05

NUMBER OF FREE PARAMETERS 43
NUMBER OF JUDGMENTS 630
CAIC 0.254349E+05
BIC 0.253919E+05

FUNCTION EVALUATIONS = 4006 CONSTRAINT EVALUATIONS = 0

FINAL CONFIGURATION

-0.630	2.145
-1.661	-2.861
-1.185	2.832
-0.255	-2.344
-1.102	-3.113
1.132	-2.177
0.941	-0.760
-1.665	-2.879
0.014	4.425
1.171	0.884
-2.212	1.435
1.248	-0.505
-0.193	-2.314
0.763	3.438
3.777	0.878
-3.267	-0.555
-3.038	0.770
1.170	-0.637
-0.650	0.619
-0.742	0.265
-0.502	2.333

FINAL VARIANCES

0.496
0.501
1.038
1.350

TRANSFORMED CONFIGURATION

-0.100	-0.267
0.357	0.266
-0.079	-0.387
0.153	0.298
0.306	0.334
-0.025	0.370
-0.096	0.187
0.358	0.268
-0.330	-0.499
-0.233	0.004
0.137	-0.287
-0.150	0.176
0.144	0.298
-0.354	-0.330
-0.546	0.178
0.397	-0.118
0.281	-0.262
-0.132	0.187
0.004	-0.085
0.038	-0.049
-0.128	-0.282

CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.9958 SUM OF DISTANCE DIFFERENCES = 0.366523E+00

TRANSFORMED VARIANCES AND COVARIANCES

0.009	
0.000	0.009
0.021	
0.002	0.024

ADJUSTED FINAL VARIANCES AND COVARIANCES

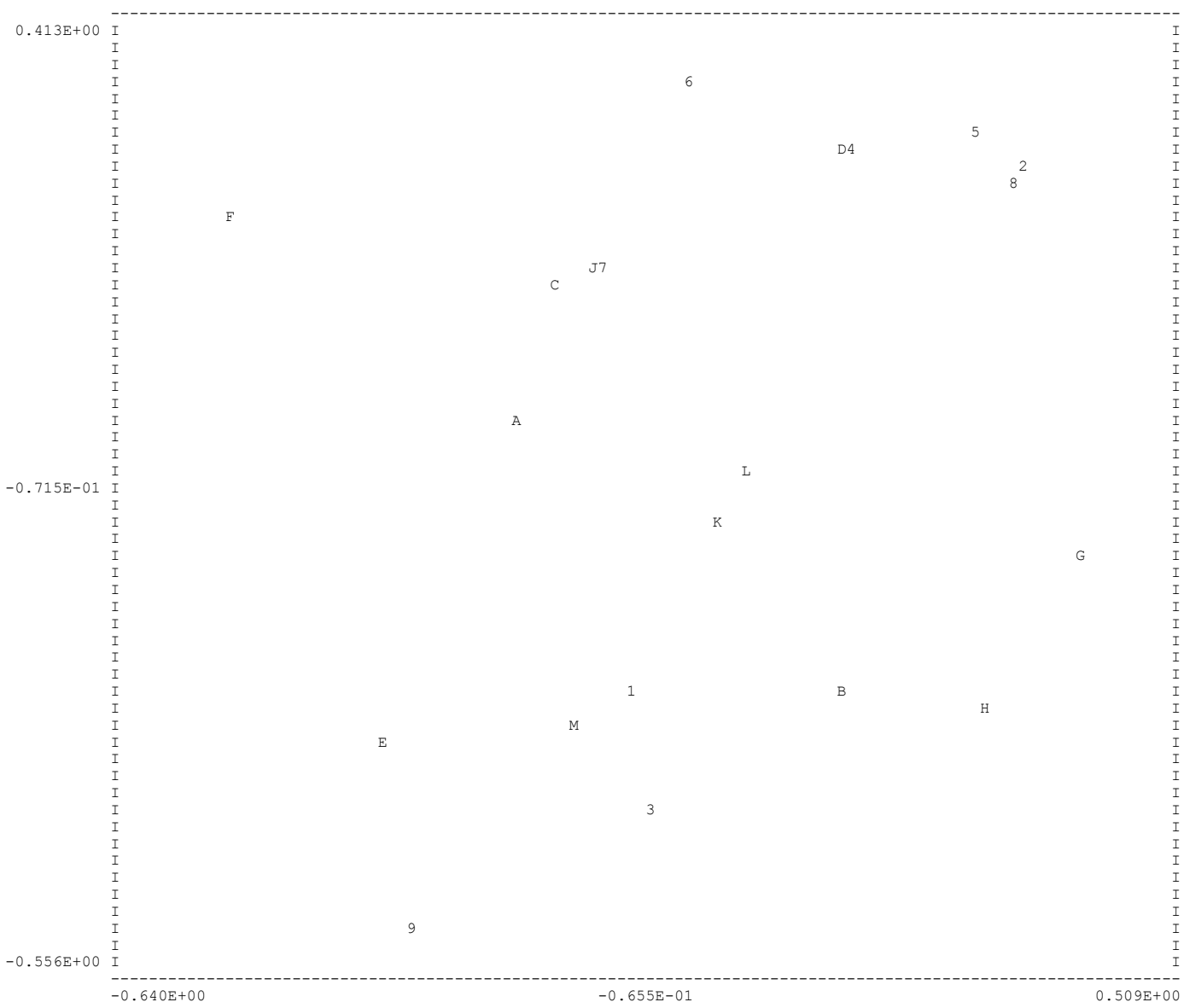
0.496	
0.000	0.501
1.038	
0.000	1.350

CONTRIBUTIONS TO FINAL LOG LIKELIHOOD FUNCTION (SUBJECT, OBJECT, OBJECT, LIKELIHOOD)

1 2 1 -0.256E+02 1 3 1 -0.267E+02 1 3 2 -0.188E+02 1 4 1 -0.261E+02 1 4 2 -0.259E+02

1	4	3	-0.285E+02	1	5	1	-0.269E+02	1	5	2	-0.248E+02	1	5	3	-0.259E+02	1	5	4	-0.269E+02
1	6	1	-0.265E+02	1	6	2	-0.108E+02	1	6	3	-0.283E+02	1	6	4	-0.240E+02	1	6	5	-0.201E+02
1	7	1	-0.251E+02	1	7	2	-0.154E+02	1	7	3	-0.286E+02	1	7	4	-0.275E+02	1	7	5	-0.245E+02
1	7	6	-0.275E+02	1	8	1	-0.215E+02	1	8	2	-0.278E+02	1	8	3	-0.201E+02	1	8	4	-0.259E+02
1	8	5	-0.281E+02	1	8	6	-0.130E+02	1	8	7	-0.139E+02	1	9	1	-0.533E+01	1	9	2	-0.486E+01
1	9	3	-0.178E+02	1	9	4	-0.796E+01	1	9	5	-0.473E+01	1	9	6	-0.229E+02	1	9	7	-0.151E+02
1	9	8	-0.524E+00	1	10	1	-0.245E+02	1	10	2	-0.869E+01	1	10	3	-0.222E+02	1	10	4	-0.200E+02
1	10	5	-0.171E+02	1	10	6	-0.278E+02	1	10	7	-0.255E+02	1	10	8	-0.130E+02	1	10	9	-0.200E+02
1	11	1	-0.186E+02	1	11	2	-0.259E+02	1	11	3	-0.170E+02	1	11	4	-0.174E+02	1	11	5	-0.214E+02
1	11	6	-0.193E+01	1	11	7	-0.175E+02	1	11	8	-0.203E+02	1	11	9	-0.152E+00	1	11	10	-0.139E+02
1	12	1	-0.277E+02	1	12	2	-0.922E+01	1	12	3	-0.277E+02	1	12	4	-0.214E+02	1	12	5	-0.200E+02
1	12	6	-0.281E+02	1	12	7	-0.286E+02	1	12	8	-0.131E+02	1	12	9	-0.136E+02	1	12	10	-0.279E+02
1	12	11	-0.107E+02	1	13	1	-0.273E+02	1	13	2	-0.283E+02	1	13	3	-0.274E+02	1	13	4	-0.277E+02
1	13	5	-0.267E+02	1	13	6	-0.188E+02	1	13	7	-0.325E+02	1	13	8	-0.237E+02	1	13	9	-0.795E+01
1	13	10	-0.213E+02	1	13	11	-0.200E+02	1	13	12	-0.204E+02	1	14	1	-0.108E+02	1	14	2	-0.893E+00
1	14	3	-0.171E+02	1	14	4	-0.107E+02	1	14	5	-0.794E+01	1	14	6	-0.247E+02	1	14	7	-0.169E+02
1	14	8	-0.122E+02	1	14	9	-0.257E+02	1	14	10	-0.225E+02	1	14	11	-0.295E+00	1	14	12	-0.226E+02
1	14	13	-0.133E+02	1	15	1	-0.293E+00	1	15	2	-0.266E-01	1	15	3	-0.494E+01	1	15	4	-0.569E+01
1	15	5	-0.111E+00	1	15	6	-0.112E+02	1	15	7	-0.474E+01	1	15	8	-0.275E-01	1	15	9	-0.228E+02
1	15	10	-0.154E+01	1	15	11	-0.480E-02	1	15	12	-0.469E+01	1	15	13	-0.174E+00	1	15	14	-0.169E+02
2	2	1	-0.237E+02	2	3	1	-0.277E+02	2	3	2	-0.225E+02	2	4	1	-0.232E+02	2	4	2	-0.263E+02
2	4	3	-0.201E+02	2	5	1	-0.134E+02	2	5	2	-0.279E+02	2	5	3	-0.169E+02	2	5	4	-0.274E+02
2	6	1	-0.795E+01	2	6	2	-0.186E+02	2	6	3	-0.108E+02	2	6	4	-0.184E+02	2	6	5	-0.244E+02
2	7	1	-0.203E+02	2	7	2	-0.265E+02	2	7	3	-0.136E+02	2	7	4	-0.281E+02	2	7	5	-0.274E+02
2	7	6	-0.263E+02	2	8	1	-0.177E+02	2	8	2	-0.277E+02	2	8	3	-0.189E+02	2	8	4	-0.273E+02
2	8	5	-0.255E+02	2	8	6	-0.187E+02	2	8	7	-0.257E+02	2	9	1	-0.107E+02	2	9	2	-0.255E+02
2	9	3	-0.130E+02	2	9	4	-0.246E+02	2	9	5	-0.260E+02	2	9	6	-0.273E+02	2	9	7	-0.248E+02
2	9	8	-0.245E+02	2	10	1	-0.122E+02	2	10	2	-0.290E+02	2	10	3	-0.170E+02	2	10	4	-0.278E+02
2	10	5	-0.277E+02	2	10	6	-0.225E+02	2	10	7	-0.276E+02	2	10	8	-0.263E+02	2	10	9	-0.277E+02
2	11	1	-0.186E+02	2	11	2	-0.816E+01	2	11	3	-0.237E+02	2	11	4	-0.701E+00	2	11	5	-0.502E+00
2	11	6	-0.803E-01	2	11	7	-0.580E+00	2	11	8	-0.818E+01	2	11	9	-0.553E+01	2	11	10	-0.130E+02
2	12	1	-0.170E+02	2	12	2	-0.284E+02	2	12	3	-0.170E+02	2	12	4	-0.273E+02	2	12	5	-0.273E+02
2	12	6	-0.211E+02	2	12	7	-0.269E+02	2	12	8	-0.240E+02	2	12	9	-0.257E+02	2	12	10	-0.273E+02
2	12	11	-0.370E+00	2	13	1	-0.154E+02	2	13	2	-0.263E+02	2	13	3	-0.170E+02	2	13	4	-0.277E+02
2	13	5	-0.266E+02	2	13	6	-0.245E+02	2	13	7	-0.275E+02	2	13	8	-0.273E+02	2	13	9	-0.247E+02
2	13	10	-0.278E+02	2	13	11	-0.672E+00	2	13	12	-0.270E+02	2	14	1	-0.130E+02	2	14	2	-0.219E+02
2	14	3	-0.108E+02	2	14	4	-0.290E+02	2	14	5	-0.256E+02	2	14	6	-0.270E+02	2	14	7	-0.261E+02
2	14	8	-0.244E+02	2	14	9	-0.282E+02	2	14	10	-0.274E+02	2	14	11	-0.251E+00	2	14	12	-0.275E+02
2	14	13	-0.260E+02	2	15	1	-0.649E-01	2	15	2	-0.766E+00	2	15	3	-0.651E-01	2	15	4	-0.128E+01
2	15	5	-0.174E+02	2	15	6	-0.131E+02	2	15	7	-0.476E+01	2	15	8	-0.788E+00	2	15	9	-0.565E+01
2	15	10	-0.472E+01	2	15	11	-0.346E-03	2	15	12	-0.168E+02	2	15	13	-0.472E+01	2	15	14	-0.534E+01
3	2	1	-0.276E+02	3	3	1	-0.235E+02	3	3	2	-0.246E+02	3	4	1	-0.282E+02	3	4	2	-0.230E+02
3	4	3	-0.153E+02	3	5	1	-0.275E+02	3	5	2	-0.278E+02	3	5	3	-0.244E+02	3	5	4	-0.237E+02
3	6	1	-0.227E+02	3	6	2	-0.609E+01	3	6	3	-0.113E+02	3	6	4	-0.240E+02	3	6	5	-0.151E+02
3	7	1	-0.477E+01	3	7	2	-0.469E+01	3	7	3	-0.245E+00	3	7	4	-0.124E+02	3	7	5	-0.138E+01
3	7	6	-0.275E+02	3	8	1	-0.285E+02	3	8	2	-0.277E+02	3	8	3	-0.271E+02	3	8	4	-0.186E+02
3	8	5	-0.273E+02	3	8	6	-0.154E+02	3	8	7	-0.469E+01	3	9	1	-0.130E+02	3	9	2	-0.962E+01
3	9	3	-0.236E+02	3	9	4	-0.759E+00	3	9	5	-0.872E+01	3	9	6	-0.189E+00	3	9	7	-0.178E-01
3	9	8	-0.187E+02	3	10	1	-0.131E+02	3	10	2	-0.177E+02	3	10	3	-0.806E+01	3	10	4	-0.259E+02
3	10	5	-0.171E+02	3	10	6	-0.277E+02	3	10	7	-0.223E+02	3	10	8	-0.833E+01	3	10	9	-0.181E+00
3	11	1	-0.238E+02	3	11	2	-0.258E+02	3	11	3	-0.283E+02	3	11	4	-0.131E+02	3	11	5	-0.259E+02
3	11	6	-0.794E+01	3	11	7	-0.405E+00	3	11	8	-0.269E+02	3	11	9	-0.173E+02	3	11	10	-0.167E+02
3	12	1	-0.805E+01	3	12	2	-0.469E+01	3	12	3	-0.232E+00	3	12	4	-0.186E+02	3	12	5	-0.133E+01
3	12	6	-0.252E+02	3	12	7	-0.278E+02	3	12	8	-0.810E+00	3	12	9	-0.167E-01	3	12	10	-0.275E+02
3	12	11	-0.385E+00	3	13	1	-0.261E+02	3	13	2	-0.170E+02	3	13	3	-0.362E+01	3	13	4	-0.279E+02
3	13	5	-0.238E+02	3	13	6	-0.248E+02	3	13	7	-0.142E+02	3	13	8	-0.170E+02	3	13	9	-0.675E+00
3	13	10	-0.253E+02	3	13	11	-0.151E+02	3	13	12	-0.230E+02	3	14	1	-0.286E+02	3	14	2	-0.291E+02
3	14	3	-0.279E+02	3	14	4	-0.130E+02	3	14	5	-0.260E+02	3	14	6	-0.796E+01	3	14	7	-0.309E+00
3	14	8	-0.234E+02	3	14	9	-0.274E+02	3	14	10	-0.484E+01	3	14	11	-0.277E+02	3	14	12	-0.521E+01
3	14	13	-0.174E+02	3	15	1	-0.267E+02	3	15	2	-0.234E+02	3	15	3	-0.213E+02	3	15	4	-0.260E+02
3	15	5	-0.287E+02	3	15	6	-0.201E+02	3	15	7	-0.799E+01	3	15	8	-0.278E+02	3	15	9	-0.107E+02
3	15	10	-0.170E+02	3	15	11	-0.215E+02	3	15	12	-0.135E+02	3	15	13	-0.227E+02	3	15	14	-0.213E+02
4	2	1	-0.170E+02	4	3	1	-0.282E+02	4	3	2	-0.225E+02	4	4	1	-0.206E+02	4	4	2	-0.246E+02
4	4	3	-0.284E+02	4	5	1	-0.186E+02	4	5	2	-0.277E+02	4	5	3	-0.247E+02	4	5	4	-0.282E+02
4	6	1	-0.188E+02	4	6	2	-0.273E+02	4	6	3	-0.267E+02	4	6	4	-0.268E+02	4	6	5	-0.266E+02
4	7	1	-0.266E+02	4	7	2	-0.203E+02	4	7	3	-0.279E+02	4	7	4	-0.247E+02	4	7	5	-0.226E+02
4	7	6	-0.253E+02	4	8	1	-0.216E+02	4	8	2	-0.277E+02	4	8	3	-0.265E+02	4	8	4	-0.236E+02
4	8	5	-0.276E+02	4	8	6	-0.271E+02	4	8	7	-0.259E+02	4	9	1	-0.151E+02	4	9	2	-0.279E+02
4	9	3	-0.190E+02	4	9	4	-0.272E+02	4	9	5	-0.278E+02	4	9	6	-0.265E+02	4	9	7	-0.213E+02
4	9	8	-0.280E+02	4	10	1	-0.286E+02	4	10	2	-0.148E+02	4	10	3	-0.278E+02	4	10	4	-0.283E+02
4	10	5	-0.186E+02	4	10	6	-0.225E+02	4	10	7	-0.275E+02	4	10	8	-0.214E+02	4	10	9	-0.201E+02
4	11	1	-0.275E+02	4	11	2	-0.228E+02	4	11	3	-0.258E+02	4	11	4	-0.277E+02	4	11	5	-0.215E+02
4	11	6	-0.191E+02	4	11	7	-0.275E+02	4	11	8	-0.186E+02	4	11	9	-0.122E+02	4	11	10	-0.276E+02
4	12	1	-0.261E+02	4	12	2	-0.194E+02	4	12	3	-0.278E+02	4	12	4	-0.265E+02	4	12	5	-0.283E+02
4	12	6	-0.276E+02	4	12	7	-0.278E+02	4	12	8	-0.172E+02	4	12	9	-0.226E+02	4	12	10	-0.278E+02
4	12	11	-0.267E+02	4	13	1	-0.264E+02	4	13	2	-0.269E+02	4	13	3	-0.269E+02	4	13	4	-0.277E+02
4	13	5	-0.253E+02	4	13	6	-0.275E+02	4	13	7	-0.242E+02	4	13	8	-0.255E+02	4	13	9	-0.279E+02
4	13	10	-0.282E+02	4	13	11	-0.252E+02	4	13	12	-0.280E+02	4	14	1	-0.214E+02	4	14	2	-0.263E+02
4	14	3	-0.241E+02	4	14	4	-0.276E+02	4	14	5	-0.265E+02	4	14	6	-0.278E+02	4	14	7	-0.230E+02
4	14	8	-0.284E+02	4	14	9	-0.280E+02	4	14	10	-0.199E+02	4	14	11	-0.226E+02	4	14	12	-0.266E+02
4	14	13	-0.270E+02	4	15	1	-0.810E+01	4	15	2	-0.239E+02	4	15	3	-0.188E+02	4	15	4	-0.225E+02
4	15	5	-0.293E+02	4	15	6	-0.254E+02	4	15	7	-0.231E+02	4	15	8	-0.266E+02	4	15	9	-0.265E+02
4	15	10	-0.176E+02	4	15	11	-0.832E+01	4	15	12	-0.170E+02	4	15	13	-0.262E+02	4	15	14	-0.236E+02
5	2	1	-0.235E+02	5	3	1	-0.278E+02	5	3	2	-0.242E+02	5	4	1	-0.265E+02	5	4	2	-0.269E+02
5	4	3	-0.276E+02	5	5	1	-0.214E+02	5	5	2	-0.276E+02	5	5	3	-0.254E+02	5	5	4	-0.259E+02
5	6	1	-0.219E+02	5	6	2	-0.288E+02	5	6	3	-0.266E+02	5	6	4	-0.285E+02	5	6	5	-0.273E+02
5	7	1	-0.276E+02	5	7	2	-0.226E+02	5	7	3	-0.246E+02	5	7	4	-0.286E+02	5	7	5	-0.245E+02
5	7	6	-0.260E+02	5	8	1	-0.255E+02	5	8	2	-0.277E+02	5	8	3	-0.260E+02	5	8	4	-0.265E+02
5	8	5	-0.280E+02	5	8	6	-0.273E+02	5	8	7	-0.226E+02	5	9	1	-0.206E+02	5	9	2	-0.282E+02
5	9	3	-0.226E+02	5	9	4	-0.237E+02	5	9	5	-0.272E+02	5	9	6	-0.209E+02	5	9	7	-0.133E+02
5	9	8	-0.231E+02	5	10	1	-0.272E+02	5	10	2	-0.262E+02	5	10	3	-0.277E+02	5	10	4	-0.277E+02
5	10	5	-0.235E+02	5	10	6	-0.230E+02	5	10	7	-0.278E+02	5	10	8	-0.209E+02	5	10	9	-0.134E+02

5	11	1	-0.276E+02	5	11	2	-0.226E+02	5	11	3	-0.251E+02	5	11	4	-0.289E+02	5	11	5	-0.225E+02
5	11	6	-0.269E+02	5	11	7	-0.274E+02	5	11	8	-0.255E+02	5	11	9	-0.132E+02	5	11	10	-0.281E+02
5	12	1	-0.275E+02	5	12	2	-0.205E+02	5	12	3	-0.267E+02	5	12	4	-0.270E+02	5	12	5	-0.244E+02
5	12	6	-0.200E+02	5	12	7	-0.279E+02	5	12	8	-0.276E+02	5	12	9	-0.235E+02	5	12	10	-0.273E+02
5	12	11	-0.280E+02	5	13	1	-0.274E+02	5	13	2	-0.265E+02	5	13	3	-0.278E+02	5	13	4	-0.278E+02
5	13	5	-0.265E+02	5	13	6	-0.279E+02	5	13	7	-0.265E+02	5	13	8	-0.260E+02	5	13	9	-0.165E+02
5	13	10	-0.269E+02	5	13	11	-0.260E+02	5	13	12	-0.285E+02	5	14	1	-0.343E+02	5	14	2	-0.275E+02
5	14	3	-0.246E+02	5	14	4	-0.246E+02	5	14	5	-0.276E+02	5	14	6	-0.263E+02	5	14	7	-0.225E+02
5	14	8	-0.281E+02	5	14	9	-0.254E+02	5	14	10	-0.203E+02	5	14	11	-0.213E+02	5	14	12	-0.205E+02
5	14	13	-0.291E+02	5	15	1	-0.201E+02	5	15	2	-0.182E+02	5	15	3	-0.869E+01	5	15	4	-0.153E+02
5	15	5	-0.206E+02	5	15	6	-0.201E+02	5	15	7	-0.843E+01	5	15	8	-0.193E+02	5	15	9	-0.258E+02
5	15	10	-0.153E+02	5	15	11	-0.107E+02	5	15	12	-0.130E+02	5	15	13	-0.218E+02	5	15	14	-0.218E+02
6	2	1	-0.372E+00	6	3	1	-0.277E+02	6	3	2	-0.551E+00	6	4	1	-0.468E+01	6	4	2	-0.275E+02
6	4	3	-0.142E+01	6	5	1	-0.292E+00	6	5	2	-0.277E+02	6	5	3	-0.495E+01	6	5	4	-0.246E+02
6	6	1	-0.857E+01	6	6	2	-0.273E+02	6	6	3	-0.117E+01	6	6	4	-0.274E+02	6	6	5	-0.254E+02
6	7	1	-0.110E+02	6	7	2	-0.263E+02	6	7	3	-0.967E+01	6	7	4	-0.265E+02	6	7	5	-0.118E+02
6	7	6	-0.203E+02	6	8	1	-0.361E+00	6	8	2	-0.278E+02	6	8	3	-0.484E+01	6	8	4	-0.280E+02
6	8	5	-0.281E+02	6	8	6	-0.256E+02	6	8	7	-0.186E+02	6	9	1	-0.228E+02	6	9	2	-0.135E+02
6	9	3	-0.272E+02	6	9	4	-0.110E+02	6	9	5	-0.109E+02	6	9	6	-0.130E+02	6	9	7	-0.244E+02
6	9	8	-0.796E+01	6	10	1	-0.207E+02	6	10	2	-0.797E+01	6	10	3	-0.260E+02	6	10	4	-0.191E+02
6	10	5	-0.138E+02	6	10	6	-0.217E+02	6	10	7	-0.253E+02	6	10	8	-0.108E+02	6	10	9	-0.277E+02
6	11	1	-0.274E+02	6	11	2	-0.176E+01	6	11	3	-0.282E+02	6	11	4	-0.153E+02	6	11	5	-0.145E+01
6	11	6	-0.131E+02	6	11	7	-0.268E+02	6	11	8	-0.485E+01	6	11	9	-0.276E+02	6	11	10	-0.272E+02
6	12	1	-0.708E+01	6	12	2	-0.137E+02	6	12	3	-0.256E+02	6	12	4	-0.194E+02	6	12	5	-0.151E+02
6	12	6	-0.213E+02	6	12	7	-0.276E+02	6	12	8	-0.186E+02	6	12	9	-0.227E+02	6	12	10	-0.220E+02
6	12	11	-0.225E+02	6	13	1	-0.468E+01	6	13	2	-0.244E+02	6	13	3	-0.146E+02	6	13	4	-0.279E+02
6	13	5	-0.253E+02	6	13	6	-0.280E+02	6	13	7	-0.235E+02	6	13	8	-0.281E+02	6	13	9	-0.110E+02
6	13	10	-0.171E+02	6	13	11	-0.199E+02	6	13	12	-0.246E+02	6	14	1	-0.249E+02	6	14	2	-0.115E+02
6	14	3	-0.273E+02	6	14	4	-0.557E+01	6	14	5	-0.110E+01	6	14	6	-0.530E+01	6	14	7	-0.213E+02
6	14	8	-0.472E+01	6	14	9	-0.275E+02	6	14	10	-0.269E+02	6	14	11	-0.274E+02	6	14	12	-0.237E+02
6	14	13	-0.814E+01	6	15	1	-0.841E+01	6	15	2	-0.272E+02	6	15	3	-0.148E+02	6	15	4	-0.277E+02
6	15	5	-0.245E+02	6	15	6	-0.263E+02	6	15	7	-0.181E+02	6	15	8	-0.253E+02	6	15	9	-0.151E+02
6	15	10	-0.514E+01	6	15	11	-0.130E+02	6	15	12	-0.274E+02	6	15	13	-0.278E+02	6	15	14	-0.562E+01


TARGET CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.
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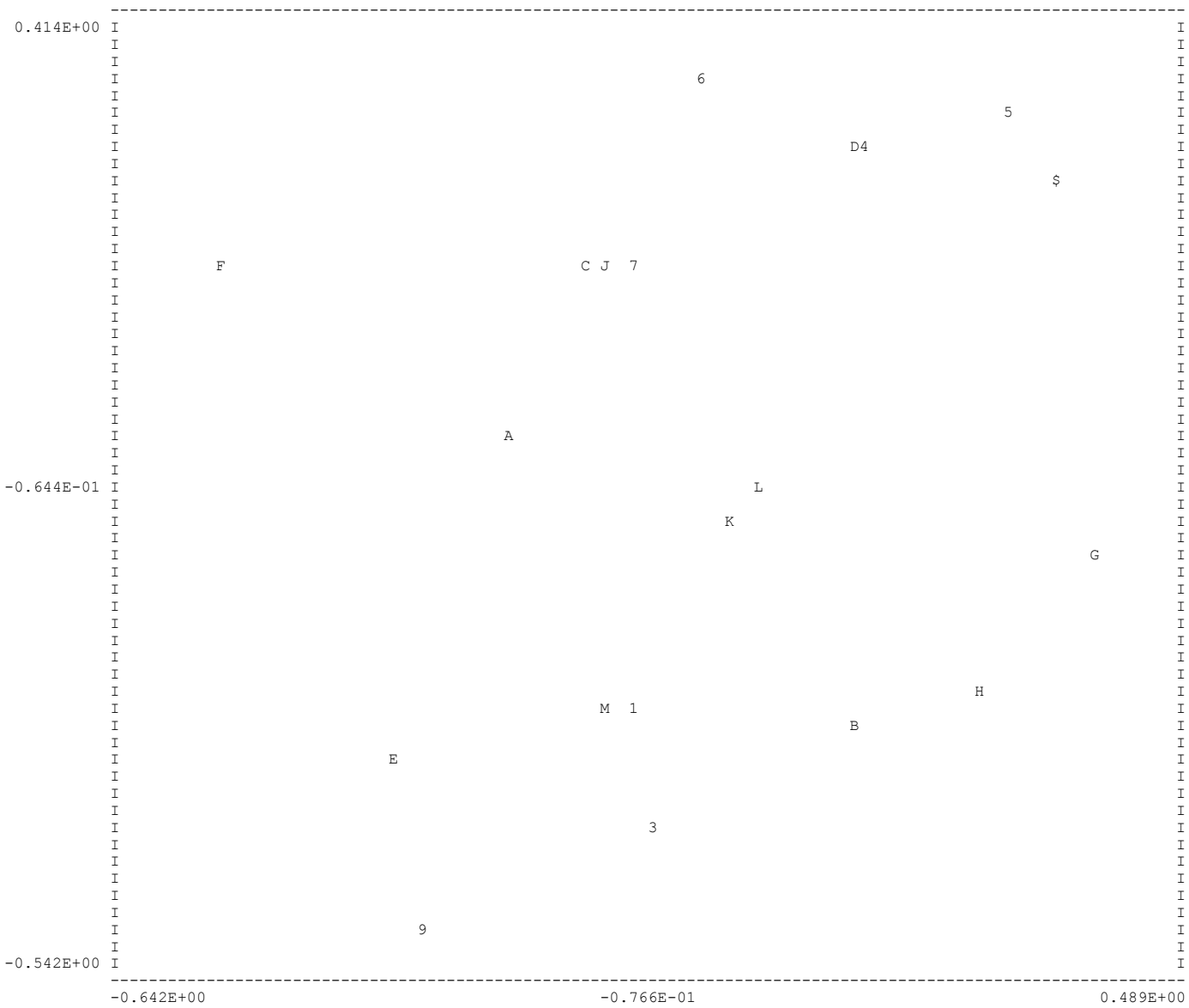
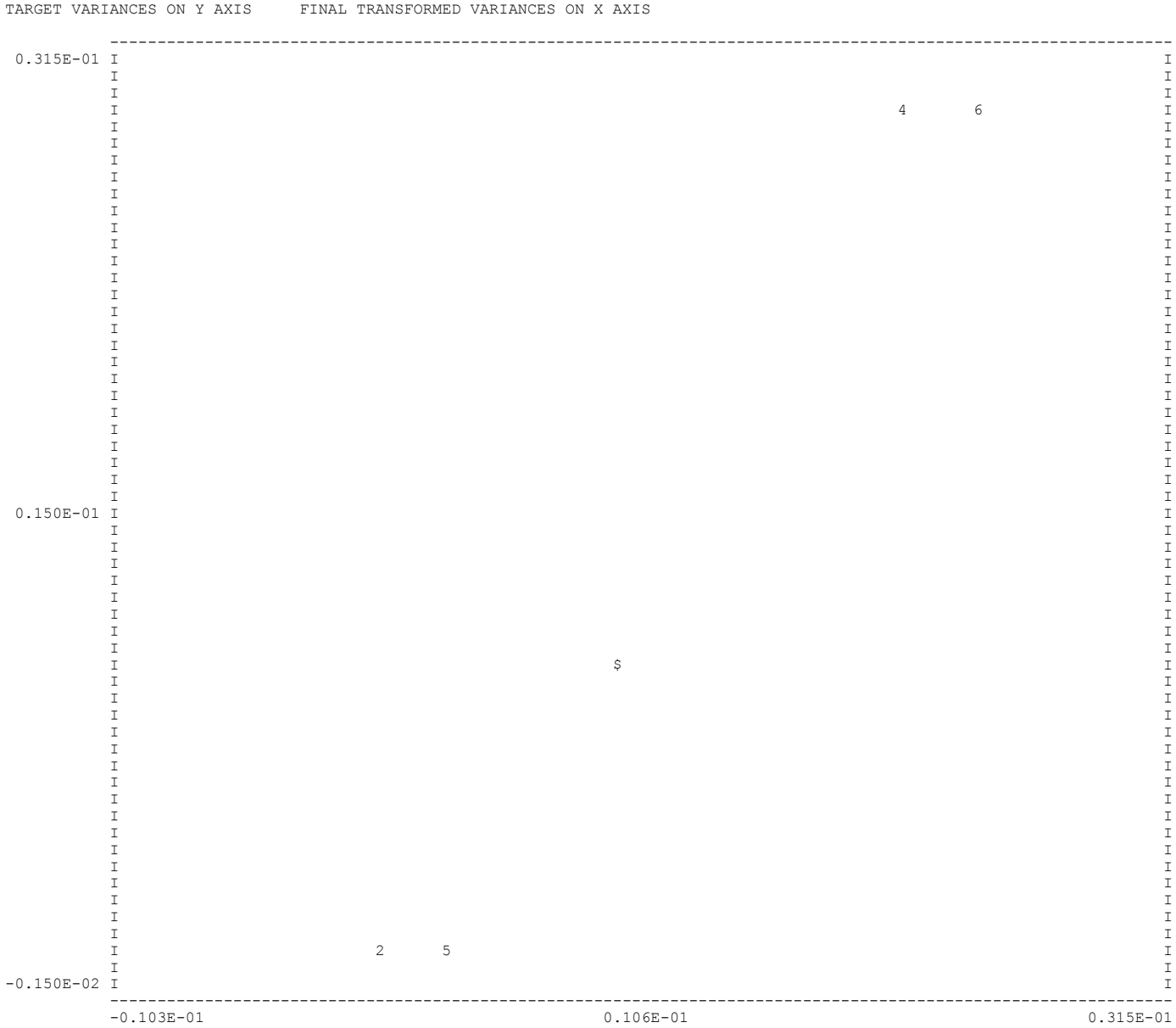
-0.715E-01
-0.556E+00
-0.640E+00
-0.655E-01
0.509E+00
6
5
D4
2
8
F
J7
C
A
L
K
G
1
B
H
M
E
3
9

TRANSFORMED / ESTIMATED CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



PRODUCT MOMENT CORRELATION OF TARGET AND FINAL TRANSFORMED STIMULUS VARIANCES = 0.9900



ESTIMATED TRUE AND EXPECTED DISTANCES

OBJECTS		TRUE	EXPECTED
2	1	0.511110E+01	0.520926E+01
3	1	0.883167E+00	0.148625E+01
3	2	0.571299E+01	0.580057E+01
4	1	0.450389E+01	0.461562E+01
4	2	0.149819E+01	0.186976E+01
4	3	0.525820E+01	0.535353E+01
5	1	0.527890E+01	0.537383E+01
5	2	0.612790E+00	0.136954E+01
5	3	0.594538E+01	0.602948E+01
5	4	0.114444E+01	0.163082E+01
6	1	0.466689E+01	0.477475E+01
6	2	0.287545E+01	0.305619E+01
6	3	0.551848E+01	0.560936E+01
6	4	0.139690E+01	0.179705E+01
6	5	0.242229E+01	0.264020E+01
7	1	0.330261E+01	0.345748E+01
7	2	0.334470E+01	0.349801E+01
7	3	0.417406E+01	0.429523E+01
7	4	0.198461E+01	0.225617E+01
7	5	0.311646E+01	0.328151E+01
7	6	0.142946E+01	0.181911E+01
8	1	0.512884E+01	0.522664E+01
8	2	0.177345E-01	0.125392E+01
8	3	0.573058E+01	0.581788E+01
8	4	0.150778E+01	0.187682E+01

8	5	0.609350E+00	0.136829E+01
8	6	0.288327E+01	0.306348E+01
8	7	0.335854E+01	0.351117E+01
9	1	0.236963E+01	0.259175E+01
9	2	0.747652E+01	0.754323E+01
9	3	0.199400E+01	0.226412E+01
9	4	0.677407E+01	0.684774E+01
9	5	0.762038E+01	0.768580E+01
9	6	0.669600E+01	0.677056E+01
9	7	0.526760E+01	0.536276E+01
9	8	0.749426E+01	0.756081E+01
10	1	0.219855E+01	0.244102E+01
10	2	0.469532E+01	0.480274E+01
10	3	0.305697E+01	0.322570E+01
10	4	0.352838E+01	0.367270E+01
10	5	0.459807E+01	0.470769E+01
10	6	0.306088E+01	0.322855E+01
10	7	0.165989E+01	0.199120E+01
10	8	0.471142E+01	0.481846E+01
10	9	0.372564E+01	0.386184E+01
11	1	0.173380E+01	0.205048E+01
11	2	0.433114E+01	0.444749E+01
11	3	0.173389E+01	0.204993E+01
11	4	0.425478E+01	0.437351E+01
11	5	0.468105E+01	0.478848E+01
11	6	0.492161E+01	0.502406E+01
11	7	0.384174E+01	0.397433E+01
11	8	0.434786E+01	0.446374E+01
11	9	0.372783E+01	0.386427E+01
11	10	0.342731E+01	0.357719E+01
12	1	0.324816E+01	0.340594E+01
12	2	0.374345E+01	0.387960E+01
12	3	0.412996E+01	0.425257E+01
12	4	0.237457E+01	0.259666E+01
12	5	0.351057E+01	0.365602E+01
12	6	0.167549E+01	0.200336E+01
12	7	0.398779E+00	0.130360E+01
12	8	0.375730E+01	0.389292E+01
12	9	0.508271E+01	0.518144E+01
12	10	0.139132E+01	0.179217E+01
12	11	0.396668E+01	0.409504E+01
13	1	0.448016E+01	0.459251E+01
13	2	0.156691E+01	0.192094E+01
13	3	0.524062E+01	0.533629E+01
13	4	0.689792E-01	0.125532E+01
13	5	0.121060E+01	0.167195E+01
13	6	0.133165E+01	0.175193E+01
13	7	0.192375E+01	0.220500E+01
13	8	0.157656E+01	0.192823E+01
13	9	0.674241E+01	0.681643E+01
13	10	0.347650E+01	0.362308E+01
13	11	0.425783E+01	0.437649E+01
13	12	0.231245E+01	0.254119E+01
14	1	0.190121E+01	0.218648E+01
14	2	0.675010E+01	0.682413E+01
14	3	0.204030E+01	0.230433E+01
14	4	0.587100E+01	0.595620E+01
14	5	0.681189E+01	0.688520E+01
14	6	0.562742E+01	0.571635E+01
14	7	0.420240E+01	0.432242E+01
14	8	0.676763E+01	0.684146E+01
14	9	0.123891E+01	0.168992E+01
14	10	0.258706E+01	0.278849E+01
14	11	0.358679E+01	0.372930E+01
14	12	0.397359E+01	0.410083E+01
14	13	0.583142E+01	0.591720E+01
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15	3	0.533228E+01	0.542704E+01
15	4	0.516072E+01	0.525846E+01
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21	11	0.193153E+01	0.242754E+01
21	12	0.333432E+01	0.359325E+01
21	13	0.465716E+01	0.482839E+01
21	14	0.167997E+01	0.224598E+01
21	15	0.451888E+01	0.472271E+01
21	16	0.399861E+01	0.421679E+01
21	17	0.297966E+01	0.328945E+01
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21	19	0.171980E+01	0.248112E+01

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 21 20    0.208175E+01    0.270759E+01

ELAPSED MINUTES =         0
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NSUB     4.0
NSETS    248.0
NDIM     2.0
METRIC   1.0
TCOR     1.0
TSIG     1.0
TMES     2.0
INITIAL  2.0
ITMAX    20.0
SAMPLE   1.0
DISTRIB  3.0
NACT     32.0
NSIG     8.0
NOPT     0.0
STAND    2.0
FIXED    3.0
NMMP     0.0
NPROX    0.0
NFMAX    2000.0
NCHC     0.0
MIXTURE  2.0
DOOVER   2.0
SIMDIS   1.0
ALGOR    1.0
MODELA   2.0
MODELB   2.0
QPDF     2.0
NTRAC    -1.0
UMLMIN   0.00010
UINMIN   0.010
ENDIN


TARGET DATA
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-0.3615 -0.3507
 0.2636  0.2100
-0.2435  0.3800
-0.3028  0.4891
 0.2815  0.3595
 0.4353  0.0170
 0.2870 -0.0454
 0.3868  0.3883
 0.4417 -0.2883
 0.0339  0.1383
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0.036
0.090
0.030
0.030
0.036
0.006
0.030
0.012
 1 1 1 1 2 2 2 2 3 3 3 3 4 4 4 4
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2
 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2
 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2
 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2
 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
 1 2 3 4 1 2 3 4
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
 31 32
```

```
DISTANCE DATA
   0.5175
   0.8970  9.9950
   0.3962  0.5926  0.3027
   0.4790  1.2609  0.6697  0.3091
   1.1573  0.9933  0.9365  1.7355  1.7127
   0.7094  1.0016  0.4386  0.5665  1.0675  0.3021
   6.6502  1.9706  0.7067  1.5527  1.7144  0.7259  2.7182
   1.2154  1.0038  0.8545  9.9950  5.2580  0.6405  1.1504  0.3830
   0.0117  0.3416  0.3827  0.6848  5.1068  0.0819  0.5387  0.2482  0.3055
   0.4345  0.6993  1.6106  1.6930  0.7888  0.2428  1.2283  1.2130  0.3936  1.2223
   0.5820  0.9812  1.1236  0.5127  3.9230  0.7303  1.7686  0.3345  1.8290  4.5414  0.4482

   ---------------------- 246 sets of data ---------------------------------------------

   2.0975
   9.9950  0.6156
   9.9950  0.7530  3.0516
   3.6220  1.2720  0.6735  1.2601
   0.1097  0.2143  0.8500  0.0840  0.2384
   1.3912  0.7496  0.4960  1.2129  1.0044  9.9950
   1.7349  0.8524  1.1241  0.8096  0.9266  4.0905  1.1453
   2.2825  0.6802  1.3987  0.7661  1.3491  3.5401  1.0362  1.2674
   2.1930  1.4168  1.3361  0.4980  1.1210  4.4813  1.3953  1.5856  1.6231
   3.3204  0.6029  1.1458  0.5656  0.6491  1.8638  0.8381  2.1152  0.5404  0.7942
                   1.4677  1.0309  0.9537  0.9448  0.4431  1.4482  0.8907  1.4991  0.6213  0.6019  1.1463
```

Example 3: Output

PROSCAL

Project1

```
DATE    2006:05:03
TIME    12:07:07.180
NUMBER OF STIMULI        12
NUMBER OF ACTIVE COORD.  32
NUMBER OF DIMENSIONS      2
NUMBER OF VARIANCES       8
NUMBER OF IDEAL OBJECTS 248
NUMBER OF DATA SETS       8
NUMBER OF ML ITERATIONS  20
TRANSFORMATION INDEX      0
OPTIMIZATION LEVEL        0
TARGET COORD. OPTION   TARG
TARGET VARIANCE OPT.   TARG
TARGET MEAS PARAM OPT. TRNO
STANDARDIZATION OPT.   STNO
INITIALIZATION OPTION  COMP
DATA TYPE OPTION       PREF
DISTRIBUTION OPTION    CVNO
FIXED POINT OPTION     FXNO
SAMPLING               INDP
METRIC OPTION          ECLD
MIXTURE OPTION         NOEM
REANALYSIS OPTION      NORD
PROXIMITIES OPTION     NOSI

                                UMLMIN    0.00010
                                UINMIN    0.01000
                                ZMIN      0.00000
                                NFMAX        2000
                                NTRAC          -1
```

TARGET CONFIGURATION

-0.115	-0.235
0.397	0.172
0.137	-0.232
0.297	0.431
0.345	0.449
-0.361	-0.351
0.264	0.210
-0.243	0.380
-0.303	0.489
0.281	0.359
0.435	0.017
0.287	-0.045
0.387	0.388
0.442	-0.288
0.034	0.138
-0.295	-0.367

TARGET VARIANCES

0.036
0.090
0.030
0.030
0.036
0.006
0.030
0.012

VARIANCE SET MEMBERSHIP

OBJECTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SET	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4

SUBJECT SET MEMBERSHIP

SUBJECT	SET
1	1
2	2
3	3
4	4
5	1
6	2
7	3
8	4
9	1
10	2
11	3
12	4
13	1

14	2
15	3
16	4
17	1
18	2
19	3
20	4
21	1
22	2
23	3
24	4
25	1
26	2
27	3
28	4
29	1
30	2
31	3
32	4
33	1
34	2
35	3
36	4
37	1
38	2
39	3
40	4
41	1
42	2
43	3
44	4
45	1
46	2
47	3
48	4
49	1
50	2
51	3
52	4
53	1
54	2
55	3
56	4
57	1
58	2
59	3
60	4
61	1
62	2
63	3
64	4
65	1
66	2
67	3
68	4
69	1
70	2
71	3
72	4
73	1
74	2
75	3
76	4
77	1
78	2
79	3
80	4
81	1
82	2
83	3
84	4
85	1
86	2
87	3
88	4
89	1
90	2
91	3
92	4
93	1
94	2
95	3
96	4
97	1
98	2
99	3
100	4
101	1
102	2
103	3
104	4
105	1

106	2
107	3
108	4
109	1
110	2
111	3
112	4
113	1
114	2
115	3
116	4
117	1
118	2
119	3
120	4
121	1
122	2
123	3
124	4
125	1
126	2
127	3
128	4
129	1
130	2
131	3
132	4
133	1
134	2
135	3
136	4
137	1
138	2
139	3
140	4
141	1
142	2
143	3
144	4
145	1
146	2
147	3
148	4
149	1
150	2
151	3
152	4
153	1
154	2
155	3
156	4
157	1
158	2
159	3
160	4
161	1
162	2
163	3
164	4
165	1
166	2
167	3
168	4
169	1
170	2
171	3
172	4
173	1
174	2
175	3
176	4
177	1
178	2
179	3
180	4
181	1
182	2
183	3
184	4
185	1
186	2
187	3
188	4
189	1
190	2
191	3
192	4
193	1
194	2
195	3
196	4
197	1

```
   198        2
   199        3
   200        4
   201        1
   202        2
   203        3
   204        4
   205        1
   206        2
   207        3
   208        4
   209        1
   210        2
   211        3
   212        4
   213        1
   214        2
   215        3
   216        4
   217        1
   218        2
   219        3
   220        4
   221        1
   222        2
   223        3
   224        4
   225        1
   226        2
   227        3
   228        4
   229        1
   230        2
   231        3
   232        4
   233        1
   234        2
   235        3
   236        4
   237        1
   238        2
   239        3
   240        4
   241        1
   242        2
   243        3
   244        4
   245        1
   246        2
   247        3
   248        4


ISCALE FOR IDEAL OBJECT   1

   1.486   0.638   1.289   0.577   0.522   2.225   0.649   1.485   1.542   0.611
   1.071   1.258


ISCALE FOR IDEAL OBJECT   2

   0.845   0.677   0.580   1.076   1.267   1.371   0.948   1.678   1.844   1.219
   0.679   0.663


ISCALE FOR IDEAL OBJECT   3

   0.784   0.881   0.868   0.929   1.047   1.479   0.734   1.008   1.357   0.992
   1.228   0.948


ISCALE FOR IDEAL OBJECT   4

   0.422   1.215   0.669   1.395   1.491   0.380   1.240   1.155   1.363   1.435
   1.252   1.051


INITIAL CONFIGURATION

         0.672         0.034
        -0.416         0.241
         0.398         0.224
        -0.633         0.026
        -0.768        -0.079
         1.654         0.048
        -0.453         0.016
         0.187        -0.606
         0.049        -0.595
        -0.671        -0.068
        -0.167         0.455
         0.149         0.303
        -0.775        -0.082
```

```
         0.400        0.233
        -0.464        0.017
         1.701        0.050
```

INITIAL STANDARD DEVIATIONS - ALL OBJECTS

```
         0.926
         0.339
         0.703
         0.562
         0.473
         1.817
         0.267
         0.728
         0.534
         0.446
         0.469
         0.504
         0.634
         0.267
         0.987
         0.885
```

MEAN OF STANDARD DEVIATIONS   0.659

1 INITIAL CONFIGURATION   DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.

```
            ----------------------------------------------------------------------------------------------------------------
  0.108E+01 I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                              B                                                                               I
            I                                                                                                              I
            I                                                                                                              I
            I                                          C                                                                   I
            I                                                                                                              I
            I                    2                               $                                                         I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                       6 G    I
            I           4      $                                            1                                              I
            I                                                                                                              I
            I     D5   A                                                                                                   I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
 -0.355E+00 I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                      9     8                                                                 I
            I                                                                                                              I
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            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
            I                                                                                                              I
 -0.179E+01 I                                                                                                              I
            ----------------------------------------------------------------------------------------------------------------
            -0.899E+00                                           0.463E+00                                         0.183E+01
```

INITIAL VARIANCES - ACTIVE VARIABLES

```
        0.400
        0.400
        0.674
        0.674
        0.238
        0.238
        0.480
        0.480


INITIAL MEASUREMENT CONSTANTS     0.0000    1.0000    1.0000


TRANSFORMED CONFIGURATION

       -0.199        -0.249
        0.247         0.108
       -0.033        -0.205
        0.235         0.265
        0.239         0.354
       -0.522        -0.640
        0.171         0.198
       -0.288         0.155
       -0.238         0.206
        0.210         0.312
        0.248        -0.061
        0.082        -0.134
        0.240         0.357
       -0.030        -0.209
        0.175         0.202
       -0.537        -0.659


CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.8370     SUM OF DISTANCE DIFFERENCES =   0.229230E+01


TRANSFORMED VARIANCES AND COVARIANCES

         0.107
         0.000         0.107
         0.180
         0.000         0.180
         0.064
         0.000         0.064
         0.128
         0.000         0.128


RESCALED CONFIGURATION

         0.169        -0.347
        -0.710        -0.179
        -0.053        -0.193
        -0.885        -0.352
        -0.995        -0.438
         0.962        -0.335
        -0.740        -0.361
        -0.223        -0.863
        -0.334        -0.855
        -0.916        -0.429
        -0.509        -0.006
        -0.253        -0.129
        -1.000        -0.440
        -0.051        -0.186
        -0.749        -0.360
         1.000        -0.333


RESCALED VARIANCES

         0.261
         0.261
         0.440
         0.440
         0.156
         0.156
         0.314
         0.314


INITIAL LOG LIKELIHOOD VALUE                  -0.29373232E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.169  -0.710  -0.053  -0.885  -0.995   0.962  -0.740  -0.223  -0.334  -0.916
 -0.509  -0.253  -1.000  -0.051  -0.749   1.000  -0.347  -0.179  -0.193  -0.352
 -0.438  -0.335  -0.361  -0.863  -0.855  -0.429  -0.006  -0.129  -0.440  -0.186
 -0.360  -0.333   0.261   0.261   0.440   0.440   0.156   0.156   0.314   0.314
```

```
LOG LIKELIHOOD VALUE AT END OF PHASE               -0.281755E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.169  -0.710  -0.053  -0.885  -0.995   0.962  -0.740  -0.223  -0.334  -0.916
 -0.509  -0.253  -1.000  -0.051  -0.749   1.000  -0.347  -0.179  -0.193  -0.352
 -0.438  -0.335  -0.361  -0.863  -0.855  -0.429  -0.006  -0.129  -0.440  -0.186
 -0.360  -0.333   0.092   0.071   0.038   0.005   0.031   0.000   0.181   0.231

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.261113E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.592  -0.804   0.287  -1.033  -1.194   1.063  -0.701  -0.409  -0.678  -0.997
 -0.431  -0.117  -1.084   0.026  -0.272   1.009  -0.456   0.113   0.042  -0.530
 -0.452  -0.747  -0.305  -1.408  -1.631  -0.452   0.173   0.052  -0.303   0.788
 -0.592  -0.681   0.092   0.071   0.038   0.005   0.031   0.000   0.181   0.231

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.260646E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.592  -0.804   0.287  -1.033  -1.194   1.063  -0.701  -0.409  -0.678  -0.997
 -0.431  -0.117  -1.084   0.026  -0.272   1.009  -0.456   0.113   0.042  -0.530
 -0.452  -0.747  -0.305  -1.408  -1.631  -0.452   0.173   0.052  -0.303   0.788
 -0.592  -0.681   0.223   0.069   0.038   0.005   0.030   0.000   0.181   0.231

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.260326E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.689  -0.801   0.353  -1.061  -1.205   1.124  -0.694  -0.384  -0.652  -1.003
 -0.423  -0.090  -1.118   0.130  -0.244   1.081  -0.542   0.103   0.030  -0.530
 -0.464  -0.862  -0.302  -1.468  -1.699  -0.458   0.196   0.046  -0.303   0.762
 -0.613  -0.681   0.223   0.069   0.038   0.005   0.030   0.000   0.181   0.231

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.260260E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.689  -0.801   0.353  -1.061  -1.205   1.124  -0.694  -0.384  -0.652  -1.003
 -0.423  -0.090  -1.118   0.130  -0.244   1.081  -0.542   0.103   0.030  -0.530
 -0.464  -0.862  -0.302  -1.468  -1.699  -0.458   0.196   0.046  -0.303   0.762
 -0.613  -0.681   0.223   0.069   0.038   0.005   0.024   0.000   0.179   0.231

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.260249E+05


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.689  -0.801   0.348  -1.056  -1.205   1.118  -0.694  -0.384  -0.652  -1.003
 -0.423  -0.095  -1.118   0.131  -0.244   1.072  -0.542   0.101   0.024  -0.527
 -0.465  -0.862  -0.301  -1.470  -1.700  -0.465   0.190   0.046  -0.303   0.762
 -0.617  -0.681   0.223   0.069   0.038   0.005   0.024   0.000   0.179   0.231

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.260249E+05


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.689  -0.801   0.348  -1.056  -1.205   1.118  -0.694  -0.384  -0.652  -1.003
 -0.423  -0.095  -1.118   0.131  -0.244   1.072  -0.542   0.101   0.024  -0.527
 -0.465  -0.862  -0.301  -1.470  -1.700  -0.465   0.190   0.046  -0.303   0.762
 -0.617  -0.681   0.223   0.069   0.038   0.005   0.024   0.000   0.178   0.231

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.260249E+05


ESTIMATE VALUES ENTERING LAST PHASE

  0.689  -0.801   0.348  -1.056  -1.205   1.118  -0.694  -0.384  -0.652  -1.003
 -0.423  -0.095  -1.118   0.131  -0.244   1.072  -0.542   0.101   0.023  -0.527
 -0.467  -0.865  -0.301  -1.470  -1.700  -0.465   0.190   0.046  -0.303   0.762
 -0.617  -0.681   0.223   0.069   0.038   0.005   0.024   0.000   0.178   0.231


FINAL LOG LIKELIHOOD VALUE      -0.260245E+05

NUMBER OF FREE PARAMETERS        37
NUMBER OF JUDGMENTS     16368
CAIC                 0.524451E+05
BIC                  0.524081E+05


FUNCTION EVALUATIONS =   1333       CONSTRAINT EVALUATIONS =      0
```

FINAL CONFIGURATION

0.689	-0.542
-0.801	0.101
0.348	0.023
-1.056	-0.527
-1.205	-0.467
1.118	-0.865
-0.694	-0.304
-0.384	-1.470
-0.652	-1.700
-1.003	-0.465
-0.423	0.190
-0.095	0.041
-1.118	-0.303
0.129	0.756
-0.244	-0.617
1.071	-0.681

FINAL VARIANCES

0.223
0.069
0.038
0.005
0.024
0.000
0.178
0.231

RESCALED CONFIGURATION

0.695	-0.179
-0.362	0.278
0.453	0.222
-0.543	-0.168
-0.649	-0.125
1.000	-0.408
-0.286	-0.010
-0.066	-0.837
-0.257	-1.000
-0.506	-0.124
-0.094	0.341
0.139	0.235
-0.588	-0.009
0.298	0.743
0.033	-0.231
0.966	-0.277

RESCALED VARIANCES

0.112
0.035
0.019
0.003
0.012
0.000
0.090
0.116

TRANSFORMED CONFIGURATION

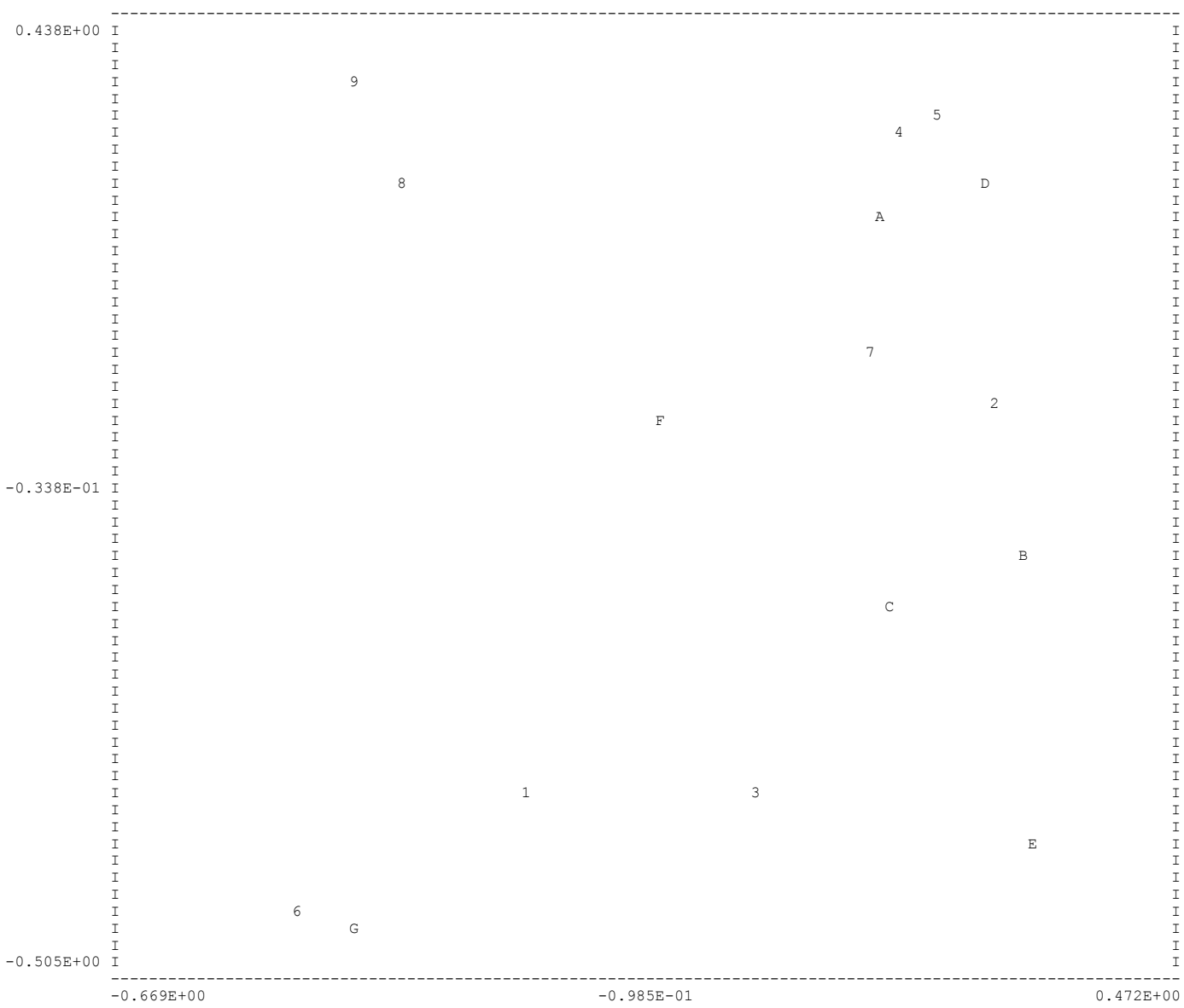
-0.259	-0.337
0.319	0.082
0.031	-0.335
0.139	0.320
0.195	0.363
-0.478	-0.427
0.142	0.133
-0.369	0.278
-0.395	0.431
0.150	0.286
0.268	-0.081
0.138	-0.171
0.238	0.293
0.358	-0.417
-0.078	0.033
-0.397	-0.450

CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.9923 SUM OF DISTANCE DIFFERENCES = 0.470952E+00

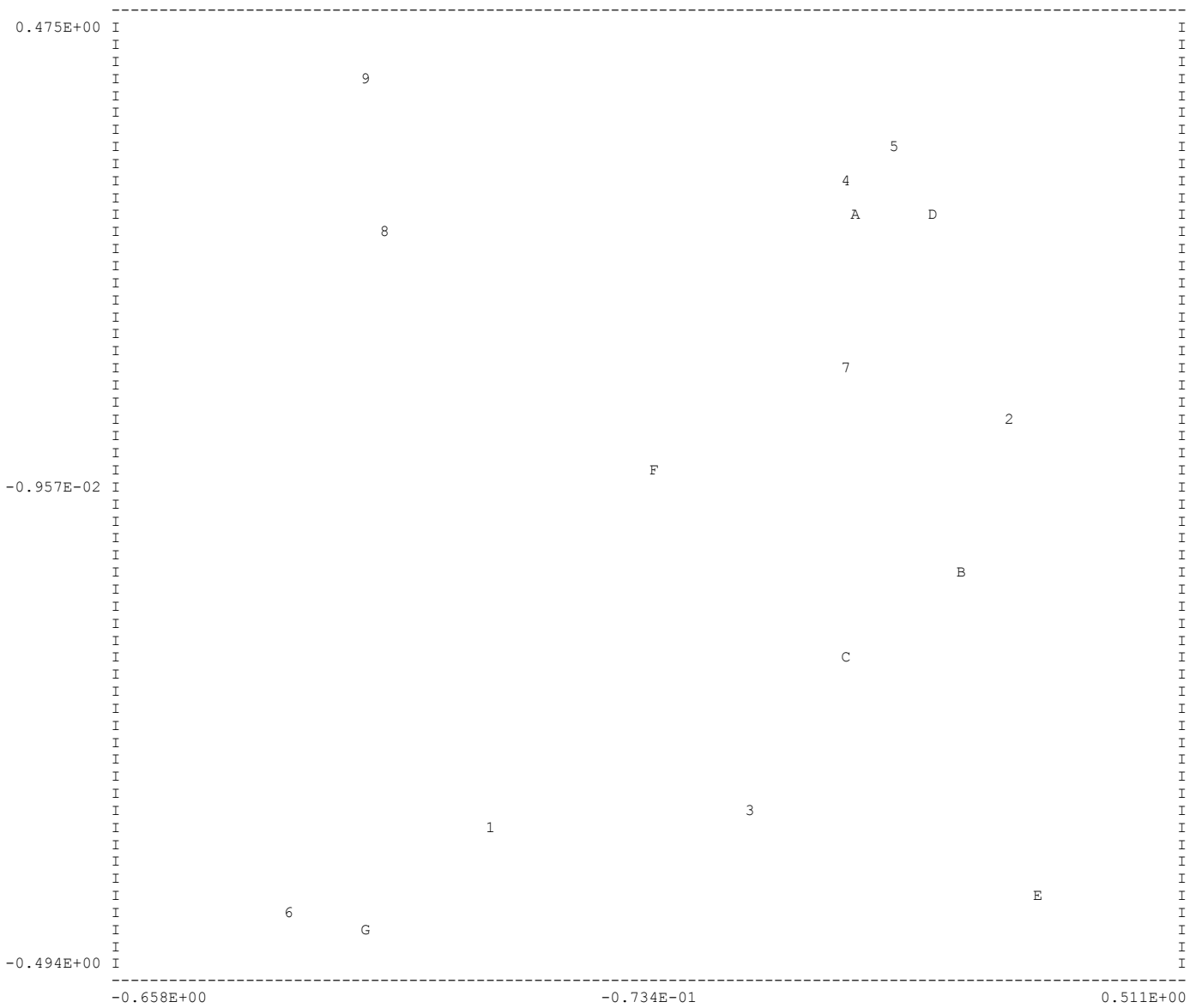
TRANSFORMED VARIANCES AND COVARIANCES

0.021	
0.013	0.035
0.003	

```
         0.003         0.006
         0.001
         0.002         0.003
         0.042
        -0.004         0.037


ADJUSTED FINAL VARIANCES AND COVARIANCES

         0.300
         0.000         0.184
         0.115
         0.000         0.120
         0.101
         0.000         0.115
         0.101
         0.000         0.115


CONTRIBUTIONS TO FINAL LOG LIKELIHOOD FUNCTION  (SUBJECT, OBJECT, OBJECT, LIKELIHOOD)

   1   2   1  -0.132E+01   1   3   1  -0.422E+00   1   3   2  -0.536E+01   1   4   1  -0.159E+01   1   4   2  -0.140E+01
   1   4   3  -0.195E+01   1   5   1  -0.147E+01   1   5   2  -0.112E+01   1   5   3  -0.122E+01   1   5   4  -0.239E+01
   1   6   1  -0.120E+00   1   6   2  -0.249E+01   1   6   3  -0.590E+00   1   6   4  -0.132E+01   1   6   5  -0.186E+01
   1   7   1  -0.123E+01   1   7   2  -0.986E+00   1   7   3  -0.153E+01   1   7   4  -0.146E+01   1   7   5  -0.122E+01
   1   7   6  -0.161E+01   1   8   1  -0.772E+01   1   8   2  -0.128E+01   1   8   3  -0.720E+00   1   8   4  -0.117E+01
   1   8   5  -0.127E+01   1   8   6  -0.331E+00   1   8   7  -0.163E+01   1   9   1  -0.756E+00   1   9   2  -0.771E+00
   1   9   3  -0.443E+00   1   9   4  -0.498E+01   1   9   5  -0.276E+01   1   9   6  -0.385E+00   1   9   7  -0.101E+01
   1   9   8  -0.358E+01   1  10   1  -0.105E+02   1  10   2  -0.201E+01   1  10   3  -0.174E+01   1  10   4  -0.156E+01
   1  10   5  -0.416E+01   1  10   6  -0.437E+01   1  10   7  -0.147E+01   1  10   8  -0.220E+01   1  10   9  -0.181E+01
   1  11   1  -0.128E+01   1  11   2  -0.116E+01   1  11   3  -0.235E+01   1  11   4  -0.129E+01   1  11   5  -0.126E+01
   1  11   6  -0.242E+01   1  11   7  -0.104E+01   1  11   8  -0.103E+01   1  11   9  -0.174E+01   1  11  10  -0.107E+01
   1  12   1  -0.843E+00   1  12   2  -0.749E+00   1  12   3  -0.739E+00   1  12   4  -0.273E+01   1  12   5  -0.238E+01
   1  12   6  -0.667E+00   1  12   7  -0.125E+01   1  12   8  -0.297E+01   1  12   9  -0.251E+01   1  12  10  -0.272E+01
   1  12  11  -0.276E+01

                ----------------- omitted data ------------------------------------------------------

 246   2   1  -0.167E+01 246   3   1  -0.975E+00 246   3   2  -0.180E+01 246   4   1  -0.306E+01 246   4   2  -0.922E+00
 246   4   3  -0.586E+01 246   5   1  -0.178E+01 246   5   2  -0.605E+00 246   5   3  -0.134E+01 246   5   4  -0.318E+01
 246   6   1  -0.111E+01 246   6   2  -0.126E+01 246   6   3  -0.139E+01 246   6   4  -0.758E+00 246   6   5  -0.181E+01
 246   7   1  -0.366E+00 246   7   2  -0.193E+01 246   7   3  -0.282E+01 246   7   4  -0.752E+01 246   7   5  -0.371E+00
 246   7   6  -0.260E+00 246   8   1  -0.322E+00 246   8   2  -0.178E+01 246   8   3  -0.979E+00 246   8   4  -0.441E+00
 246   8   5  -0.120E+01 246   8   6  -0.279E+00 246   8   7  -0.957E+00 246   9   1  -0.473E+00 246   9   2  -0.229E+01
 246   9   3  -0.997E+00 246   9   4  -0.191E+00 246   9   5  -0.193E+01 246   9   6  -0.256E+01 246   9   7  -0.750E+00
 246   9   8   0.507E-01 246  10   1  -0.142E+01 246  10   2  -0.105E+01 246  10   3  -0.300E+01 246  10   4  -0.198E+01
 246  10   5  -0.275E-01 246  10   6  -0.110E+00 246  10   7  -0.112E+01 246  10   8  -0.331E+00 246  10   9  -0.143E+00
 246  11   1  -0.242E+01 246  11   2  -0.135E+01 246  11   3  -0.150E+01 246  11   4  -0.127E+01 246  11   5  -0.951E+00
 246  11   6  -0.250E+01 246  11   7  -0.153E+01 246  11   8  -0.143E+01 246  11   9  -0.291E+01 246  11  10  -0.102E+01
 246  12   1  -0.240E+01 246  12   2  -0.359E+01 246  12   3  -0.226E+01 246  12   4  -0.312E+01 246  12   5  -0.119E+01
 246  12   6  -0.105E+01 246  12   7  -0.797E+00 246  12   8  -0.205E+01 246  12   9  -0.206E+01 246  12  10  -0.208E+01
 246  12  11  -0.836E+00
 247   2   1  -0.929E+00 247   3   1  -0.341E+01 247   3   2  -0.122E+01 247   4   1  -0.641E+01 247   4   2  -0.921E+00
 247   4   3  -0.922E+00 247   5   1  -0.257E+01 247   5   2  -0.387E+01 247   5   3  -0.933E+00 247   5   4  -0.364E+01
 247   6   1  -0.752E+00 247   6   2  -0.168E+01 247   6   3  -0.828E+00 247   6   4  -0.230E+01 247   6   5  -0.998E+00
 247   7   1  -0.198E+01 247   7   2  -0.132E+01 247   7   3  -0.115E+01 247   7   4  -0.423E+01 247   7   5  -0.160E+01
 247   7   6  -0.571E+01 247   8   1  -0.138E+01 247   8   2  -0.116E+01 247   8   3  -0.163E+01 247   8   4  -0.147E+01
 247   8   5  -0.957E+00 247   8   6  -0.899E+00 247   8   7  -0.315E+01 247   9   1  -0.653E+00 247   9   2  -0.649E+00
 247   9   3  -0.190E+01 247   9   4  -0.224E+01 247   9   5  -0.622E+00 247   9   6  -0.369E+01 247   9   7  -0.105E+01
 247   9   8  -0.551E+00 247  10   1  -0.190E+01 247  10   2  -0.140E+01 247  10   3  -0.131E+01 247  10   4  -0.257E+01
 247  10   5  -0.934E+00 247  10   6  -0.789E+00 247  10   7  -0.646E+01 247  10   8  -0.803E+00 247  10   9  -0.452E+01
 247  11   1  -0.105E+01 247  11   2  -0.126E+01 247  11   3  -0.869E+00 247  11   4  -0.974E+00 247  11   5  -0.895E+00
 247  11   6  -0.485E+01 247  11   7  -0.165E+01 247  11   8  -0.926E+00 247  11   9  -0.210E+01 247  11  10  -0.110E+01
 247  12   1  -0.111E+01 247  12   2  -0.839E+00 247  12   3  -0.136E+01 247  12   4  -0.147E+01 247  12   5  -0.114E+01
 247  12   6  -0.725E+00 247  12   7  -0.928E+00 247  12   8  -0.872E+00 247  12   9  -0.120E+01 247  12  10  -0.113E+01
 247  12  11  -0.352E+01
 248   2   1  -0.143E+01 248   3   1  -0.543E+01 248   3   2  -0.890E+00 248   4   1  -0.439E+01 248   4   2  -0.644E+00
 248   4   3  -0.196E+01 248   5   1  -0.185E+01 248   5   2  -0.248E+00 248   5   3  -0.397E+01 248   5   4  -0.274E+00
 248   6   1  -0.531E+01 248   6   2  -0.218E+01 248   6   3  -0.101E+01 248   6   4  -0.439E+01 248   6   5  -0.192E+01
 248   7   1  -0.104E+01 248   7   2  -0.358E+00 248   7   3  -0.404E+01 248   7   4  -0.629E+00 248   7   5  -0.165E-01
 248   7   6  -0.422E+01 248   8   1  -0.120E+01 248   8   2  -0.210E+00 248   8   3  -0.527E+00 248   8   4  -0.244E+00
 248   8   5  -0.105E+00 248   8   6  -0.209E+01 248   8   7  -0.235E+00 248   9   1  -0.135E+01 248   9   2  -0.753E+00
 248   9   3  -0.652E+00 248   9   4  -0.307E+00 248   9   5  -0.104E+01 248   9   6  -0.177E+01 248   9   7   0.106E+00
 248   9   8  -0.158E+00 248  10   1  -0.132E+01 248  10   2  -0.744E+00 248  10   3  -0.637E+00 248  10   4  -0.247E+01
 248  10   5  -0.428E-01 248  10   6  -0.207E+01 248  10   7  -0.351E+00 248  10   8  -0.618E+00 248  10   9  -0.129E+01
 248  11   1  -0.191E+01 248  11   2  -0.862E+00 248  11   3  -0.531E+00 248  11   4  -0.972E+00 248  11   5  -0.399E+00
 248  11   6  -0.131E+01 248  11   7  -0.162E+00 248  11   8  -0.248E+01 248  11   9  -0.148E+01 248  11  10  -0.853E-01
 248  12   1  -0.110E+01 248  12   2  -0.544E+00 248  12   3  -0.516E+00 248  12   4  -0.477E+00 248  12   5  -0.125E+01
 248  12   6  -0.111E+01 248  12   7  -0.190E+00 248  12   8  -0.143E+01 248  12   9  -0.543E+00 248  12  10  -0.552E+00
 248  12  11  -0.494E+00
```

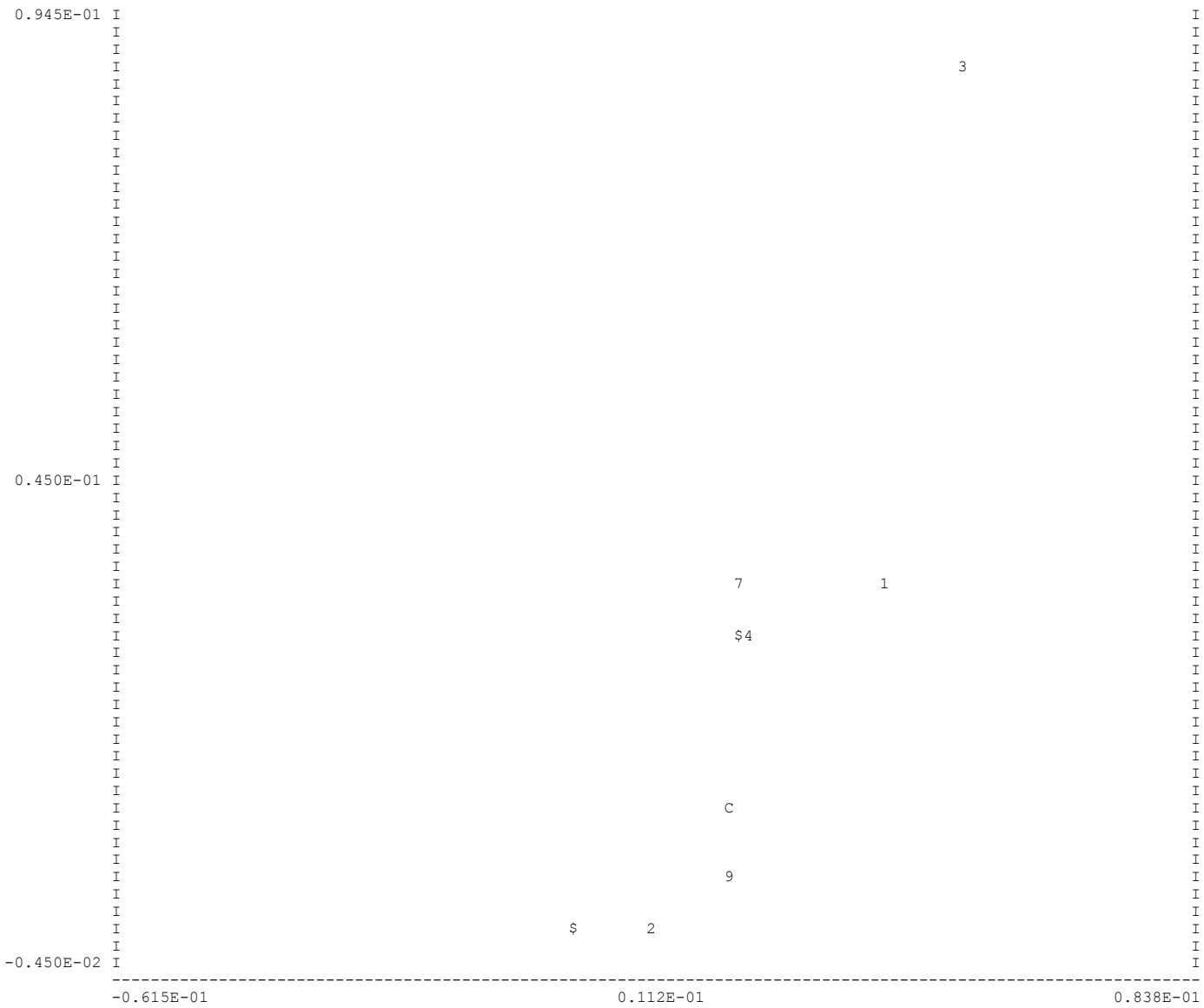

TARGET CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.
0.438E+00
-0.338E-01
-0.505E+00
-0.669E+00
-0.985E-01
0.472E+00
9
5
4
8
D
A
7
2
F
B
C
1
3
E
6
G

TRANSFORMED / ESTIMATED CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



PRODUCT MOMENT CORRELATION OF TARGET AND FINAL TRANSFORMED STIMULUS VARIANCES = 0.8902

TARGET VARIANCES ON Y AXIS FINAL TRANSFORMED VARIANCES ON X AXIS



ESTIMATED TRUE AND EXPECTED DISTANCES

OBJECTS		TRUE	EXPECTED
2	1	0.162268E+01	0.169063E+01
3	1	0.660009E+00	0.915311E+00
3	2	0.115125E+01	0.124374E+01
4	1	0.174580E+01	0.179253E+01
4	2	0.677901E+00	0.932548E+00
4	3	0.150822E+01	0.158085E+01
5	1	0.189559E+01	0.191668E+01
5	2	0.696907E+00	0.840619E+00
5	3	0.162821E+01	0.165927E+01
5	4	0.160060E+00	0.526348E+00
6	1	0.537110E+00	0.709876E+00
6	2	0.214841E+01	0.217587E+01
6	3	0.117555E+01	0.125656E+01
6	4	0.220102E+01	0.221980E+01
6	5	0.235714E+01	0.235977E+01
7	1	0.140341E+01	0.143643E+01
7	2	0.419088E+00	0.644967E+00
7	3	0.109205E+01	0.114575E+01
7	4	0.425417E+00	0.638909E+00
7	5	0.536157E+00	0.559730E+00
7	6	0.189704E+01	0.190139E+01
8	1	0.141902E+01	0.147753E+01
8	2	0.162505E+01	0.169914E+01
8	3	0.166278E+01	0.172968E+01
8	4	0.115807E+01	0.124545E+01

8	5	0.129594E+01	0.131537E+01
8	6	0.161996E+01	0.162621E+01
8	7	0.120596E+01	0.123481E+01
9	1	0.177201E+01	0.181498E+01
9	2	0.180658E+01	0.187246E+01
9	3	0.199193E+01	0.204273E+01
9	4	0.124039E+01	0.132877E+01
9	5	0.135090E+01	0.137016E+01
9	6	0.195766E+01	0.196171E+01
9	7	0.139584E+01	0.141751E+01
9	8	0.352993E+00	0.407938E+00
10	1	0.169411E+01	0.171649E+01
10	2	0.601025E+00	0.765074E+00
10	3	0.143648E+01	0.147200E+01
10	4	0.817131E-01	0.496601E+00
10	5	0.201745E+00	0.280913E+00
10	6	0.215890E+01	0.216058E+01
10	7	0.348451E+00	0.393267E+00
10	8	0.118015E+01	0.119986E+01
10	9	0.128344E+01	0.130057E+01
11	1	0.133163E+01	0.138331E+01
11	2	0.387579E+00	0.604014E+00
11	3	0.789147E+00	0.868045E+00
11	4	0.956167E+00	0.105089E+01
11	5	0.102062E+01	0.103556E+01
11	6	0.186797E+01	0.187434E+01
11	7	0.563247E+00	0.605711E+00
11	8	0.166004E+01	0.167837E+01
11	9	0.190308E+01	0.191544E+01
11	10	0.874460E+00	0.890656E+00
12	1	0.977189E+00	0.105719E+01
12	2	0.708097E+00	0.799504E+00
12	3	0.443426E+00	0.630210E+00
12	4	0.111649E+01	0.117771E+01
12	5	0.122035E+01	0.122694E+01
12	6	0.151429E+01	0.152298E+01
12	7	0.691169E+00	0.708201E+00
12	8	0.153819E+01	0.155735E+01
12	9	0.182747E+01	0.183935E+01
12	10	0.103940E+01	0.104544E+01
12	11	0.360430E+00	0.384196E+00
13	1	0.182357E+01	0.191167E+01
13	2	0.513887E+00	0.875573E+00
13	3	0.150228E+01	0.161367E+01
13	4	0.232480E+00	0.770553E+00
13	5	0.185290E+00	0.618600E+00
13	6	0.230654E+01	0.235783E+01
13	7	0.424681E+00	0.709967E+00
13	8	0.137884E+01	0.146250E+01
13	9	0.147250E+01	0.154498E+01
13	10	0.199066E+00	0.609923E+00
13	11	0.851976E+00	0.991992E+00
13	12	0.107963E+01	0.118938E+01
14	1	0.141364E+01	0.155293E+01
14	2	0.113732E+01	0.130089E+01
14	3	0.764983E+00	0.102724E+01
14	4	0.174676E+01	0.185175E+01
14	5	0.180956E+01	0.187340E+01
14	6	0.189895E+01	0.195835E+01
14	7	0.134221E+01	0.142893E+01
14	8	0.228430E+01	0.233242E+01
14	9	0.257688E+01	0.261705E+01
14	10	0.166510E+01	0.173130E+01
14	11	0.791123E+00	0.941679E+00
14	12	0.749417E+00	0.906406E+00
14	13	0.163636E+01	0.176952E+01
15	1	0.936330E+00	0.113435E+01
15	2	0.908049E+00	0.112496E+01
15	3	0.871515E+00	0.109644E+01
15	4	0.817321E+00	0.104962E+01
15	5	0.972352E+00	0.110016E+01
15	6	0.138497E+01	0.147217E+01
15	7	0.547546E+00	0.778049E+00
15	8	0.864762E+00	0.100477E+01
15	9	0.115739E+01	0.125249E+01
15	10	0.774002E+00	0.931698E+00
15	11	0.825956E+00	0.965956E+00
15	12	0.674112E+00	0.850602E+00
15	13	0.929058E+00	0.118101E+01
15	14	0.142237E+01	0.156537E+01
16	1	0.405554E+00	0.825105E+00
16	2	0.202767E+01	0.210878E+01
16	3	0.100830E+01	0.119951E+01
16	4	0.213247E+01	0.220611E+01
16	5	0.228531E+01	0.233729E+01
16	6	0.190681E+00	0.619819E+00
16	7	0.180398E+01	0.187005E+01
16	8	0.165522E+01	0.172651E+01
16	9	0.200174E+01	0.205817E+01
16	10	0.208473E+01	0.214040E+01
16	11	0.172873E+01	0.179443E+01
16	12	0.137066E+01	0.145430E+01

```
16 13    0.222135E+01    0.232508E+01
16 14    0.171732E+01    0.183719E+01
16 15    0.131611E+01    0.149442E+01

                                        ELAPSED MINUTES =         3
```

Example 4: Input

```
INITIAL DATA
TITLE
Project1
DATATP   7.0
NSTIM    8.0
NSUB     3.0
NSETS    58.0
NDIM     2.0
METRIC   1.0
TCOR     1.0
TSIG     1.0
TMES     2.0
INITIAL  2.0
ITMAX    40.0
SAMPLE   1.0
DISTRIB  1.0
NACT     22.0
NSIG     2.0
NOPT     0.0
STAND    2.0
FIXED    3.0
NMMP     0.0
NPROX    10.0
NFMAX    4000.0
NCHC     48.0
MIXTURE  1.0
DOOVER   1.0
SIMDIS   1.0
ALGOR    1.0
MODELA   2.0
MODELB   2.0
QPDF     2.0
NTRAC    -1.0
UMLMIN   0.00010
UINMIN   0.010
ENDIN


TARGET DATA
-1  1
 0  1
 1  1
-1  0
 1  0
-1 -1
 0 -1
 1 -1
-0.75  0.75
 0.75  0
-0.75 -0.75
 0.001
 0.090
 1 2 1 2 2 1 2 1 2 2 2
 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 1 1 1 1 1
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22


DISTANCE DATA
   1.1421
   2.0233  1.0834
   0.9277  1.7013  2.1084
   2.1962  1.5539  0.8305  2.2717
   1.9868  2.1794  2.8220  1.2316  2.2800
   2.5526  1.9682  2.0792  1.2664  0.9841  1.1436
   2.8412  2.3695  2.0577  1.6958  0.8112  2.0031  1.0850

    9 additional sets of disproximity judgments
   47 additional sets of binary choice judgments

   0.0000
   0.0000  0.0000
   1.0000  1.0000  1.0000
   0.0000  0.0000  1.0000  0.0000
   1.0000  1.0000  1.0000  1.0000  1.0000
   1.0000  1.0000  1.0000  0.0000  1.0000  0.0000
   0.0000  0.0000  0.0000  0.0000  1.0000  0.0000  0.0000
```

Example 4: Output

PROSCAL

Project1

DATE 2006:05:03
TIME 12:00:21.698

NUMBER OF STIMULI	8		
NUMBER OF ACTIVE COORD.	22	UMLMIN	0.00010
NUMBER OF DIMENSIONS	2	UINMIN	0.01000
NUMBER OF VARIANCES	2	ZMIN	0.00000
NUMBER OF IDEAL OBJECTS	58	NFMAX	4000
NUMBER OF DATA SETS	2	NTRAC	-1
NUMBER OF CHOICE SETS	48		
NUMBER OF ML ITERATIONS	40		
NUMBER OF DISTANCE SETS	10		
TRANSFORMATION INDEX	0		
OPTIMIZATION LEVEL	0		
TARGET COORD. OPTION	TARG		
TARGET VARIANCE OPT.	TARG		
TARGET MEAS PARAM OPT.	TRNO		
STANDARDIZATION OPT.	STNO		
INITIALIZATION OPTION	COMP		
DATA TYPE OPTION	PRBR		
DISTRIBUTION OPTION	CHIF		
FIXED POINT OPTION	FXNO		
SAMPLING	INDP		
METRIC OPTION	ECLD		
MIXTURE OPTION	EMMM		
REANALYSIS OPTION	REDO		
PROXIMITIES OPTION	NOSI		

TARGET CONFIGURATION

-1.000	1.000
0.000	1.000
1.000	1.000
-1.000	0.000
1.000	0.000
-1.000	-1.000
0.000	-1.000
1.000	-1.000
-0.750	0.750
0.750	0.000
-0.750	-0.750

TARGET VARIANCES

0.001
0.090

VARIANCE SET MEMBERSHIP

OBJECTS	1	2	3	4	5	6	7	8	9	10	11
SET	1	2	1	2	2	1	2	1	2	2	2

SUBJECT SET MEMBERSHIP

SUBJECT	SET
1	1
2	2
3	3
4	1
5	2
6	3
7	1
8	2
9	3
10	1
11	2
12	3
13	1
14	2
15	3
16	1
17	2

```
    18        3
    19        1
    20        2
    21        3
    22        1
    23        2
    24        3
    25        1
    26        1
    27        1
    28        1
    29        1
    30        1
    31        1
    32        1
    33        1
    34        1
    35        1
    36        1
    37        1
    38        1
    39        1
    40        1
    41        1
    42        1
    43        1
    44        1
    45        1
    46        1
    47        1
    48        1
```

SUMMARY FREQUENCY MATRICES

```
  13.0
   9.0   6.0
  17.0  17.0  23.0
  12.0  12.0  20.0  10.0
   9.0  11.0  18.0   9.0  19.0
  14.0  11.0  19.0  11.0  14.0  14.0
  12.0   6.0  11.0   7.0   5.0   9.0   8.0
   7.0
   8.0   7.0
   4.0   1.0   0.0
   8.0   7.0   6.0   8.0
   4.0   1.0   0.0   2.0   0.0
   7.0   6.0   4.0   7.0   0.0   7.0
   8.0   5.0   5.0   7.0   2.0   8.0   5.0
   1.0
   0.0   0.0
   8.0   7.0   8.0
   3.0   5.0   6.0   0.0
   8.0   7.0   8.0   5.0   8.0
   8.0   8.0   8.0   4.0   6.0   2.0
   2.0   7.0   8.0   1.0   4.0   0.0   0.0
```

SAMPLE SIZES FOR SUMMARY FREQUENCY MATRICES

```
  32.0
  32.0  32.0
  32.0  32.0  32.0
  32.0  32.0  32.0  32.0
  32.0  32.0  32.0  32.0  32.0
  32.0  32.0  32.0  32.0  32.0  32.0
  32.0  32.0  32.0  32.0  32.0  32.0  32.0
   8.0
   8.0   8.0
   8.0   8.0   8.0
   8.0   8.0   8.0   8.0
   8.0   8.0   8.0   8.0   8.0
   8.0   8.0   8.0   8.0   8.0   8.0
   8.0   8.0   8.0   8.0   8.0   8.0   8.0
   8.0
   8.0   8.0
   8.0   8.0   8.0
   8.0   8.0   8.0   8.0
   8.0   8.0   8.0   8.0   8.0
   8.0   8.0   8.0   8.0   8.0   8.0
   8.0   8.0   8.0   8.0   8.0   8.0   8.0
```

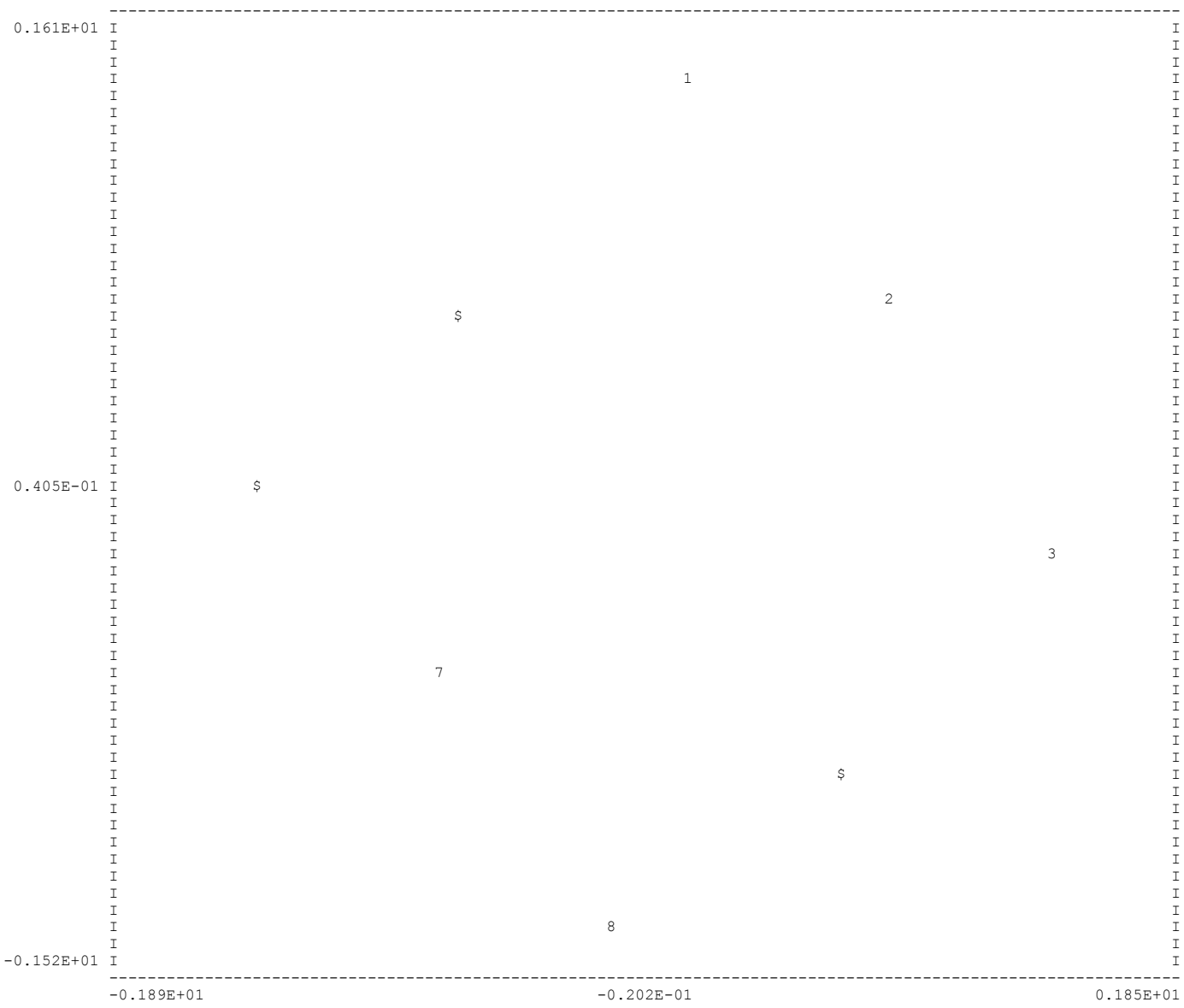
ISCALE FOR IDEAL OBJECT   1

```
   0.119   0.060   0.677   0.010   0.367   0.437   0.428   0.964
```

ISCALE FOR IDEAL OBJECT   2

```
   1.952   1.070   0.495   1.820   0.010   2.037   0.805   0.527

ISCALE FOR IDEAL OBJECT   3

   1.161   1.660   2.280   0.222   1.429   0.010   0.278   1.321


INITIAL CONFIGURATION

         0.115         1.463
         0.838         0.697
         1.431        -0.137
        -0.704         0.639
         0.676        -0.860
        -1.424         0.098
        -0.779        -0.517
        -0.152        -1.383
        -0.704         0.639
         0.676        -0.860
        -1.424         0.098


INITIAL STANDARD DEVIATIONS - ALL OBJECTS

         2.073
         1.946
         1.899
         0.893
         0.995
         2.735
         0.010
         2.402
         2.263
         2.409
         0.010


MEAN OF STANDARD DEVIATIONS           1.603
```

INITIAL CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



INITIAL VARIANCES - ACTIVE VARIABLES

```
        5.187
        1.483
```

INITIAL MEASUREMENT CONSTANTS 0.0000 1.0000 1.0000

TRANSFORMED CONFIGURATION

```
       -0.872         1.123
        0.130         1.136
        1.096         1.012
       -0.824         0.019
        1.115         0.018
       -0.910        -0.834
       -0.064        -0.779
        0.946        -0.899
       -0.824         0.019
        1.115         0.018
       -0.910        -0.834
```

CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.8871 SUM OF DISTANCE DIFFERENCES = 0.234433E+01

```
TRANSFORMED VARIANCES
         4.697
         1.343


INITIAL LOG LIKELIHOOD VALUE                 -0.13697194E+04


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.431  -0.704   0.676  -1.424  -0.779  -0.152  -0.704   0.676
 -1.424   1.463   0.697  -0.137   0.639  -0.860   0.098  -0.517  -1.383   0.639
 -0.860   0.098   5.187   1.483

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.875722E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.431  -0.704   0.676  -1.424  -0.779  -0.152  -0.704   0.676
 -1.424   1.463   0.697  -0.137   0.639  -0.860   0.098  -0.517  -1.383   0.639
 -0.860   0.098   0.002   0.372

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.763793E+03


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.403  -0.670   0.569  -1.424  -0.704  -0.153  -0.047   1.561
 -6.556   1.463   0.613  -0.081   0.621  -0.683   0.181  -0.524  -1.353   0.503
 -1.981   0.939   0.002   0.372

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.714579E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.403  -0.670   0.569  -1.424  -0.704  -0.153  -0.047   1.561
 -6.556   1.463   0.613  -0.081   0.621  -0.683   0.181  -0.524  -1.353   0.503
 -1.981   0.939   0.001   0.181

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.696870E+03


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.427  -0.726   0.614  -1.401  -0.753  -0.108  -0.015   0.737
 -3.575   1.463   0.704  -0.060   0.694  -0.712   0.156  -0.576  -1.357   0.351
 -0.841   0.481   0.001   0.181

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.687753E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.427  -0.726   0.614  -1.401  -0.753  -0.108  -0.015   0.737
 -3.575   1.463   0.704  -0.060   0.694  -0.712   0.156  -0.576  -1.357   0.351
 -0.841   0.481   0.001   0.132

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.678684E+03


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.435  -0.739   0.679  -1.395  -0.751  -0.094  -0.001   0.619
 -0.983   1.463   0.748  -0.051   0.727  -0.728   0.149  -0.602  -1.356   0.301
 -0.669   0.150   0.001   0.132

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.674812E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.435  -0.739   0.679  -1.395  -0.751  -0.094  -0.001   0.619
 -0.983   1.463   0.748  -0.051   0.727  -0.728   0.149  -0.602  -1.356   0.301
 -0.669   0.150   0.001   0.108

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.673170E+03


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.438  -0.752   0.697  -1.392  -0.765  -0.087   0.003   0.551
 -0.883   1.463   0.770  -0.048   0.749  -0.743   0.147  -0.618  -1.355   0.275
 -0.580   0.136   0.001   0.108

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.672421E+03
```

```
ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.438  -0.752   0.697  -1.392  -0.765  -0.087   0.003   0.551
 -0.883   1.463   0.770  -0.048   0.749  -0.743   0.147  -0.618  -1.355   0.275
 -0.580   0.136   0.001   0.099

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.672117E+03


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.437  -0.758   0.703  -1.392  -0.773  -0.087   0.004   0.523
 -0.844   1.463   0.779  -0.048   0.758  -0.749   0.147  -0.623  -1.355   0.265
 -0.547   0.132   0.001   0.099

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.671990E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.437  -0.758   0.703  -1.392  -0.773  -0.087   0.004   0.523
 -0.844   1.463   0.779  -0.048   0.758  -0.749   0.147  -0.623  -1.355   0.265
 -0.547   0.132   0.001   0.096

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.671940E+03


ESTIMATE VALUES ENTERING LAST PHASE

  0.115   0.838   1.437  -0.760   0.705  -1.392  -0.776  -0.087   0.004   0.512
 -0.829   1.463   0.782  -0.048   0.761  -0.752   0.147  -0.625  -1.355   0.261
 -0.534   0.130   0.001   0.096


FINAL LOG LIKELIHOOD VALUE      -0.671907E+03

NUMBER OF FREE PARAMETERS        20
NUMBER OF JUDGMENTS             364
CAIC                  0.148176E+04
BIC                   0.146176E+04


FUNCTION EVALUATIONS =   3062       CONSTRAINT EVALUATIONS =      0


FINAL CONFIGURATION

         0.115         1.463
         0.838         0.784
         1.437        -0.047
        -0.761         0.763
         0.707        -0.754
        -1.392         0.147
        -0.778        -0.627
        -0.087        -1.355
         0.005         0.258
         0.506        -0.526
        -0.819         0.129


FINAL VARIANCES

         0.001
         0.094


TRANSFORMED CONFIGURATION

       -1.025         1.088
       -0.005         1.187
        1.048         1.084
       -1.080        -0.068
        1.097         0.036
       -1.032        -0.978
       -0.013        -1.029
        1.022        -0.990
       -0.166         0.181
        0.784         0.035
       -0.628        -0.546


CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.9021     SUM OF DISTANCE DIFFERENCES =   0.188850E+01


TRANSFORMED VARIANCES
         0.001
         0.100
```

EM ANALYSIS

ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

```
  0.115   0.838   1.437  -0.761   0.707  -1.392  -0.778  -0.087   0.005   0.506
 -0.819   1.463   0.784  -0.047   0.763  -0.754   0.147  -0.627  -1.355   0.258
 -0.526   0.129   0.001   0.094
```

LOG LIKELIHOOD VALUE AT END OF PHASE -0.471711E+03

ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

```
  0.115   0.838   1.437  -0.761   0.707  -1.392  -0.778  -0.087   0.005   0.506
 -0.819   1.463   0.784  -0.047   0.763  -0.754   0.147  -0.627  -1.355   0.258
 -0.526   0.129   0.001   0.073
```

LOG LIKELIHOOD VALUE AT END OF PHASE -0.378995E+03

ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

```
  0.115   0.838   1.437  -0.704   0.707  -1.392  -0.740  -0.088   0.005   0.506
 -0.764   1.463   0.732  -0.047   0.763  -0.705   0.147  -0.627  -1.358   0.961
 -0.428   0.129   0.001   0.073
```

LOG LIKELIHOOD VALUE AT END OF PHASE -0.378866E+03

ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

```
  0.115   0.838   1.437  -0.704   0.707  -1.392  -0.740  -0.088   0.005   0.506
 -0.764   1.463   0.732  -0.047   0.763  -0.705   0.147  -0.627  -1.358   0.961
 -0.428   0.129   0.001   0.076
```

LOG LIKELIHOOD VALUE AT END OF PHASE -0.377801E+03

ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

```
  0.115   0.838   1.437  -0.705   0.692  -1.394  -0.740  -0.088   0.019   0.524
 -0.789   1.463   0.735  -0.047   0.763  -0.705   0.147  -0.586  -1.358   1.010
 -0.444   0.140   0.001   0.076
```

LOG LIKELIHOOD VALUE AT END OF PHASE -0.377694E+03

ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

```
  0.115   0.838   1.437  -0.705   0.692  -1.394  -0.740  -0.088   0.019   0.524
 -0.789   1.463   0.735  -0.047   0.763  -0.705   0.147  -0.586  -1.358   1.010
 -0.444   0.140   0.001   0.078
```

LOG LIKELIHOOD VALUE AT END OF PHASE -0.377536E+03

ESTIMATE VALUES ENTERING LAST PHASE

```
  0.115   0.838   1.437  -0.695   0.692  -1.394  -0.740  -0.088   0.019   0.533
 -0.801   1.463   0.735  -0.047   0.765  -0.705   0.147  -0.576  -1.358   1.022
 -0.463   0.140   0.001   0.078
```

FINAL LOG LIKELIHOOD VALUE - EM CYCLE 1 -0.377525E+03

```
NUMBER OF FREE PARAMETERS   22
NUMBER OF JUDGMENTS        364
CAIC                0.906787E+03
BIC                 0.884787E+03
```

ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

```
  0.115   0.838   1.437  -0.695   0.692  -1.394  -0.740  -0.088   0.019   0.533
 -0.801   1.463   0.735  -0.047   0.765  -0.699   0.147  -0.576  -1.358   1.022
 -0.463   0.140   0.001   0.078
```

LOG LIKELIHOOD VALUE AT END OF PHASE -0.377458E+03

ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

```
  0.115   0.838   1.437  -0.695   0.692  -1.394  -0.740  -0.088   0.019   0.533
 -0.801   1.463   0.735  -0.047   0.765  -0.699   0.147  -0.576  -1.358   1.022
 -0.463   0.140   0.001   0.079

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.377448E+03


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.437  -0.695   0.692  -1.394  -0.740  -0.088   0.019   0.533
 -0.809   1.463   0.735  -0.047   0.765  -0.699   0.147  -0.576  -1.358   1.029
 -0.463   0.140   0.001   0.079

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.377447E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.437  -0.695   0.692  -1.394  -0.740  -0.088   0.019   0.533
 -0.809   1.463   0.735  -0.047   0.765  -0.699   0.147  -0.576  -1.358   1.029
 -0.463   0.140   0.001   0.080

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.377430E+03


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.437  -0.695   0.688  -1.394  -0.740  -0.088   0.019   0.538
 -0.809   1.463   0.729  -0.047   0.765  -0.699   0.147  -0.576  -1.358   1.029
 -0.463   0.140   0.001   0.080

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.377430E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.437  -0.695   0.688  -1.394  -0.740  -0.088   0.019   0.538
 -0.809   1.463   0.729  -0.047   0.765  -0.699   0.147  -0.576  -1.358   1.029
 -0.463   0.140   0.001   0.080

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.377421E+03


ESTIMATE VALUES ENTERING LAST PHASE

  0.115   0.838   1.437  -0.695   0.688  -1.394  -0.740  -0.088   0.019   0.538
 -0.809   1.463   0.730  -0.047   0.765  -0.699   0.147  -0.576  -1.358   1.029
 -0.469   0.140   0.001   0.080


FINAL LOG LIKELIHOOD VALUE - EM CYCLE   2      -0.377414E+03

NUMBER OF FREE PARAMETERS   22
NUMBER OF JUDGMENTS       364
CAIC                 0.906566E+03
BIC                  0.884566E+03


POSTERIOR PROBABILITIES OF SEGMENT MEMBERSHIP

  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
```

```
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
  1.0000  0.0000  0.0000
  0.0000  1.0000  0.0000
  0.0000  0.0000  1.0000
```

RENUMBERED SUBJECT SET MEMBERSHIP
USED FOR REANALYSIS

SUBJECT	SET
1	1
2	2
3	3
4	1
5	2
6	3
7	1
8	2
9	3
10	1
11	2
12	3
13	1
14	2
15	3
16	1
17	2
18	3
19	1
20	2
21	3
22	1
23	2
24	3
25	1
26	2
27	3
28	1
29	2
30	3
31	1
32	2
33	3
34	1
35	2
36	3
37	1
38	2
39	3
40	1
41	2
42	3
43	1
44	2
45	3
46	1
47	2
48	3

FINAL POSTERIOR CONFIGURATION

```
         0.115         1.463
         0.838         0.730
         1.437        -0.047
        -0.691         0.765
         0.688        -0.699
        -1.394         0.147
        -0.740        -0.576
        -0.088        -1.358
         0.019         1.029
         0.541        -0.469
```

-0.813 0.140

FINAL POSTERIOR VARIANCES

0.001
0.080

*** WARNING *** THE NEW SEGMENT ASSIGNMENTS MAY NOT BE CONGRUENT WITH THE TARGET ASSIGNMENTS.

TRANSFORMED CONFIGURATION

-0.953	1.008
0.091	1.066
1.085	0.999
-0.964	-0.074
1.078	-0.009
-0.966	-1.025
0.024	-1.014
1.058	-1.043
-0.687	0.644
0.803	0.034
-0.570	-0.587

CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.9901   SUM OF DISTANCE DIFFERENCES = 0.677305E+00

TRANSFORMED VARIANCES

0.001
0.082

REANALYSIS

SUMMARY FREQUENCY MATRICES

2.0						
0.0	0.0					
5.0	9.0	15.0				
0.0	2.0	7.0	1.0			
0.0	3.0	10.0	1.0	11.0		
0.0	0.0	8.0	0.0	6.0	7.0	
0.0	0.0	0.0	0.0	0.0	1.0	1.0
14.0						
16.0	12.0					
9.0	1.0	0.0				
16.0	15.0	12.0	16.0			
5.0	1.0	0.0	3.0	0.0		
14.0	9.0	7.0	15.0	0.0	12.0	
16.0	8.0	9.0	14.0	3.0	16.0	12.0
5.0						
1.0	1.0					
15.0	15.0	16.0				
7.0	7.0	13.0	1.0			
16.0	15.0	16.0	12.0	16.0		
15.0	16.0	16.0	7.0	14.0	4.0	
6.0	10.0	15.0	1.0	8.0	0.0	0.0

SAMPLE SIZES FOR SUMMARY FREQUENCY MATRICES

16.0						
16.0	16.0					
16.0	16.0	16.0				
16.0	16.0	16.0	16.0			
16.0	16.0	16.0	16.0	16.0		
16.0	16.0	16.0	16.0	16.0	16.0	
16.0	16.0	16.0	16.0	16.0	16.0	16.0
16.0						
16.0	16.0					
16.0	16.0	16.0				
16.0	16.0	16.0	16.0			
16.0	16.0	16.0	16.0	16.0		
16.0	16.0	16.0	16.0	16.0	16.0	
16.0	16.0	16.0	16.0	16.0	16.0	16.0
16.0						
16.0	16.0					
16.0	16.0	16.0				
16.0	16.0	16.0	16.0			
16.0	16.0	16.0	16.0	16.0		
16.0	16.0	16.0	16.0	16.0	16.0	
16.0	16.0	16.0	16.0	16.0	16.0	16.0

ISCALE FOR IDEAL OBJECT 1

0.010 0.589 1.824 0.380 1.756 1.602 1.945 2.927

ISCALE FOR IDEAL OBJECT 2

2.273 1.097 0.630 2.191 0.010 2.475 1.226 0.726

ISCALE FOR IDEAL OBJECT 3

1.606 1.808 2.686 0.366 1.799 0.010 0.372 1.767

INITIAL CONFIGURATION

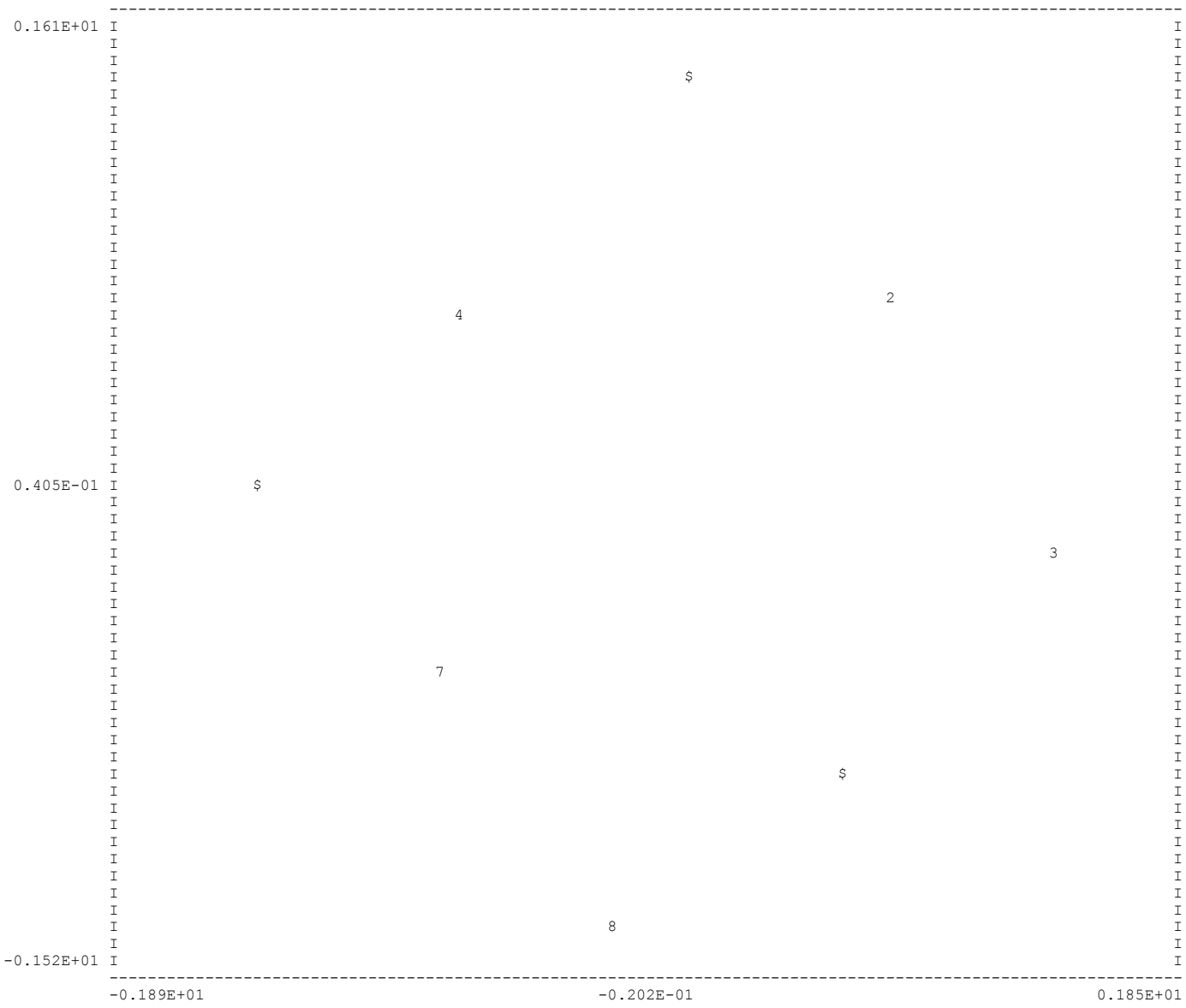
0.115	1.463
0.838	0.697
1.431	-0.137
-0.704	0.639
0.676	-0.860
-1.424	0.098
-0.779	-0.517
-0.152	-1.383
0.115	1.463
0.676	-0.860
-1.424	0.098

INITIAL STANDARD DEVIATIONS - ALL OBJECTS

0.010
1.194
2.020
1.254
2.366
3.589
2.187
5.239
4.658
2.143
0.010

MEAN OF STANDARD DEVIATIONS 2.243

INITIAL CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



INITIAL VARIANCES - ACTIVE VARIABLES

```
       7.369
       3.894
```

*** WARNING *** THE NEW SEGMENT ASSIGNMENTS MAY NOT BE CONGRUENT WITH THE TARGET ASSIGNMENTS.

TRANSFORMED CONFIGURATION

```
      -0.879         0.942
       0.082         1.000
       1.015         0.925
      -0.783        -0.115
       1.078        -0.028
      -0.827        -0.938
      -0.017        -0.847
       0.958        -0.916
      -0.879         0.942
       1.078        -0.028
      -0.827        -0.938
```

CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.9547 SUM OF DISTANCE DIFFERENCES = 0.161306E+01

```
TRANSFORMED VARIANCES
         6.159
         3.254


INITIAL LOG LIKELIHOOD VALUE                 -0.14787639E+04


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.431  -0.704   0.676  -1.424  -0.779  -0.152   0.115   0.676
 -1.424   1.463   0.697  -0.137   0.639  -0.860   0.098  -0.517  -1.383   1.463
 -0.860   0.098   7.369   3.894

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.437194E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.431  -0.704   0.676  -1.424  -0.779  -0.152   0.115   0.676
 -1.424   1.463   0.697  -0.137   0.639  -0.860   0.098  -0.517  -1.383   1.463
 -0.860   0.098   0.002   0.119

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.394907E+03


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.458  -0.646   0.700  -1.378  -0.687  -0.051   0.024   0.694
 -0.978   1.463   0.718  -0.031   0.740  -0.664   0.128  -0.550  -1.359   1.223
 -0.601   0.160   0.002   0.119

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.381357E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.458  -0.646   0.700  -1.378  -0.687  -0.051   0.024   0.694
 -0.978   1.463   0.718  -0.031   0.740  -0.664   0.128  -0.550  -1.359   1.223
 -0.601   0.160   0.001   0.094

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.378705E+03


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.472  -0.659   0.728  -1.363  -0.680  -0.022   0.028   0.637
 -0.859   1.463   0.736  -0.018   0.738  -0.673   0.112  -0.580  -1.362   1.103
 -0.513   0.132   0.001   0.094

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.377723E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.472  -0.659   0.728  -1.363  -0.680  -0.022   0.028   0.637
 -0.859   1.463   0.736  -0.018   0.738  -0.673   0.112  -0.580  -1.362   1.103
 -0.513   0.132   0.001   0.086

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.377289E+03


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

  0.115   0.838   1.484  -0.663   0.750  -1.352  -0.669   0.001   0.030   0.624
 -0.811   1.463   0.748  -0.006   0.735  -0.673   0.100  -0.594  -1.362   1.064
 -0.479   0.119   0.001   0.086

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.377148E+03


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

  0.115   0.838   1.484  -0.663   0.750  -1.352  -0.669   0.001   0.030   0.624
 -0.811   1.463   0.748  -0.006   0.735  -0.673   0.100  -0.594  -1.362   1.064
 -0.479   0.119   0.001   0.083

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.377075E+03


ESTIMATE VALUES ENTERING LAST PHASE

  0.115   0.838   1.490  -0.664   0.760  -1.347  -0.664   0.012   0.031   0.621
 -0.792   1.463   0.753  -0.001   0.733  -0.673   0.094  -0.599  -1.362   1.049
 -0.467   0.113   0.001   0.083
```

FINAL LOG LIKELIHOOD VALUE -0.377032E+03

NUMBER OF FREE PARAMETERS 20
NUMBER OF JUDGMENTS 364
CAIC 0.892006E+03
BIC 0.872006E+03

FUNCTION EVALUATIONS = 8005 CONSTRAINT EVALUATIONS = 0

REANALYZED FINAL CONFIGURATION

0.115	1.463
0.838	0.757
1.494	0.004
-0.664	0.732
0.767	-0.672
-1.343	0.089
-0.659	-0.603
0.021	-1.362
0.032	1.040
0.621	-0.459
-0.780	0.110

RENANLYZED FINAL VARIANCES

0.001
0.081

*** WARNING *** THE NEW SEGMENT ASSIGNMENTS MAY NOT BE CONGRUENT WITH THE TARGET ASSIGNMENTS.

TRANSFORMED CONFIGURATION

-0.948	1.011
0.078	1.047
1.091	0.999
-0.958	-0.073
1.076	-0.008
-0.963	-1.022
0.025	-1.007
1.059	-1.041
-0.696	0.654
0.818	0.034
-0.583	-0.595

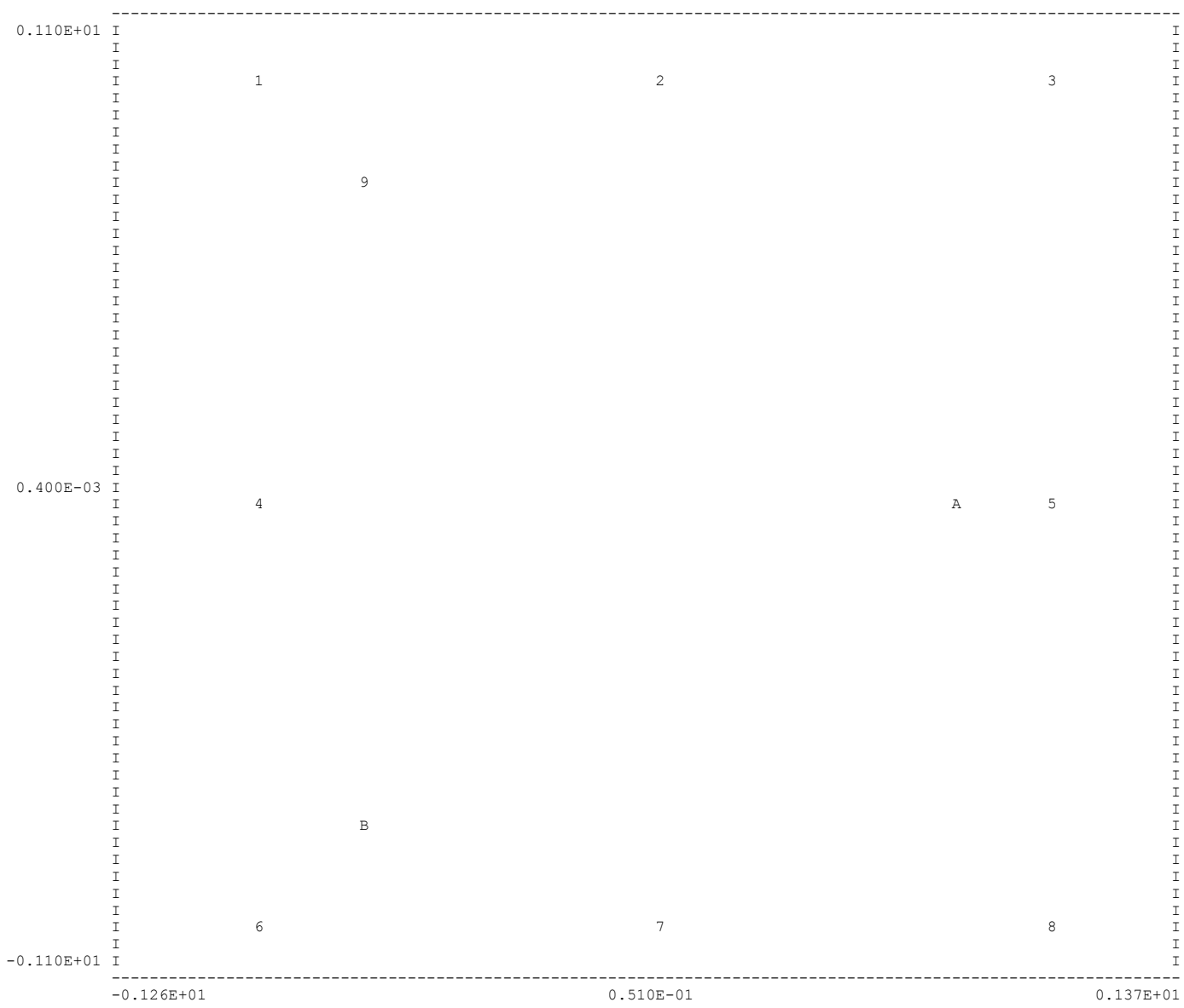
CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.9917 SUM OF DISTANCE DIFFERENCES = 0.618149E+00

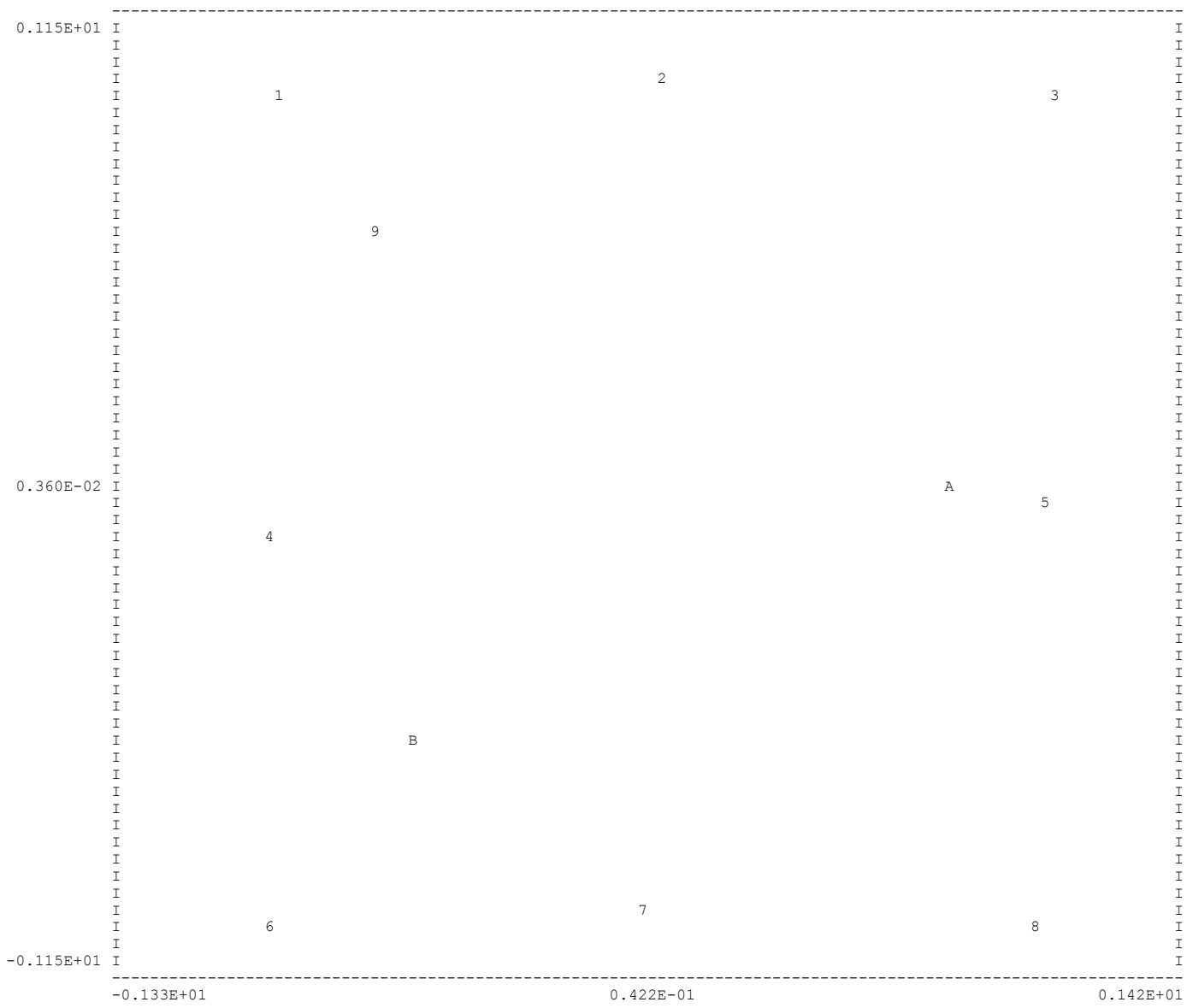
TRANSFORMED VARIANCES
0.001
0.084

CONTRIBUTIONS TO FINAL LOG LIKELIHOOD FUNCTION (SUBJECT, OBJECT, OBJECT, LIKELIHOOD)

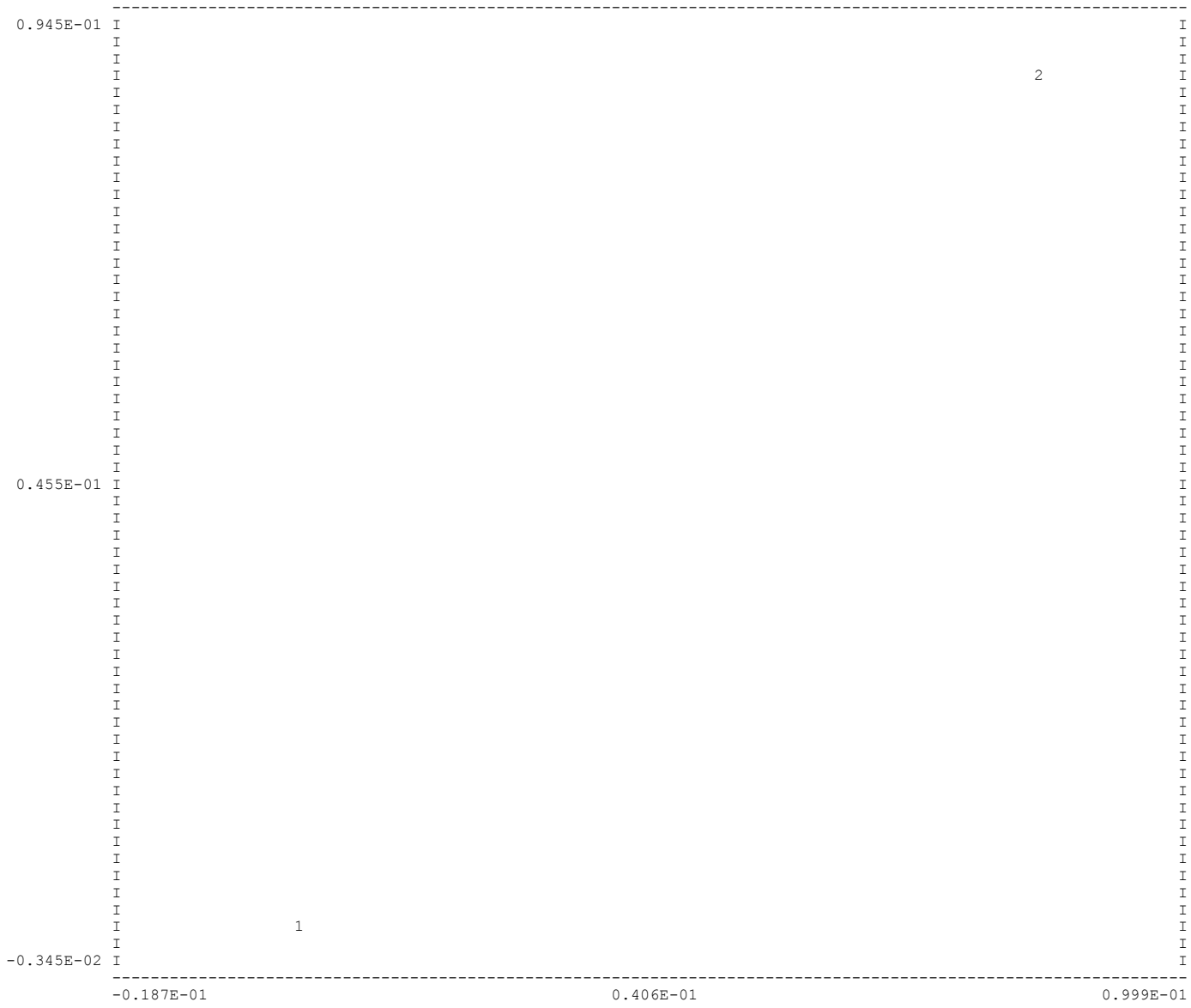
1	2	1	0.298E+00	1	3	1	0.227E+01	1	3	2	0.342E+00	1	4	1	0.158E+00	1	4	2	-0.608E-01
1	4	3	0.123E+00	1	5	1	0.319E+00	1	5	2	-0.346E-02	1	5	3	0.102E+00	1	5	4	-0.164E+00
1	6	1	0.227E+01	1	6	2	0.249E+00	1	6	3	0.226E+01	1	6	4	-0.636E-01	1	6	5	0.335E+00
1	7	1	-0.327E+00	1	7	2	-0.258E-01	1	7	3	0.146E+00	1	7	4	-0.316E-01	1	7	5	-0.788E+00
1	7	6	0.245E+00	1	8	1	0.228E+01	1	8	2	0.297E+00	1	8	3	0.155E+01	1	8	4	-0.137E+01
1	8	5	-0.216E-01	1	8	6	0.231E+01	1	8	7	0.350E+00								
2	2	1	-0.120E+01	2	3	1	0.195E+01	2	3	2	0.256E+00	2	4	1	0.234E+00	2	4	2	0.893E-02
2	4	3	-0.127E+00	2	5	1	0.250E+00	2	5	2	-0.446E+00	2	5	3	-0.875E-01	2	5	4	-0.390E+00
2	6	1	0.235E+01	2	6	2	0.297E+00	2	6	3	0.235E+01	2	6	4	0.232E+00	2	6	5	-0.706E+00
2	7	1	-0.306E+00	2	7	2	-0.127E+01	2	7	3	-0.118E+00	2	7	4	-0.521E-01	2	7	5	-0.784E+00
2	7	6	0.329E+00	2	8	1	0.232E+01	2	8	2	0.336E+00	2	8	3	0.105E+01	2	8	4	-0.195E+00
2	8	5	0.248E-01	2	8	6	0.224E+01	2	8	7	0.344E+00								
3	2	1	-0.292E+00	3	3	1	0.235E+01	3	3	2	-0.146E+01	3	4	1	0.215E+00	3	4	2	-0.423E+00
3	4	3	0.324E+00	3	5	1	-0.711E+00	3	5	2	-0.413E+00	3	5	3	-0.857E+00	3	5	4	-0.603E+00
3	6	1	0.235E+01	3	6	2	-0.534E+00	3	6	3	0.218E+01	3	6	4	-0.110E+01	3	6	5	-0.213E+00
3	7	1	0.240E+00	3	7	2	-0.826E+00	3	7	3	-0.142E+00	3	7	4	-0.208E+01	3	7	5	-0.176E+00
3	7	6	-0.790E-01	3	8	1	0.156E+01	3	8	2	0.337E+00	3	8	3	0.235E+01	3	8	4	-0.260E+01
3	8	5	0.123E+00	3	8	6	0.230E+01	3	8	7	-0.211E-01								
4	2	1	0.221E+00	4	3	1	0.102E+01	4	3	2	-0.629E+00	4	4	1	0.266E+00	4	4	2	-0.775E-01
4	4	3	0.336E+00	4	5	1	-0.154E+01	4	5	2	0.529E-02	4	5	3	0.173E+00	4	5	4	-0.402E-01
4	6	1	0.198E+01	4	6	2	-0.315E+00	4	6	3	0.216E+01	4	6	4	0.196E+00	4	6	5	0.191E+00
4	7	1	0.322E+00	4	7	2	-0.199E+00	4	7	3	0.300E+00	4	7	4	-0.169E+00	4	7	5	-0.148E+01
4	7	6	0.348E+00	4	8	1	0.200E+01	4	8	2	-0.187E-01	4	8	3	0.234E+01	4	8	4	0.165E+00
4	8	5	-0.174E+01	4	8	6	0.152E+01	4	8	7	-0.260E+00								
5	2	1	-0.694E+00	5	3	1	0.547E+00	5	3	2	0.334E+00	5	4	1	0.345E+00	5	4	2	-0.142E+00
5	4	3	0.176E+00	5	5	1	-0.218E+01	5	5	2	-0.220E+01	5	5	3	0.275E+00	5	5	4	-0.211E+00
5	6	1	0.206E+01	5	6	2	-0.292E+00	5	6	3	0.207E+01	5	6	4	-0.104E+01	5	6	5	-0.312E+01

5	7	1	0.223E-01	5	7	2	-0.565E+00	5	7	3	-0.221E+00	5	7	4	-0.355E+00	5	7	5	-0.226E+00
5	7	6	0.336E+00	5	8	1	0.181E+01	5	8	2	0.319E+00	5	8	3	0.187E+01	5	8	4	-0.119E+01
5	8	5	0.158E+00	5	8	6	0.203E+01	5	8	7	0.328E+00								
6	2	1	-0.180E+00	6	3	1	0.158E+01	6	3	2	0.352E+00	6	4	1	0.204E+00	6	4	2	-0.331E+00
6	4	3	0.230E+00	6	5	1	0.277E+00	6	5	2	-0.114E+00	6	5	3	0.347E+00	6	5	4	-0.180E+01
6	6	1	0.109E+01	6	6	2	0.163E+00	6	6	3	0.229E+01	6	6	4	-0.350E+00	6	6	5	0.105E+00
6	7	1	-0.858E-01	6	7	2	-0.152E+01	6	7	3	0.334E+00	6	7	4	-0.704E+00	6	7	5	0.185E-02
6	7	6	0.276E+00	6	8	1	0.216E+01	6	8	2	-0.343E+00	6	8	3	0.206E+01	6	8	4	0.212E+00
6	8	5	-0.590E+00	6	8	6	0.202E+00	6	8	7	0.824E-01								
7	2	1	-0.202E+00	7	3	1	0.235E+01	7	3	2	0.545E-01	7	4	1	-0.239E+00	7	4	2	-0.173E+00
7	4	3	0.294E+00	7	5	1	-0.110E+01	7	5	2	0.132E-01	7	5	3	0.247E+00	7	5	4	-0.832E-01
7	6	1	0.130E+01	7	6	2	-0.654E+00	7	6	3	0.204E+01	7	6	4	0.317E+00	7	6	5	-0.725E+00
7	7	1	0.295E+00	7	7	2	-0.147E+00	7	7	3	0.323E+00	7	7	4	0.149E-01	7	7	5	-0.371E+00
7	7	6	0.726E-01	7	8	1	0.212E+01	7	8	2	0.298E+00	7	8	3	0.135E+01	7	8	4	0.131E+00
7	8	5	0.355E+00	7	8	6	0.144E+01	7	8	7	-0.105E+01								
8	2	1	-0.875E-01	8	3	1	0.216E+00	8	3	2	0.355E+00	8	4	1	-0.244E+00	8	4	2	-0.131E-01
8	4	3	0.337E+00	8	5	1	-0.126E+00	8	5	2	0.704E-02	8	5	3	0.136E+00	8	5	4	-0.593E+00
8	6	1	0.174E+01	8	6	2	0.308E+00	8	6	3	0.197E+01	8	6	4	-0.245E+00	8	6	5	-0.253E+01
8	7	1	-0.253E+00	8	7	2	-0.586E+00	8	7	3	0.299E+00	8	7	4	-0.405E+00	8	7	5	-0.150E-01
8	7	6	0.129E+00	8	8	1	0.235E+01	8	8	2	0.334E+00	8	8	3	0.172E+01	8	8	4	0.303E+00
8	8	5	0.191E+00	8	8	6	-0.874E+00	8	8	7	-0.112E+01								
9	2	1	0.356E+00	9	3	1	0.236E+01	9	3	2	-0.145E+01	9	4	1	0.267E+00	9	4	2	-0.411E-01
9	4	3	0.234E+00	9	5	1	-0.307E-02	9	5	2	0.842E-02	9	5	3	-0.173E+01	9	5	4	-0.200E-01
9	6	1	0.231E+01	9	6	2	0.574E-01	9	6	3	0.957E+00	9	6	4	0.245E+00	9	6	5	0.255E+00
9	7	1	0.283E+00	9	7	2	-0.106E-01	9	7	3	0.337E+00	9	7	4	-0.707E-02	9	7	5	-0.178E+00
9	7	6	0.219E+00	9	8	1	0.233E+01	9	8	2	-0.196E+00	9	8	3	0.179E+01	9	8	4	0.243E+00
9	8	5	-0.368E+00	9	8	6	0.236E+01	9	8	7	0.337E+00								
10	2	1	0.257E+00	10	3	1	0.164E+01	10	3	2	-0.215E+00	10	4	1	0.285E+00	10	4	2	0.670E-02
10	4	3	0.315E+00	10	5	1	-0.563E-01	10	5	2	-0.102E+01	10	5	3	0.268E+00	10	5	4	-0.155E-01
10	6	1	0.234E+01	10	6	2	0.325E+00	10	6	3	0.234E+01	10	6	4	0.360E+00	10	6	5	-0.126E+01
10	7	1	-0.317E-01	10	7	2	-0.646E-01	10	7	3	0.275E+00	10	7	4	-0.924E-01	10	7	5	-0.206E+00
10	7	6	0.339E+00	10	8	1	0.187E+01	10	8	2	0.316E+00	10	8	3	0.183E+01	10	8	4	-0.297E+01
10	8	5	0.347E+00	10	8	6	0.235E+01	10	8	7	-0.288E+00								
11	2	1	-0.631E+01	11	3	1	-0.362E-02	11	3	2	-0.583E+00	11	4	1	-0.101E+02	11	4	2	-0.110E+02
11	4	3	-0.413E+01	11	5	1	-0.292E-01	11	5	2	-0.691E+01	11	5	3	-0.110E+02	11	5	4	-0.397E+01
11	6	1	-0.127E-01	11	6	2	-0.915E+01	11	6	3	-0.106E+02	11	6	4	-0.381E+01	11	6	5	-0.996E+01
11	7	1	-0.489E-01	11	7	2	-0.971E+00	11	7	3	-0.111E+02	11	7	4	-0.682E+00	11	7	5	-0.116E+02
11	7	6	-0.110E+02	11	8	1	-0.109E-05	11	8	2	-0.911E-02	11	8	3	-0.111E+01	11	8	4	-0.369E-02
11	8	5	-0.261E+01	11	8	6	-0.388E+01	11	8	7	-0.400E+01								
12	2	1	-0.627E+01	12	3	1	-0.100E+00	12	3	2	-0.908E+01	12	4	1	-0.113E+02	12	4	2	-0.490E+01
12	4	3	-0.958E+00	12	5	1	-0.185E-02	12	5	2	-0.375E+01	12	5	3	-0.964E+01	12	5	4	-0.101E+00
12	6	1	-0.106E+02	12	6	2	-0.374E+01	12	6	3	-0.669E-01	12	6	4	-0.825E+01	12	6	5	-0.104E-02
12	7	1	-0.613E+01	12	7	2	-0.113E+02	12	7	3	-0.121E+02	12	7	4	-0.526E+01	12	7	5	-0.985E+00
12	7	6	-0.113E+02	12	8	1	-0.202E+00	12	8	2	-0.117E+02	12	8	3	-0.117E+02	12	8	4	-0.618E+01
12	8	5	-0.831E+01	12	8	6	-0.140E+00	12	8	7	-0.921E+01								
13	2	1	-0.101E+02	13	3	1	-0.375E+01	13	3	2	-0.438E+01	13	4	1	-0.397E+01	13	4	2	-0.396E+01
13	4	3	-0.344E-02	13	5	1	-0.110E+02	13	5	2	-0.111E+02	13	5	3	-0.780E+01	13	5	4	-0.394E+01
13	6	1	-0.635E-01	13	6	2	-0.496E+01	13	6	3	-0.460E-04	13	6	4	-0.986E+01	13	6	5	-0.134E+00
13	7	1	-0.379E+01	13	7	2	-0.697E+00	13	7	3	-0.834E-02	13	7	4	-0.110E+02	13	7	5	-0.687E+01
13	7	6	-0.937E+01	13	8	1	-0.108E+02	13	8	2	-0.107E+02	13	8	3	-0.375E+01	13	8	4	-0.414E+01
13	8	5	-0.112E+02	13	8	6	-0.400E-01	13	8	7	-0.565E+00								


TARGET CONFIGURATION
DIMENSION 1 ON X AXIS
DIMENSION 2 ON Y AXIS.
0.110E+01
0.400E-03
-0.110E+01
-0.126E+01
0.510E-01
0.137E+01
1
2
3
9
4
A
5
B
6
7
8


TRANSFORMED / ESTIMATED CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.
0.115E+01
0.360E-02
-0.115E+01
-0.133E+01
0.422E-01
0.142E+01
1
2
3
4
5
6
7
8
9
A
B

TARGET VARIANCES ON Y AXIS FINAL TRANSFORMED VARIANCES ON X AXIS



ESTIMATED TRUE AND EXPECTED DISTANCES

OBJECTS		TRUE	EXPECTED
2	1	0.101072E+01	0.101399E+01
3	1	0.200771E+01	0.200771E+01
3	2	0.998677E+00	0.100199E+01
4	1	0.106775E+01	0.107085E+01
4	2	0.150238E+01	0.150677E+01
4	3	0.227730E+01	0.227874E+01
5	1	0.223183E+01	0.223330E+01
5	2	0.143055E+01	0.143517E+01
5	3	0.992236E+00	0.995567E+00
5	4	0.200432E+01	0.200761E+01
6	1	0.200233E+01	0.200233E+01
6	2	0.228097E+01	0.228242E+01
6	3	0.283803E+01	0.283803E+01
6	4	0.934581E+00	0.938120E+00
6	5	0.224300E+01	0.224447E+01
7	1	0.220612E+01	0.220761E+01
7	2	0.202324E+01	0.202650E+01
7	3	0.223718E+01	0.223865E+01
7	4	0.133509E+01	0.134004E+01
7	5	0.142803E+01	0.143266E+01
7	6	0.973227E+00	0.976624E+00
8	1	0.282658E+01	0.282658E+01

8	2	0.227173E+01	0.227318E+01
8	3	0.200920E+01	0.200921E+01
8	4	0.220321E+01	0.220471E+01
8	5	0.101697E+01	0.102022E+01
8	6	0.199177E+01	0.199177E+01
8	7	0.101912E+01	0.102236E+01
9	1	0.430436E+00	0.438261E+00
9	2	0.854843E+00	0.862637E+00
9	3	0.179231E+01	0.179415E+01
9	4	0.760903E+00	0.769686E+00
9	5	0.186318E+01	0.186672E+01
9	6	0.167127E+01	0.167324E+01
9	7	0.178290E+01	0.178660E+01
9	8	0.240266E+01	0.240403E+01
10	1	0.198752E+01	0.198918E+01
10	2	0.123565E+01	0.124101E+01
10	3	0.988163E+00	0.991509E+00
10	4	0.175199E+01	0.175576E+01
10	5	0.257785E+00	0.285441E+00
10	6	0.203903E+01	0.204065E+01
10	7	0.128837E+01	0.129350E+01
10	8	0.108442E+01	0.108747E+01
10	9	0.161116E+01	0.161526E+01
11	1	0.162182E+01	0.162386E+01
11	2	0.174283E+01	0.174661E+01
11	3	0.227623E+01	0.227768E+01
11	4	0.632774E+00	0.643402E+00
11	5	0.173308E+01	0.173688E+01
11	6	0.563329E+00	0.569253E+00
11	7	0.723137E+00	0.732393E+00
11	8	0.167569E+01	0.167766E+01
11	9	0.123470E+01	0.124006E+01
11	10	0.151198E+01	0.151634E+01

ELAPSED MINUTES = 1

```
INITIAL DATA
TITLE
Project1
DATATP    5.0
NSTIM     8.0
NSUB      4.0
NSETS     220.0
NDIM      3.0
METRIC    1.0
TCOR      1.0
TSIG      1.0
TMES      1.0
INITIAL   1.0
ITMAX     20.0
SAMPLE    1.0
DISTRIB   3.0
NACT      36.0
NSIG      9.0
NOPT      0.0
STAND     2.0
FIXED     3.0
NMMP      7.0
NPROX     20.0
NFMAX     2000.0
NCHC      0.0
MIXTURE   2.0
DOOVER    2.0
SIMDIS    1.0
ALGOR     1.0
MODELA    2.0
MODELB    2.0
QPDF      2.0
NTRAC     -1.0
UMLMIN    0.00010
UINMIN    0.010
ENDIN


TARGET DATA
-1.73053503628  2.03932284097 0
 1.92714637414  2.26795136019 0
 2.38380783206 -1.33190775439 0
-1.11397529803 -1.96468213334 0
-0.27660040363  0.447394724568 0
 0.53379843031  0.138221210082 0
 0.51764566456  0.10720873921 0
-0.00369114813  0.0367329918569 0
-1.47476525050  1.04196003497 0
 1.23674883997  1.57493695427 0
 1.63901752509 -0.986661736571 0
-0.96132603462 -0.817491195181 0
 0.608332805252
 0.652953059575
 0
 1.41979322071
 3.61512235525
 0
 1.11771481476
 1.94260685219
 0
 0.0399999999
 0.276896415243
 0.976403566657
 1 1 1 1 2 2 2 2 3 3 3 3
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2
 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2
 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2
 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
 31 32 33 34 35 36


DISTANCE DATA
   1.2542
   1.6589    .7747
    .8389  1.3700  1.0005
   1.3991  1.6764  1.3997  1.0354
    .8414  1.0816    .9523    .6273    .6632
   1.4546  1.0631    .4944    .7789  1.0858    .4191
   1.0527  1.2632    .1825    .8596  1.0584  1.5261    .6855
   1.1582
   1.2331    .9345
```

```
1.0503  1.6660   .7676
 .7044  1.0458  1.5060  1.4077
1.2856  1.0616   .7907  1.5785   .3890
 .8597   .6043  1.1546  1.0101   .7129   .3721
1.1522   .9765   .5384   .2887  1.0846   .5424   .0535
 .5493
1.8091   .7294
1.0377  1.1708   .8680
 .6070   .4161  1.3274   .9654
1.1843  1.1951   .6489  1.2369   .5414
 .8258   .7041  1.0327   .5720  1.2546   .4797
1.6460  1.6093   .3043   .5306  1.0025  1.0596   .5877
1.5522
1.6536   .6432
 .6998  1.3701  1.4413
 .0946   .7925  1.1848   .4658
1.0387   .5675   .4969   .8387  1.0459
 .6775   .8341  1.0075  1.4867   .9006   .3934
1.1418   .8374   .9414  1.0984   .9693   .9056  1.1652
 .8404
1.4039   .8394
 .6684  1.9755   .9653
1.6099   .6499  1.3548  1.0543
 .4052   .9869   .4831   .9783   .5408
 .3441   .4524   .4297   .6842   .4657  1.5014
 .1738   .9224  1.3150  1.0725  1.2315   .5002  1.3243
1.2968
1.7528  1.2618
 .9860   .7811   .4092
 .7024   .9644   .8757   .9599
 .8089   .6336  1.5579   .2492   .2526
1.5459  1.0505  1.0971   .9565  1.3684   .7429
 .3743  1.8875   .9027   .8097   .9185   .9063   .0680
1.0524
1.5381  1.0659
1.4882  1.6736  1.0252
 .9457   .7893  1.3179   .6224
1.2249   .8747   .2805  1.1520   .8081
1.3517  1.0604   .5061   .3796  1.1598   .7895
 .6548   .2923  1.3550   .6530   .0957   .7979   .4392
1.0932
1.7054  1.3156
1.6461  1.5129  1.4536
 .7074   .8171  1.1272   .3522
 .8660   .5415   .9730   .3055   .4718
1.8725   .7263  1.9680   .3056   .4889   .1882
 .9031   .6667   .6890  1.0889   .4114  1.3275   .4714
 .7983
1.0784   .8181
1.2494  1.6538  1.2285
 .4830   .4671  1.4580   .8910
1.1409  1.4774   .6099  1.5745  1.0641
 .9673   .9958  1.3823  1.4398   .1780   .7320
 .5008   .1380  1.6782  1.1835   .7548   .3732   .8815
1.3849
1.1925  1.4605
1.3301  1.7030  1.4226
 .9049  1.1825   .8345   .6934
1.1685   .8025   .4590   .4936  1.0545
 .9138  1.1351  1.1763   .5709   .7515   .3113
1.4047   .5637   .2253   .6241  1.7188  1.2583  1.6299
1.2941
1.4586   .7047
 .8761  1.2293  1.2705
 .7508   .5072  1.4786   .1873
 .4682  1.2943  1.0780   .8789   .7937
1.0936  1.1073   .4557  1.4798   .6477   .2884
 .4167   .8881  1.1497   .4147   .8207  1.1811   .7474
1.0952
1.5591   .9232
 .9608  1.9225  1.2271
 .5953  1.1285  1.2872  1.2412
1.0807   .7500   .9212   .2494  1.2452
 .5504   .9758  1.0188  1.2887   .6191   .1494
 .2588   .7837   .7017   .5908  1.0447   .2738   .1804
 .6810
1.1372  1.3711
1.4777  1.5659   .9822
 .1893  1.2276  1.6762  1.0454
1.0162  1.6952  1.2660  1.8467   .8980
1.2987   .4827  1.2815  1.0289  1.0564   .3788
 .8085   .6992  1.3563   .6806  1.5209   .7482   .1998
1.3105
1.6349   .7361
 .7465  1.4129  1.1348
 .4749   .7670   .4988  1.1505
1.2047   .3498  1.1158   .7887   .7429
 .6726   .9309   .1139  1.5855   .3739   .7023
 .5346  1.8371   .5061  1.3785   .9855   .5745  1.3503
```

```
 1.1732
 1.4017  1.1807
 1.3068  1.7635   .8034
  .0868  1.0207  1.0061   .7313
  .5439   .6453   .9478  1.5929  1.3480
  .9616  1.7311   .4353  1.2038  1.5092   .4004
  .2316   .3283  1.2417   .2557   .8218   .1467   .5608
 1.0157
 1.9443   .9289
 1.3892  1.4399   .7600
  .7215   .6130   .9339  1.3674
  .5257   .7206  1.4444  1.3101   .2423
 1.5901   .8818  1.3180   .1346   .0982  1.3212
 1.0962  1.8822  1.3320   .4726   .6921   .3928   .5155
 1.0263
 1.2440  1.7095
  .9665  1.5496  1.4779
 1.4231  1.1177   .7179   .0400
  .6954   .8451  1.0108   .1089   .6977
 1.6002  1.1920   .7628   .7666   .9908   .6392
  .8521   .1938   .1778   .9903  1.2039   .4592  1.5240
  .9398
 1.5430  1.2042
  .8013  1.2384   .7616
 1.6805   .3072  1.3749  1.4807
  .7741   .8947   .7211   .9332  1.5212
  .8272   .5566  1.3413   .8014   .3231  1.1640
 1.6326  1.0355  1.4325   .5832   .2898   .4312  1.4768
  .7813
 1.4834  1.2205
 1.3907   .9861  1.1936
  .4388   .9081  1.0039   .7089
 1.7197   .4734   .2745   .4627   .4174
 1.8270   .3507   .5205  1.2133   .3329   .7675
  .2348   .7961  1.0952  1.2509  1.2696   .6495   .3188
 1.4955
 1.5466   .7757
  .9718  1.5595  1.6737
  .9908   .2524  1.3474  1.2160
 1.2377  1.0030   .4215  1.4942   .7200
 1.1870   .8368   .6561   .8043   .3240   .7918
  .6168   .7940  1.7010  1.0836   .5484  1.5350   .6772
2 1 3 4 1 2 5 2
2 1 4 3 3 1 3 2
8 3 3 4 4 3 5 3
2 4 4 2 1 1 2 2
1 4 7 3 3 5 3 3
5 3 4 5 5 4 3 1
3 2 2 3 1 2 3 3
4 4 3 2 1 2 1 1
2 4 3 5 4 2 2 2
3 3 3 8 4 2 4 3
5 6 1 4 2 3 3 5
6 4 3 2 2 2 4 1
1 3 6 4 2 2 4 5
4 3 3 4 1 5 3 3
3 4 2 3 3 1 3 3
3 4 3 1 1 2 3 2
3 5 7 5 3 3 6 1
4 3 4 3 4 2 2 2
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5 4 4 5 2 4 4 3
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2 4 7 3 3 5 2 2
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4 4 2 4 2 5 1 4
1 4 5 4 1 5 6 1
2 3 3 4 3 4 3 3
4 4 2 4 3 4 1 3
3 4 4 5 2 1 3 3
2 5 5 6 3 3 3 3
4 1 5 4 5 1 2 5
5 2 2 4 4 1 1 3
4 6 3 1 2 5 2 2
3 6 8 2 1 4 1 3
4 3 4 6 1 4 5 3
5 3 1 5 4 5 3 1
3 4 3 1 1 3 8 2
1 3 4 3 4 4 6 5
2 3 4 2 7 4 2 2
5 1 1 2 4 1 2 4
2 7 4 2 1 3 3 1
1 3 4 4 4 5 3 3
2 3 3 4 3 4 3 3
6 8 1 2 2 2 4 3
```

5 5 4 2 1 1 3 4
1 6 7 3 4 3 5 2
4 4 3 4 7 1 1 3
4 3 4 4 6 2 2 4
4 5 2 3 4 6 3 4
2 4 3 1 3 4 2 4
3 2 7 6 1 3 2 3
6 3 3 2 2 1 4 2
5 7 4 2 4 4 1 2
1 4 6 1 2 5 4 5
3 3 4 4 3 3 2 1
5 4 1 4 2 2 4 3
4 5 4 1 1 3 2 2
3 5 4 3 2 4 2 3
6 1 4 4 1 5 2 5
2 3 1 5 3 3 8 5
3 4 5 4 4 1 2 4
2 4 6 4 3 3 2 5
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3 7 3 3 2 3 2 1
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5 4 4 5 3 2 7 4
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4 3 4 6 6 4 4 5
6 3 2 4 3 3 2 2
4 2 3 2 3 5 2 2
2 3 4 4 3 3 2 4
7 3 1 7 2 4 5 3
5 3 2 4 3 2 4 2
2 7 3 3 5 2 5 3

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3 2 1 4 3 4 2 1
6 6 2 3 4 1 2 4
4 7 4 4 4 2 4 5
3 4 4 4 2 2 2 4
5 3 3 5 4 1 9 5
6 4 2 2 4 4 5 5
3 4 3 3 1 4 4 2
4 6 4 7 2 3 2 2
4 1 6 5 3 3 2 1
5 4 1 2 3 3 3 3
7 4 3 1 4 1 3 2
2 6 4 4 2 1 4 2
4 2 1 4 3 4 5 4
5 4 2 3 7 2 9 2
2 4 7 2 2 4 3 5
2 3 3 3 6 3 2 2
4 2 5 4 3 2 4 5
5 3 2 2 4 3 1 3
5 4 4 1 3 3 1 2
3 8 5 4 6 3 5 2
3 2 3 4 2 4 1 2
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5 2 5 5 3 5 3 3
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5 4 5 3 2 3 3 4
1 4 6 3 1 3 4 2
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4 4 5 1 3 2 3 2
4 2 4 3 4 2 1 4
2 2 3 4 4 5 3 4
3 4 2 2 7 2 2 6
2 4 1 2 5 2 4 5
5 3 5 4 2 2 3 5
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6 4 4 2 2 2 1 6
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4 1 2 3 3 3 5 6
3 1 3 2 2 1 4 2
3 5 5 2 3 4 2 2
5 3 6 4 2 4 3 2
4 3 3 5 3 2 3 2
4 4 5 4 5 5 2 3
3 4 2 5 2 4 2 2
7 1 4 4 1 3 1 2
4 5 2 4 3 2 2 1
3 4 3 3 4 6 5 4

Example 5: Output

PROSCAL

Project1

DATE 2006:05:03
TIME 12:02:39.624

NUMBER OF STIMULI	8		
NUMBER OF ACTIVE COORD.	36	UMLMIN	0.00010
NUMBER OF DIMENSIONS	3	UINMIN	0.01000
NUMBER OF VARIANCES	9	ZMIN	0.00000
NUMBER OF IDEAL OBJECTS	220	NFMAX	2000
NUMBER OF DATA SETS	9	NTRAC	-1
NUMBER OF ML ITERATIONS	20		
NUMBER OF DISTANCE SETS	20		
TRANSFORMATION INDEX	7		
OPTIMIZATION LEVEL	0		
TARGET COORD. OPTION	TARG		
TARGET VARIANCE OPT.	TARG		
TARGET MEAS PARAM OPT.	TARG		
STANDARDIZATION OPT.	STNO		
INITIALIZATION OPTION	TARG		
DATA TYPE OPTION	PRRA		
DISTRIBUTION OPTION	CVNO		
FIXED POINT OPTION	FXNO		
SAMPLING	INDP		
METRIC OPTION	ECLD		
MIXTURE OPTION	NOEM		
REANALYSIS OPTION	NORD		
PROXIMITIES OPTION	NOSI		

TARGET CONFIGURATION

-1.731	2.039	0.000
1.927	2.268	0.000
2.384	-1.332	0.000
-1.114	-1.965	0.000
-0.277	0.447	0.000
0.534	0.138	0.000
0.518	0.107	0.000
-0.004	0.037	0.000
-1.475	1.042	0.000
1.237	1.575	0.000
1.639	-0.987	0.000
-0.961	-0.817	0.000

TARGET VARIANCES

0.608
0.653
0.000
1.420
3.615
0.000
1.118
1.943
0.000

TARGET MEASUREMENT TRANSFORMATION COEFFICIENTS

0.399999999000E-01
0.276896415243E+00
0.976403566657E+00

VARIANCE SET MEMBERSHIP

OBJECTS	1	2	3	4	5	6	7	8	9	10	11	12
SET	1	1	1	1	2	2	2	2	3	3	3	3

SUBJECT SET MEMBERSHIP

SUBJECT	SET
1	1
2	2
3	3
4	4
5	1

6	2
7	3
8	4
9	1
10	2
11	3
12	4
13	1
14	2
15	3
16	4
17	1
18	2
19	3
20	4
21	1
22	2
23	3
24	4
25	1
26	2
27	3
28	4
29	1
30	2
31	3
32	4
33	1
34	2
35	3
36	4
37	1
38	2
39	3
40	4
41	1
42	2
43	3
44	4
45	1
46	2
47	3
48	4
49	1
50	2
51	3
52	4
53	1
54	2
55	3
56	4
57	1
58	2
59	3
60	4
61	1
62	2
63	3
64	4
65	1
66	2
67	3
68	4
69	1
70	2
71	3
72	4
73	1
74	2
75	3
76	4
77	1
78	2
79	3
80	4
81	1
82	2
83	3
84	4
85	1
86	2
87	3
88	4
89	1
90	2
91	3
92	4
93	1
94	2

95	3
96	4
97	1
98	2
99	3
100	4
101	1
102	2
103	3
104	4
105	1
106	2
107	3
108	4
109	1
110	2
111	3
112	4
113	1
114	2
115	3
116	4
117	1
118	2
119	3
120	4
121	1
122	2
123	3
124	4
125	1
126	2
127	3
128	4
129	1
130	2
131	3
132	4
133	1
134	2
135	3
136	4
137	1
138	2
139	3
140	4
141	1
142	2
143	3
144	4
145	1
146	2
147	3
148	4
149	1
150	2
151	3
152	4
153	1
154	2
155	3
156	4
157	1
158	2
159	3
160	4
161	1
162	2
163	3
164	4
165	1
166	2
167	3
168	4
169	1
170	2
171	3
172	4
173	1
174	2
175	3
176	4
177	1
178	2
179	3
180	4
181	1
182	2
183	3

```
   184        4
   185        1
   186        2
   187        3
   188        4
   189        1
   190        2
   191        3
   192        4
   193        1
   194        2
   195        3
   196        4
   197        1
   198        2
   199        3
   200        4


INITIAL MEASUREMENT CONSTANTS     0.0400    0.2769    0.9764


INITIAL LOG LIKELIHOOD VALUE                 -0.29332666E+04


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -1.731   1.927   2.384  -1.114  -0.277   0.534   0.518  -0.004  -1.475   1.237
  1.639  -0.961   2.039   2.268  -1.332  -1.965   0.447   0.138   0.107   0.037
  1.042   1.575  -0.987  -0.817   0.000   0.000   0.000   0.000   0.000   0.000
  0.000   0.000   0.000   0.000   0.000   0.000   0.608   0.653   0.000   1.420
  3.615   0.000   1.118   1.943   0.000

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.290990E+04


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -1.731   1.927   2.384  -1.114  -0.277   0.534   0.518  -0.004  -1.475   1.237
  1.639  -0.961   2.039   2.268  -1.332  -1.965   0.447   0.138   0.107   0.037
  1.042   1.575  -0.987  -0.817   0.000   0.000   0.000   0.000   0.000   0.000
  0.000   0.000   0.000   0.000   0.000   0.000   0.664   0.651   0.000   1.294
  3.570   0.000   0.806   1.856   0.954

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.289884E+04


MEASUREMENT PARAMETERS       0.400000E-01  0.276896E+00  0.996128E+00


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -1.711   1.803   2.267  -1.088  -0.218   0.469   0.492   0.012  -1.381   0.998
  1.530  -0.781   1.913   2.104  -1.223  -1.747   0.402   0.327   0.189  -0.019
  1.060   1.362  -0.826  -0.976  -0.126  -0.632   0.282   0.670  -0.392   0.522
  0.168   0.000  -0.251  -0.883   0.690  -0.349   0.664   0.651   0.000   1.294
  3.570   0.000   0.806   1.856   0.954

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.289737E+04


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -1.711   1.803   2.267  -1.088  -0.218   0.469   0.492   0.012  -1.381   0.998
  1.530  -0.781   1.913   2.104  -1.223  -1.747   0.402   0.327   0.189  -0.019
  1.060   1.362  -0.826  -0.976  -0.126  -0.632   0.282   0.670  -0.392   0.522
  0.168   0.000  -0.251  -0.883   0.690  -0.349   0.615   0.638   0.000   1.246
  3.420   0.000   0.705   2.222   0.946

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.289671E+04


MEASUREMENT PARAMETERS       0.400000E-01  0.276896E+00  0.100510E+01


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -1.693   1.794   2.255  -1.080  -0.231   0.452   0.498   0.046  -1.343   0.992
  1.533  -0.750   1.862   2.063  -1.190  -1.694   0.354   0.349   0.189  -0.022
  1.046   1.352  -0.801  -1.020  -0.211  -0.695   0.308   0.643  -0.349   0.502
  0.160  -0.015  -0.412  -0.947   0.763  -0.361   0.615   0.638   0.000   1.246
  3.420   0.000   0.705   2.222   0.946

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.289654E+04
```

```
ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -1.693   1.794   2.255  -1.080  -0.231   0.452   0.498   0.046  -1.343   0.992
  1.533  -0.750   1.862   2.063  -1.190  -1.694   0.354   0.349   0.189  -0.022
  1.046   1.352  -0.801  -1.020  -0.211  -0.695   0.308   0.643  -0.349   0.502
  0.160  -0.015  -0.412  -0.947   0.763  -0.361   0.581   0.632   0.000   1.205
  3.357   0.000   0.722   2.311   0.956

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.289633E+04


MEASUREMENT PARAMETERS       0.400000E-01  0.276896E+00  0.101206E+01


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -1.680   1.784   2.247  -1.074  -0.230   0.449   0.494   0.057  -1.339   0.992
  1.535  -0.743   1.845   2.046  -1.165  -1.672   0.354   0.354   0.193  -0.022
  1.046   1.358  -0.799  -1.035  -0.225  -0.701   0.330   0.649  -0.343   0.509
  0.164  -0.013  -0.428  -0.949   0.782  -0.350   0.581   0.632   0.000   1.205
  3.357   0.000   0.722   2.311   0.956

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.289622E+04


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -1.680   1.784   2.247  -1.074  -0.230   0.449   0.494   0.057  -1.339   0.992
  1.535  -0.743   1.845   2.046  -1.165  -1.672   0.354   0.354   0.193  -0.022
  1.046   1.358  -0.799  -1.035  -0.225  -0.701   0.330   0.649  -0.343   0.509
  0.164  -0.013  -0.428  -0.949   0.782  -0.350   0.560   0.609   0.000   1.194
  3.269   0.000   0.736   2.373   0.969

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.289537E+04


MEASUREMENT PARAMETERS       0.400000E-01  0.261057E+00  0.106055E+01


ESTIMATE VALUES ENTERING LAST PHASE

 -1.682   1.779   2.250  -1.069  -0.233   0.454   0.499   0.058  -1.338   0.986
  1.535  -0.726   1.804   2.027  -1.131  -1.658   0.351   0.344   0.193  -0.023
  1.051   1.360  -0.805  -1.063  -0.244  -0.701   0.359   0.649  -0.340   0.512
  0.182  -0.013  -0.418  -0.963   0.789  -0.345   0.560   0.609   0.000   1.194
  3.269   0.000   0.736   2.373   0.969


FINAL LOG LIKELIHOOD VALUE      -0.289449E+04

NUMBER OF FREE PARAMETERS        44
NUMBER OF JUDGMENTS      2160
CAIC                 0.617080E+04
BIC                  0.612680E+04


FUNCTION EVALUATIONS =   4009       CONSTRAINT EVALUATIONS =      0


FINAL CONFIGURATION

        -1.703         1.787        -0.308
         1.780         2.017        -0.749
         2.264        -1.132         0.397
        -1.100        -1.659         0.660
        -0.234         0.360        -0.352
         0.461         0.363         0.560
         0.529         0.193         0.182
         0.023        -0.023        -0.027
        -1.310         1.045        -0.432
         0.986         1.360        -0.901
         1.504        -0.805         0.778
        -0.699        -1.056        -0.268


FINAL VARIANCES

         0.490
         0.538
         0.000
         1.304
         2.997
         0.000
         0.782
         2.521
         0.996
```

FINAL MEASUREMENT TRANSFORMATION COEFFICIENTS

```
  0.399999999000E-01
  0.261056978832E+00
  0.106054940855E+01
```

TRANSFORMED CONFIGURATION

```
      -1.964         1.691         0.381
       1.683         2.014        -0.102
       2.128        -1.511        -0.133
      -1.408        -2.064         0.061
      -0.468         0.276        -0.236
       0.287        -0.066         0.637
       0.342        -0.097         0.201
      -0.201        -0.224        -0.064
      -1.579         0.999        -0.026
       0.826         1.437        -0.460
       1.352        -1.314         0.389
      -0.996        -1.140        -0.649
```

CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.9936 SUM OF DISTANCE DIFFERENCES = 0.378053E+01

TRANSFORMED VARIANCES AND COVARIANCES

```
        0.540
        0.007         0.522
       -0.013         0.192         0.071
        1.437
        0.064         2.905
       -0.019         1.070         0.396
        0.863
        0.050         2.576
        0.025         0.544         1.298
```

CONTRIBUTIONS TO FINAL LOG LIKELIHOOD FUNCTION (SUBJECT, OBJECT, OBJECT, LIKELIHOOD)

```
   1   2   1   0.132E+00   1   3   1   0.145E+00   1   3   2  -0.439E-01   1   4   1  -0.767E-01   1   4   2   0.262E+00
   1   4   3   0.330E+00   1   5   1  -0.117E+01   1   5   2  -0.160E+01   1   5   3  -0.514E+00   1   5   4  -0.201E+00
   1   6   1   0.306E-01   1   6   2  -0.181E+00   1   6   3  -0.777E-01   1   6   4  -0.169E+00   1   6   5   0.557E-01
   1   7   1  -0.797E+00   1   7   2  -0.224E+00   1   7   3  -0.207E+00   1   7   4  -0.306E-01   1   7   5  -0.529E+00
   1   7   6  -0.380E-01   1   8   1  -0.180E+00   1   8   2  -0.408E+00   1   8   3  -0.206E+01   1   8   4  -0.440E-01
   1   8   5  -0.559E+00   1   8   6  -0.166E+01   1   8   7  -0.333E-01
   2   2   1   0.292E+00   2   3   1  -0.108E+00   2   3   2   0.313E+00   2   4   1   0.315E+00   2   4   2   0.798E-01
   2   4   3  -0.129E+00   2   5   1   0.240E-01   2   5   2  -0.114E+00   2   5   3  -0.780E+00   2   5   4  -0.982E+00
   2   6   1  -0.423E+00   2   6   2  -0.147E+00   2   6   3   0.401E-02   2   6   4  -0.131E+01   2   6   5  -0.218E+00
   2   7   1  -0.141E-01   2   7   2  -0.681E-01   2   7   3  -0.427E+00   2   7   4  -0.135E+00   2   7   5  -0.227E-01
   2   7   6  -0.102E+00   2   8   1  -0.321E+00   2   8   2  -0.668E-01   2   8   3  -0.333E+00   2   8   4  -0.706E+00
   2   8   5  -0.612E+00   2   8   6   0.238E-01   2   8   7  -0.175E+01
   3   2   1  -0.144E+01   3   3   1  -0.243E+00   3   3   2  -0.214E+00   3   4   1   0.307E+00   3   4   2  -0.208E+00
   3   4   3   0.155E+00   3   5   1  -0.753E-02   3   5   2  -0.715E+00   3   5   3  -0.362E+00   3   5   4  -0.112E+00
   3   6   1  -0.228E+00   3   6   2  -0.408E+00   3   6   3  -0.547E-01   3   6   4  -0.473E+00   3   6   5   0.295E-01
   3   7   1  -0.264E-01   3   7   2   0.117E-01   3   7   3  -0.203E+00   3   7   4  -0.209E+00   3   7   5  -0.895E+00
   3   7   6   0.114E-01   3   8   1  -0.158E+01   3   8   2  -0.125E+01   3   8   3  -0.124E+01   3   8   4  -0.620E-01
   3   8   5  -0.452E+00   3   8   6  -0.517E+00   3   8   7   0.548E-02
   4   2   1  -0.104E+01   4   3   1   0.155E+00   4   3   2  -0.631E+00   4   4   1  -0.666E+00   4   4   2   0.262E+00
   4   4   3  -0.618E+00   4   5   1  -0.182E+01   4   5   2  -0.271E-01   4   5   3  -0.133E+00   4   5   4  -0.319E+00
   4   6   1  -0.365E-01   4   6   2  -0.119E+00   4   6   3  -0.283E+00   4   6   4  -0.633E-01   4   6   5  -0.402E+00
   4   7   1  -0.172E+00   4   7   2   0.935E-02   4   7   3  -0.165E+00   4   7   4  -0.109E+01   4   7   5  -0.215E+00
   4   7   6  -0.698E-01   4   8   1  -0.304E+00   4   8   2  -0.455E-01   4   8   3   0.123E-01   4   8   4  -0.403E+00
   4   8   5  -0.393E+00   4   8   6  -0.247E+00   4   8   7  -0.766E+00
   5   2   1   0.111E-01   5   3   1   0.241E+00   5   3   2   0.145E+00   5   4   1  -0.838E+00   5   4   2  -0.114E+01
   5   4   3   0.305E+00   5   5   1  -0.189E+01   5   5   2  -0.152E+00   5   5   3  -0.417E+00   5   5   4  -0.228E+00
   5   6   1  -0.948E+00   5   6   2  -0.363E-01   5   6   3  -0.313E+00   5   6   4  -0.126E+00   5   6   5   0.290E-01
   5   7   1  -0.121E+01   5   7   2  -0.365E+00   5   7   3  -0.357E+00   5   7   4  -0.756E-01   5   7   5  -0.602E-01
   5   7   6  -0.167E+01   5   8   1  -0.171E+01   5   8   2  -0.460E-01   5   8   3  -0.576E+00   5   8   4  -0.352E+00
   5   8   5  -0.936E+00   5   8   6   0.519E-02   5   8   7  -0.115E+01
   6   2   1   0.267E-01   6   3   1  -0.694E-01   6   3   2   0.563E-03   6   4   1   0.256E+00   6   4   2  -0.269E+01
   6   4   3  -0.232E+01   6   5   1   0.240E-01   6   5   2  -0.477E-01   6   5   3  -0.173E-01   6   5   4  -0.106E+00
   6   6   1   0.171E-01   6   6   2   0.117E-02   6   6   3  -0.145E+01   6   6   4  -0.121E+01   6   6   5  -0.799E+00
   6   7   1  -0.106E+01   6   7   2  -0.205E+00   6   7   3  -0.313E+00   6   7   4  -0.864E-01   6   7   5  -0.118E+01
   6   7   6  -0.726E-01   6   8   1  -0.715E+00   6   8   2  -0.220E+01   6   8   3   0.293E-01   6   8   4  -0.305E-02
   6   8   5  -0.308E+00   6   8   6  -0.248E+00   6   8   7  -0.161E+01
   7   2   1   0.339E+00   7   3   1   0.281E+00   7   3   2   0.345E+00   7   4   1  -0.558E+00   7   4   2   0.620E-01
   7   4   3   0.338E+00   7   5   1  -0.143E+00   7   5   2  -0.284E-01   7   5   3  -0.343E+00   7   5   4  -0.550E-01
   7   6   1  -0.301E+00   7   6   2   0.732E-01   7   6   3  -0.101E+01   7   6   4  -0.328E+00   7   6   5  -0.413E-01
   7   7   1  -0.544E+00   7   7   2  -0.220E+00   7   7   3  -0.185E+00   7   7   4  -0.688E+00   7   7   5  -0.681E+00
   7   7   6  -0.124E+00   7   8   1  -0.111E+00   7   8   2  -0.136E+01   7   8   3  -0.680E+00   7   8   4   0.313E-01
   7   8   5  -0.136E+01   7   8   6  -0.104E+00   7   8   7  -0.512E-01
   8   2   1   0.337E+00   8   3   1   0.508E-01   8   3   2  -0.170E+00   8   4   1  -0.137E+01   8   4   2   0.300E+00
   8   4   3  -0.677E+00   8   5   1   0.240E-01   8   5   2  -0.193E-01   8   5   3  -0.700E-01   8   5   4  -0.689E+00
   8   6   1   0.358E-01   8   6   2  -0.181E+00   8   6   3  -0.983E-01   8   6   4  -0.959E+00   8   6   5  -0.469E-01
   8   7   1  -0.223E+01   8   7   2   0.192E-01   8   7   3  -0.333E+01   8   7   4  -0.982E+00   8   7   5  -0.374E-01
   8   7   6  -0.687E+00   8   8   1  -0.531E-01   8   8   2  -0.179E+00   8   8   3  -0.571E-01   8   8   4  -0.384E+00
```

8	8	5	-0.632E-01	8	8	6	-0.112E+01	8	8	7	-0.247E-01									
9	2	1	-0.124E+00	9	3	1	-0.722E+00	9	3	2	0.898E-01	9	4	1	0.183E+00	9	4	2	0.107E+00	
9	4	3	0.123E+00	9	5	1	-0.151E+00	9	5	2	-0.547E+00	9	5	3	-0.654E+00	9	5	4	-0.432E-01	
9	6	1	-0.160E+00	9	6	2	-0.117E+01	9	6	3	-0.954E-01	9	6	4	-0.130E+01	9	6	5	-0.437E+00	
9	7	1	-0.216E-01	9	7	2	-0.129E+00	9	7	3	-0.101E+01	9	7	4	-0.962E+00	9	7	5	-0.978E+00	
9	7	6	-0.619E-01	9	8	1	-0.356E+00	9	8	2	-0.247E+01	9	8	3	-0.177E+01	9	8	4	-0.587E+00	
9	8	5	-0.920E-01	9	8	6	-0.154E+00	9	8	7	-0.242E+00									
10	2	1	-0.258E+00	10	3	1	-0.241E+00	10	3	2	-0.784E+00	10	4	1	0.772E-03	10	4	2	-0.125E-01	
10	4	3	-0.533E+00	10	5	1	-0.931E-01	10	5	2	-0.298E+00	10	5	3	-0.472E-01	10	5	4	-0.573E-02	
10	6	1	-0.202E+00	10	6	2	0.101E+00	10	6	3	-0.371E+00	10	6	4	-0.388E+00	10	6	5	-0.419E+00	
10	7	1	-0.923E-02	10	7	2	-0.347E+00	10	7	3	-0.474E+00	10	7	4	-0.210E+00	10	7	5	-0.498E-01	
10	7	6	-0.226E+00	10	8	1	-0.858E+00	10	8	2	-0.361E+00	10	8	3	-0.174E+01	10	8	4	0.198E-01	
10	8	5	-0.228E+01	10	8	6	-0.954E+00	10	8	7	-0.200E+01									
11	2	1	0.340E-01	11	3	1	0.282E+00	11	3	2	-0.321E+00	11	4	1	0.345E-01	11	4	2	-0.179E-01	
11	4	3	0.174E-01	11	5	1	0.173E-01	11	5	2	-0.434E+00	11	5	3	-0.707E+00	11	5	4	-0.167E+01	
11	6	1	-0.675E+00	11	6	2	-0.648E+00	11	6	3	-0.235E+00	11	6	4	-0.715E-01	11	6	5	-0.267E-01	
11	7	1	-0.113E+00	11	7	2	-0.297E+00	11	7	3	-0.292E+00	11	7	4	-0.107E+01	11	7	5	0.571E-02	
11	7	6	-0.287E+00	11	8	1	-0.577E+00	11	8	2	-0.409E-01	11	8	3	-0.227E+00	11	8	4	-0.277E+00	
11	8	5	-0.168E+00	11	8	6	-0.774E+00	11	8	7	-0.822E-01									
12	2	1	0.336E+00	12	3	1	0.269E+00	12	3	2	0.300E+00	12	4	1	0.219E+00	12	4	2	-0.860E+00	
12	4	3	0.126E+00	12	5	1	-0.158E-01	12	5	2	-0.215E+00	12	5	3	-0.287E+00	12	5	4	-0.574E+00	
12	6	1	-0.804E-01	12	6	2	0.973E-01	12	6	3	-0.509E-01	12	6	4	-0.121E+01	12	6	5	-0.835E+00	
12	7	1	-0.434E+00	12	7	2	-0.105E+00	12	7	3	-0.182E+00	12	7	4	-0.590E+00	12	7	5	0.106E-01	
12	7	6	-0.926E+00	12	8	1	-0.121E+01	12	8	2	-0.669E-01	12	8	3	-0.427E-01	12	8	4	-0.112E-02	
12	8	5	-0.532E+00	12	8	6	-0.432E+00	12	8	7	-0.740E+00									
13	2	1	-0.631E+00	13	3	1	-0.454E+00	13	3	2	-0.380E+00	13	4	1	-0.513E+00	13	4	2	0.253E+00	
13	4	3	0.319E+00	13	5	1	-0.116E+01	13	5	2	-0.377E+00	13	5	3	-0.130E+01	13	5	4	-0.215E+00	
13	6	1	-0.169E-01	13	6	2	-0.191E+01	13	6	3	-0.604E+00	13	6	4	-0.223E+01	13	6	5	-0.153E+00	
13	7	1	-0.431E+00	13	7	2	-0.286E+00	13	7	3	-0.728E+00	13	7	4	-0.155E+00	13	7	5	-0.472E+00	
13	7	6	-0.911E-01	13	8	1	-0.322E-01	13	8	2	-0.138E+00	13	8	3	-0.684E+00	13	8	4	0.366E-01	
13	8	5	-0.169E+01	13	8	6	-0.529E-01	13	8	7	-0.644E+00									
14	2	1	-0.117E-01	14	3	1	0.185E+00	14	3	2	-0.187E+00	14	4	1	-0.437E+00	14	4	2	0.298E+00	
14	4	3	0.283E+00	14	5	1	-0.164E+00	14	5	2	-0.393E-01	14	5	3	-0.811E+00	14	5	4	-0.390E+00	
14	6	1	-0.264E+00	14	6	2	-0.102E+01	14	6	3	-0.297E+00	14	6	4	-0.650E-01	14	6	5	0.166E-01	
14	7	1	-0.180E+00	14	7	2	-0.574E-01	14	7	3	-0.196E+01	14	7	4	-0.139E+01	14	7	5	-0.205E+00	
14	7	6	-0.352E-01	14	8	1	-0.286E+00	14	8	2	-0.201E+01	14	8	3	-0.420E+00	14	8	4	-0.110E+01	
14	8	5	-0.422E+00	14	8	6	0.289E-01	14	8	7	-0.121E+01									
15	2	1	0.274E+00	15	3	1	0.239E+00	15	3	2	0.197E+00	15	4	1	0.606E-01	15	4	2	-0.195E+00	
15	4	3	-0.120E-01	15	5	1	-0.188E+01	15	5	2	-0.899E-01	15	5	3	0.308E-02	15	5	4	0.571E-02	
15	6	1	-0.419E+00	15	6	2	0.170E-01	15	6	3	-0.735E-01	15	6	4	-0.136E+01	15	6	5	-0.109E+01	
15	7	1	-0.195E-01	15	7	2	-0.203E+01	15	7	3	-0.343E+00	15	7	4	-0.418E+00	15	7	5	-0.156E+01	
15	7	6	-0.604E-01	15	8	1	-0.135E+01	15	8	2	-0.117E+01	15	8	3	-0.405E+00	15	8	4	-0.863E+00	
15	8	5	-0.169E+00	15	8	6	-0.117E+01	15	8	7	0.662E-02									
16	2	1	0.324E+00	16	3	1	-0.797E+00	16	3	2	0.307E+00	16	4	1	-0.177E+00	16	4	2	0.310E+00	
16	4	3	-0.156E+00	16	5	1	0.231E-01	16	5	2	-0.209E+00	16	5	3	0.529E-02	16	5	4	-0.876E+00	
16	6	1	-0.474E+00	16	6	2	0.851E-01	16	6	3	-0.108E+01	16	6	4	-0.619E+00	16	6	5	-0.866E+00	
16	7	1	-0.119E+01	16	7	2	-0.172E-01	16	7	3	-0.827E+00	16	7	4	-0.202E+01	16	7	5	-0.168E+01	
16	7	6	-0.118E+01	16	8	1	-0.236E+00	16	8	2	-0.218E+01	16	8	3	-0.620E+00	16	8	4	-0.152E+00	
16	8	5	-0.367E-01	16	8	6	-0.117E+00	16	8	7	-0.206E-02									
17	2	1	0.330E+00	17	3	1	-0.752E-01	17	3	2	-0.233E+01	17	4	1	0.228E+00	17	4	2	0.271E+00	
17	4	3	-0.797E+00	17	5	1	-0.125E+01	17	5	2	-0.200E+00	17	5	3	-0.200E+00	17	5	4	0.366E+01	
17	6	1	-0.930E-01	17	6	2	0.891E-01	17	6	3	-0.141E+00	17	6	4	-0.205E+01	17	6	5	0.435E-01	
17	7	1	-0.123E+01	17	7	2	-0.459E+00	17	7	3	0.288E-01	17	7	4	-0.333E-01	17	7	5	-0.355E+00	
17	7	6	0.753E-02	17	8	1	-0.358E-01	17	8	2	-0.200E+01	17	8	3	-0.210E+01	17	8	4	-0.210E+00	
17	8	5	-0.872E+00	17	8	6	-0.276E-01	17	8	7	-0.169E+01									
18	2	1	0.237E+00	18	3	1	0.278E+00	18	3	2	0.148E+00	18	4	1	-0.209E+00	18	4	2	0.766E-02	
18	4	3	-0.150E+00	18	5	1	-0.217E+01	18	5	2	-0.118E+01	18	5	3	-0.459E+00	18	5	4	-0.119E+01	
18	6	1	-0.588E-02	18	6	2	0.592E-01	18	6	3	-0.813E-02	18	6	4	-0.954E-01	18	6	5	-0.157E+01	
18	7	1	-0.257E-01	18	7	2	-0.136E+00	18	7	3	-0.892E+00	18	7	4	-0.280E-01	18	7	5	-0.331E+00	
18	7	6	-0.795E+00	18	8	1	-0.154E+01	18	8	2	-0.106E+00	18	8	3	-0.901E+00	18	8	4	-0.713E-02	
18	8	5	-0.295E+00	18	8	6	-0.594E-01	18	8	7	-0.155E+01									
19	2	1	-0.186E+00	19	3	1	0.289E+00	19	3	2	0.110E+00	19	4	1	-0.182E+00	19	4	2	-0.111E+01	
19	4	3	0.195E+00	19	5	1	-0.234E+00	19	5	2	-0.222E-01	19	5	3	0.362E-02	19	5	4	0.136E-03	
19	6	1	-0.174E+01	19	6	2	-0.395E+00	19	6	3	-0.104E+01	19	6	4	-0.458E+00	19	6	5	-0.148E+00	
19	7	1	-0.204E+01	19	7	2	-0.724E+00	19	7	3	-0.159E+00	19	7	4	-0.436E+00	19	7	5	-0.304E+00	
19	7	6	-0.988E-01	19	8	1	-0.134E+01	19	8	2	-0.604E-01	19	8	3	-0.142E+00	19	8	4	-0.751E+00	
19	8	5	-0.103E+01	19	8	6	0.141E-01	19	8	7	-0.243E+00									
20	2	1	-0.739E+00	20	3	1	0.276E+00	20	3	2	-0.405E-01	20	4	1	0.236E+00	20	4	2	0.261E+00	
20	4	3	-0.200E+01	20	5	1	-0.207E+00	20	5	2	-0.148E+01	20	5	3	-0.401E+00	20	5	4	-0.520E+00	
20	6	1	-0.325E+00	20	6	2	-0.578E-01	20	6	3	-0.473E+00	20	6	4	-0.107E+01	20	6	5	0.317E-01	
20	7	1	-0.234E+00	20	7	2	0.819E-02	20	7	3	0.232E-03	20	7	4	-0.279E-01	20	7	5	-0.328E+00	
20	7	6	-0.127E+00	20	8	1	-0.154E+00	20	8	2	-0.615E-01	20	8	3	-0.186E+01	20	8	4	-0.374E+00	
20	8	5	0.158E-01	20	8	6	-0.169E+01	20	8	7	-0.280E-01									

CONTRIBUTIONS TO FINAL LOG LIKELIHOOD FUNCTION (SUBJECT, OBJECT, LIKELIHOOD)

1	1	-0.938E+00	1	2	-0.463E+01	1	3	-0.199E+01	1	4	-0.141E+01	1	5	-0.192E+01
1	1	-0.149E+01	1	2	-0.214E+01	1	3	-0.132E+01						
2	1	-0.182E+01	2	2	-0.146E+01	2	3	-0.132E+01	2	4	-0.166E+01	2	5	-0.129E+01
2	1	-0.253E+01	2	2	-0.129E+01	2	3	-0.135E+01						
3	1	-0.419E+01	3	2	-0.131E+01	3	3	-0.140E+01	3	4	-0.124E+01	3	5	-0.147E+01
3	1	-0.133E+01	3	2	-0.248E+01	3	3	-0.124E+01						
4	1	-0.172E+01	4	2	-0.126E+01	4	3	-0.108E+01	4	4	-0.913E+00	4	5	-0.182E+01
4	1	-0.229E+01	4	2	-0.134E+01	4	3	-0.122E+01						
5	1	-0.132E+01	5	2	-0.108E+01	5	3	-0.284E+01	5	4	-0.127E+01	5	5	-0.131E+01
5	1	-0.213E+01	5	2	-0.124E+01	5	3	-0.129E+01						
6	1	-0.206E+01	6	2	-0.139E+01	6	3	-0.132E+01	6	4	-0.139E+01	6	5	-0.240E+01
6	1	-0.164E+01	6	2	-0.129E+01	6	3	-0.220E+01						

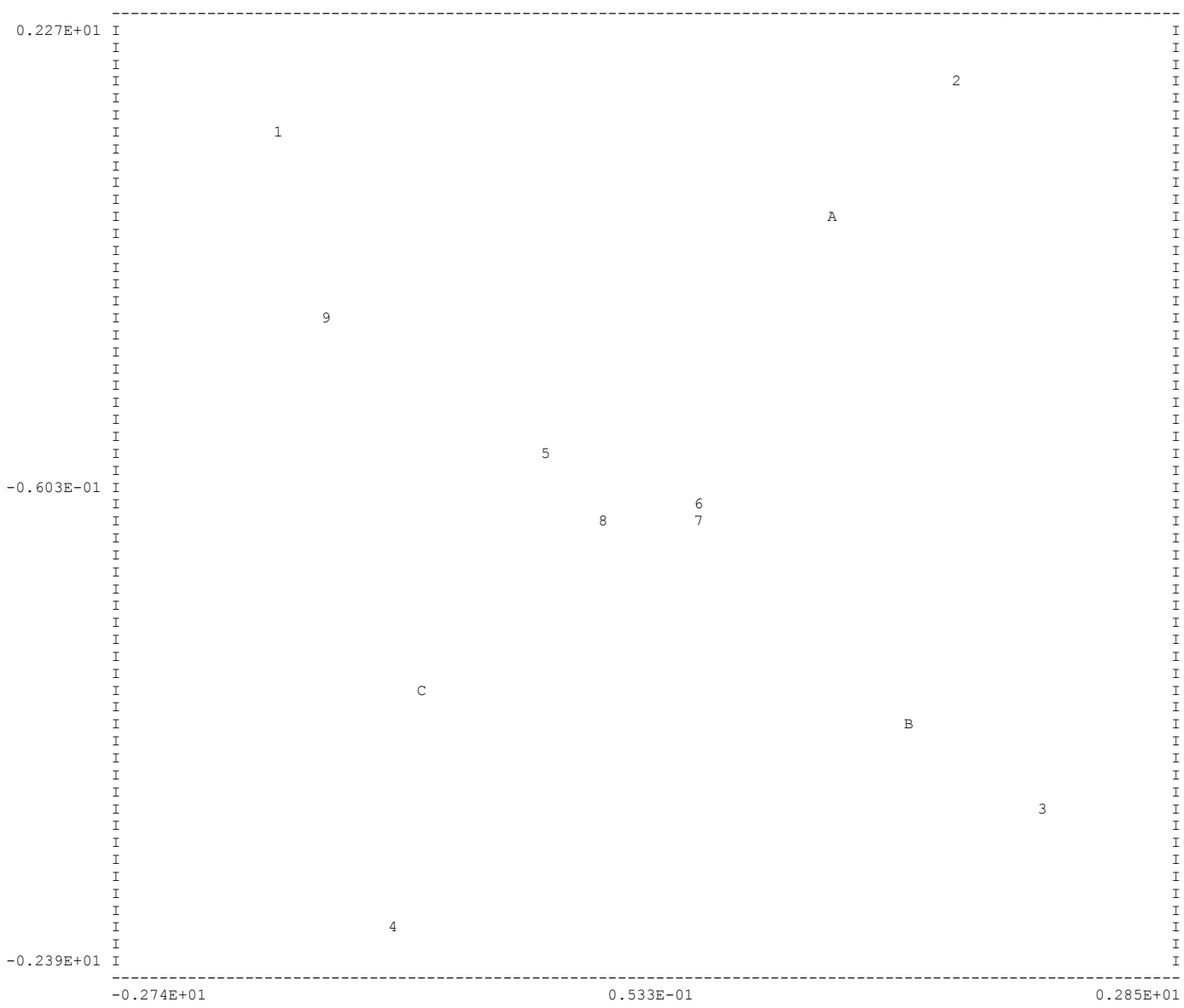
7	1	-0.193E+01	7	2	-0.187E+01	7	3	-0.898E+00	7	4	-0.105E+01	7	5	-0.291E+01
7	1	-0.129E+01	7	2	-0.131E+01	7	3	-0.124E+01						
8	1	-0.140E+01	8	2	-0.126E+01	8	3	-0.114E+01	8	4	-0.913E+00	8	5	-0.182E+01
8	1	-0.139E+01	8	2	-0.214E+01	8	3	-0.182E+01						
9	1	-0.938E+00	9	2	-0.108E+01	9	3	-0.199E+01	9	4	-0.197E+01	9	5	-0.181E+01
9	1	-0.149E+01	9	2	-0.147E+01	9	3	-0.132E+01						
10	1	-0.105E+01	10	2	-0.139E+01	10	3	-0.125E+01	10	4	-0.434E+01	10	5	-0.171E+01
10	1	-0.129E+01	10	2	-0.174E+01	10	3	-0.131E+01						
11	1	-0.125E+01	11	2	-0.262E+01	11	3	-0.145E+01	11	4	-0.124E+01	11	5	-0.157E+01
11	1	-0.133E+01	11	2	-0.131E+01	11	3	-0.229E+01						
12	1	-0.277E+01	12	2	-0.126E+01	12	3	-0.114E+01	12	4	-0.913E+00	12	5	-0.129E+01
12	1	-0.139E+01	12	2	-0.169E+01	12	3	-0.182E+01						
13	1	-0.132E+01	13	2	-0.124E+01	13	3	-0.176E+01	13	4	-0.141E+01	13	5	-0.122E+01
13	1	-0.149E+01	13	2	-0.152E+01	13	3	-0.235E+01						
14	1	-0.118E+01	14	2	-0.139E+01	14	3	-0.125E+01	14	4	-0.125E+01	14	5	-0.213E+01
14	1	-0.235E+01	14	2	-0.129E+01	14	3	-0.131E+01						
15	1	-0.193E+01	15	2	-0.132E+01	15	3	-0.898E+00	15	4	-0.105E+01	15	5	-0.125E+01
15	1	-0.198E+01	15	2	-0.131E+01	15	3	-0.124E+01						
16	1	-0.131E+01	16	2	-0.126E+01	16	3	-0.114E+01	16	4	-0.161E+01	16	5	-0.182E+01
16	1	-0.139E+01	16	2	-0.131E+01	16	3	-0.122E+01						
17	1	-0.149E+01	17	2	-0.165E+01	17	3	-0.284E+01	17	4	-0.197E+01	17	5	-0.131E+01
17	1	-0.121E+01	17	2	-0.302E+01	17	3	-0.217E+01						
18	1	-0.118E+01	18	2	-0.139E+01	18	3	-0.132E+01	18	4	-0.166E+01	18	5	-0.171E+01
18	1	-0.129E+01	18	2	-0.126E+01	18	3	-0.135E+01						
19	1	-0.125E+01	19	2	-0.131E+01	19	3	-0.898E+00	19	4	-0.124E+01	19	5	-0.157E+01
19	1	-0.129E+01	19	2	-0.131E+01	19	3	-0.124E+01						
20	1	-0.191E+01	20	2	-0.126E+01	20	3	-0.108E+01	20	4	-0.365E+01	20	5	-0.129E+01
20	1	-0.164E+01	20	2	-0.169E+01	20	3	-0.136E+01						
21	1	-0.249E+01	21	2	-0.108E+01	21	3	-0.123E+01	21	4	-0.127E+01	21	5	-0.122E+01
21	1	-0.277E+01	21	2	-0.261E+01	21	3	-0.129E+01						
22	1	-0.182E+01	22	2	-0.238E+01	22	3	-0.404E+01	22	4	-0.166E+01	22	5	-0.129E+01
22	1	-0.235E+01	22	2	-0.126E+01	22	3	-0.135E+01						
23	1	-0.126E+01	23	2	-0.187E+01	23	3	-0.140E+01	23	4	-0.105E+01	23	5	-0.157E+01
23	1	-0.133E+01	23	2	-0.125E+01	23	3	-0.161E+01						
24	1	-0.191E+01	24	2	-0.199E+01	24	3	-0.429E+01	24	4	-0.132E+01	24	5	-0.182E+01
24	1	-0.139E+01	24	2	-0.169E+01	24	3	-0.122E+01						
25	1	-0.132E+01	25	2	-0.165E+01	25	3	-0.199E+01	25	4	-0.166E+01	25	5	-0.192E+01
25	1	-0.149E+01	25	2	-0.302E+01	25	3	-0.129E+01						
26	1	-0.105E+01	26	2	-0.929E+00	26	3	-0.132E+01	26	4	-0.125E+01	26	5	-0.130E+01
26	1	-0.235E+01	26	2	-0.174E+01	26	3	-0.220E+01						
27	1	-0.178E+01	27	2	-0.187E+01	27	3	-0.140E+01	27	4	-0.105E+01	27	5	-0.157E+01
27	1	-0.129E+01	27	2	-0.125E+01	27	3	-0.161E+01						
28	1	-0.140E+01	28	2	-0.126E+01	28	3	-0.213E+01	28	4	-0.231E+01	28	5	-0.129E+01
28	1	-0.225E+01	28	2	-0.214E+01	28	3	-0.186E+01						
29	1	-0.132E+01	29	2	-0.108E+01	29	3	-0.120E+01	29	4	-0.141E+01	29	5	-0.192E+01
29	1	-0.213E+01	29	2	-0.302E+01	29	3	-0.217E+01						
30	1	-0.182E+01	30	2	-0.139E+01	30	3	-0.125E+01	30	4	-0.125E+01	30	5	-0.129E+01
30	1	-0.164E+01	30	2	-0.129E+01	30	3	-0.131E+01						
31	1	-0.126E+01	31	2	-0.132E+01	31	3	-0.898E+00	31	4	-0.124E+01	31	5	-0.125E+01
31	1	-0.176E+01	31	2	-0.201E+01	31	3	-0.124E+01						
32	1	-0.131E+01	32	2	-0.126E+01	32	3	-0.108E+01	32	4	-0.365E+01	32	5	-0.129E+01
32	1	-0.229E+01	32	2	-0.131E+01	32	3	-0.136E+01						
33	1	-0.938E+00	33	2	-0.165E+01	33	3	-0.120E+01	33	4	-0.288E+01	33	5	-0.131E+01
33	1	-0.121E+01	33	2	-0.124E+01	33	3	-0.129E+01						
34	1	-0.118E+01	34	2	-0.146E+01	34	3	-0.186E+01	34	4	-0.125E+01	34	5	-0.240E+01
34	1	-0.253E+01	34	2	-0.126E+01	34	3	-0.231E+01						
35	1	-0.125E+01	35	2	-0.187E+01	35	3	-0.898E+00	35	4	-0.124E+01	35	5	-0.147E+01
35	1	-0.198E+01	35	2	-0.201E+01	35	3	-0.124E+01						
36	1	-0.140E+01	36	2	-0.199E+01	36	3	-0.114E+01	36	4	-0.161E+01	36	5	-0.129E+01
36	1	-0.225E+01	36	2	-0.134E+01	36	3	-0.122E+01						
37	1	-0.149E+01	37	2	-0.284E+01	37	3	-0.437E+01	37	4	-0.166E+01	37	5	-0.192E+01
37	1	-0.149E+01	37	2	-0.261E+01	37	3	-0.129E+01						
38	1	-0.118E+01	38	2	-0.139E+01	38	3	-0.132E+01	38	4	-0.199E+01	38	5	-0.213E+01
38	1	-0.164E+01	38	2	-0.244E+01	38	3	-0.131E+01						
39	1	-0.125E+01	39	2	-0.131E+01	39	3	-0.145E+01	39	4	-0.210E+01	39	5	-0.147E+01
39	1	-0.244E+01	39	2	-0.131E+01	39	3	-0.241E+01						
40	1	-0.131E+01	40	2	-0.126E+01	40	3	-0.114E+01	40	4	-0.161E+01	40	5	-0.182E+01
40	1	-0.130E+01	40	2	-0.522E+01	40	3	-0.122E+01						
41	1	-0.132E+01	41	2	-0.124E+01	41	3	-0.123E+01	41	4	-0.127E+01	41	5	-0.181E+01
41	1	-0.149E+01	41	2	-0.302E+01	41	3	-0.235E+01						
42	1	-0.182E+01	42	2	-0.139E+01	42	3	-0.132E+01	42	4	-0.276E+01	42	5	-0.429E+01
42	1	-0.164E+01	42	2	-0.126E+01	42	3	-0.135E+01						
43	1	-0.125E+01	43	2	-0.324E+01	43	3	-0.145E+01	43	4	-0.172E+01	43	5	-0.147E+01
43	1	-0.198E+01	43	2	-0.125E+01	43	3	-0.161E+01						
44	1	-0.172E+01	44	2	-0.298E+01	44	3	-0.108E+01	44	4	-0.913E+00	44	5	-0.182E+01
44	1	-0.130E+01	44	2	-0.131E+01	44	3	-0.182E+01						
45	1	-0.132E+01	45	2	-0.124E+01	45	3	-0.123E+01	45	4	-0.141E+01	45	5	-0.181E+01
45	1	-0.213E+01	45	2	-0.124E+01	45	3	-0.129E+01						
46	1	-0.182E+01	46	2	-0.139E+01	46	3	-0.125E+01	46	4	-0.125E+01	46	5	-0.129E+01
46	1	-0.164E+01	46	2	-0.129E+01	46	3	-0.131E+01						
47	1	-0.178E+01	47	2	-0.524E+01	47	3	-0.145E+01	47	4	-0.172E+01	47	5	-0.157E+01
47	1	-0.129E+01	47	2	-0.177E+01	47	3	-0.124E+01						
48	1	-0.191E+01	48	2	-0.141E+01	48	3	-0.108E+01	48	4	-0.913E+00	48	5	-0.182E+01
48	1	-0.229E+01	48	2	-0.131E+01	48	3	-0.186E+01						
49	1	-0.132E+01	49	2	-0.284E+01	49	3	-0.284E+01	49	4	-0.127E+01	49	5	-0.181E+01
49	1	-0.121E+01	49	2	-0.214E+01	49	3	-0.132E+01						
50	1	-0.118E+01	50	2	-0.238E+01	50	3	-0.125E+01	50	4	-0.125E+01	50	5	-0.429E+01
50	1	-0.253E+01	50	2	-0.213E+01	50	3	-0.131E+01						
51	1	-0.126E+01	51	2	-0.131E+01	51	3	-0.246E+01	51	4	-0.124E+01	51	5	-0.285E+01

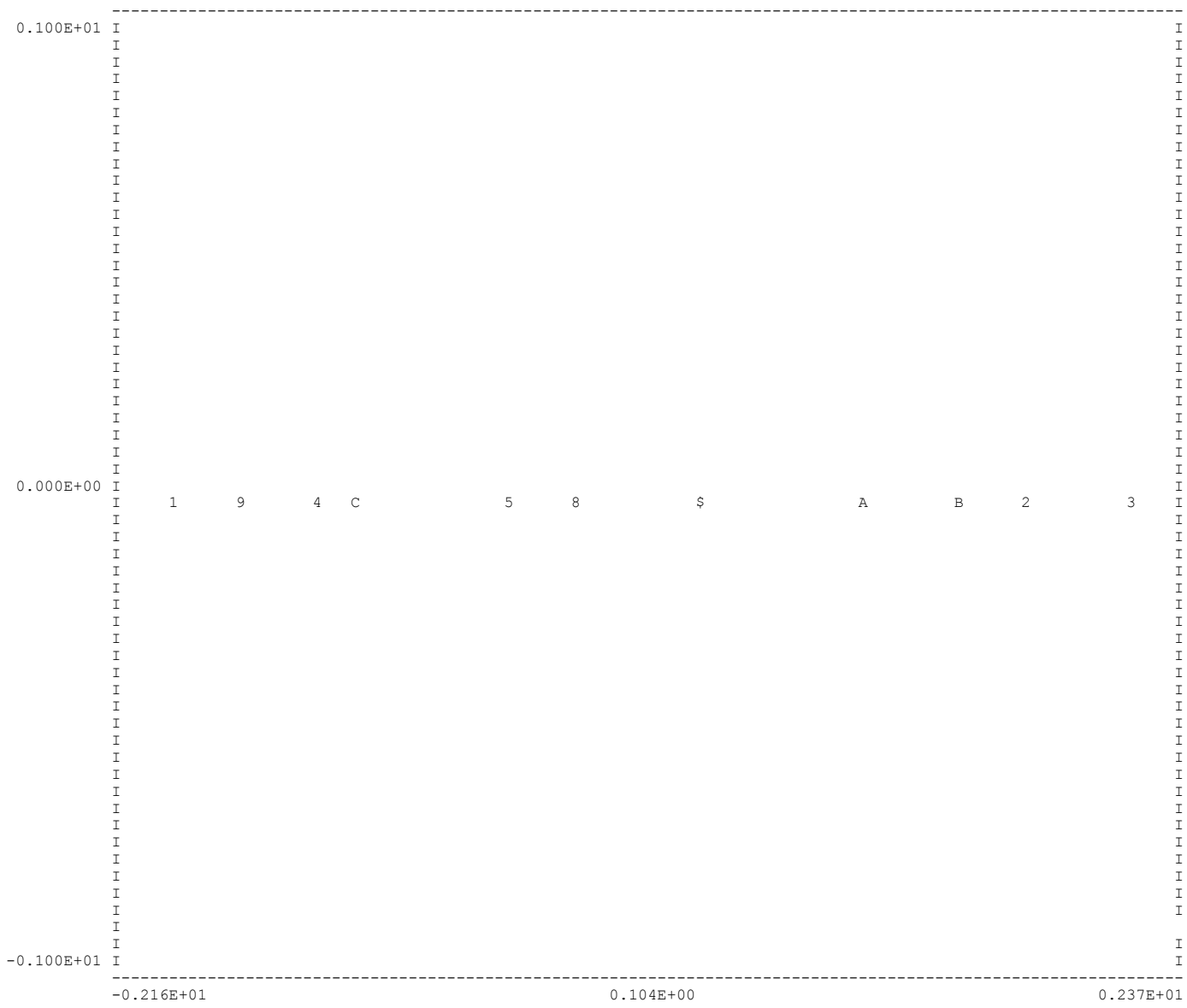
51	1	-0.129E+01	51	2	-0.125E+01	51	3	-0.161E+01						
52	1	-0.140E+01	52	2	-0.141E+01	52	3	-0.213E+01	52	4	-0.132E+01	52	5	-0.183E+01
52	1	-0.304E+01	52	2	-0.131E+01	52	3	-0.186E+01						
53	1	-0.938E+00	53	2	-0.108E+01	53	3	-0.199E+01	53	4	-0.276E+01	53	5	-0.131E+01
53	1	-0.149E+01	53	2	-0.147E+01	53	3	-0.169E+01						
54	1	-0.105E+01	54	2	-0.929E+00	54	3	-0.404E+01	54	4	-0.199E+01	54	5	-0.213E+01
54	1	-0.121E+01	54	2	-0.126E+01	54	3	-0.131E+01						
55	1	-0.178E+01	55	2	-0.131E+01	55	3	-0.140E+01	55	4	-0.172E+01	55	5	-0.157E+01
55	1	-0.198E+01	55	2	-0.177E+01	55	3	-0.136E+01						
56	1	-0.191E+01	56	2	-0.298E+01	56	3	-0.108E+01	56	4	-0.913E+00	56	5	-0.183E+01
56	1	-0.164E+01	56	2	-0.214E+01	56	3	-0.122E+01						
57	1	-0.132E+01	57	2	-0.108E+01	57	3	-0.176E+01	57	4	-0.276E+01	57	5	-0.122E+01
57	1	-0.213E+01	57	2	-0.152E+01	57	3	-0.235E+01						
58	1	-0.105E+01	58	2	-0.139E+01	58	3	-0.132E+01	58	4	-0.125E+01	58	5	-0.129E+01
58	1	-0.121E+01	58	2	-0.126E+01	58	3	-0.220E+01						
59	1	-0.125E+01	59	2	-0.132E+01	59	3	-0.145E+01	59	4	-0.124E+01	59	5	-0.157E+01
59	1	-0.129E+01	59	2	-0.177E+01	59	3	-0.124E+01						
60	1	-0.140E+01	60	2	-0.141E+01	60	3	-0.108E+01	60	4	-0.161E+01	60	5	-0.182E+01
60	1	-0.130E+01	60	2	-0.134E+01	60	3	-0.122E+01						
61	1	-0.149E+01	61	2	-0.165E+01	61	3	-0.123E+01	61	4	-0.127E+01	61	5	-0.122E+01
61	1	-0.149E+01	61	2	-0.147E+01	61	3	-0.129E+01						
62	1	-0.357E+01	62	2	-0.146E+01	62	3	-0.132E+01	62	4	-0.125E+01	62	5	-0.213E+01
62	1	-0.235E+01	62	2	-0.126E+01	62	3	-0.231E+01						
63	1	-0.345E+01	63	2	-0.131E+01	63	3	-0.145E+01	63	4	-0.210E+01	63	5	-0.125E+01
63	1	-0.133E+01	63	2	-0.547E+01	63	3	-0.229E+01						
64	1	-0.131E+01	64	2	-0.126E+01	64	3	-0.181E+01	64	4	-0.231E+01	64	5	-0.183E+01
64	1	-0.229E+01	64	2	-0.134E+01	64	3	-0.186E+01						
65	1	-0.938E+00	65	2	-0.108E+01	65	3	-0.176E+01	65	4	-0.141E+01	65	5	-0.131E+01
65	1	-0.121E+01	65	2	-0.147E+01	65	3	-0.235E+01						
66	1	-0.105E+01	66	2	-0.139E+01	66	3	-0.132E+01	66	4	-0.125E+01	66	5	-0.240E+01
66	1	-0.324E+01	66	2	-0.174E+01	66	3	-0.168E+01						
67	1	-0.125E+01	67	2	-0.132E+01	67	3	-0.898E+00	67	4	-0.124E+01	67	5	-0.147E+01
67	1	-0.133E+01	67	2	-0.125E+01	67	3	-0.241E+01						
68	1	-0.131E+01	68	2	-0.298E+01	68	3	-0.114E+01	68	4	-0.132E+01	68	5	-0.129E+01
68	1	-0.130E+01	68	2	-0.134E+01	68	3	-0.182E+01						
69	1	-0.249E+01	69	2	-0.124E+01	69	3	-0.284E+01	69	4	-0.127E+01	69	5	-0.131E+01
69	1	-0.149E+01	69	2	-0.302E+01	69	3	-0.132E+01						
70	1	-0.118E+01	70	2	-0.929E+00	70	3	-0.180E+01	70	4	-0.139E+01	70	5	-0.213E+01
70	1	-0.129E+01	70	2	-0.126E+01	70	3	-0.231E+01						
71	1	-0.125E+01	71	2	-0.178E+01	71	3	-0.898E+00	71	4	-0.105E+01	71	5	-0.147E+01
71	1	-0.176E+01	71	2	-0.248E+01	71	3	-0.241E+01						
72	1	-0.140E+01	72	2	-0.126E+01	72	3	-0.108E+01	72	4	-0.132E+01	72	5	-0.129E+01
72	1	-0.229E+01	72	2	-0.131E+01	72	3	-0.136E+01						
73	1	-0.132E+01	73	2	-0.124E+01	73	3	-0.284E+01	73	4	-0.276E+01	73	5	-0.457E+01
73	1	-0.213E+01	73	2	-0.124E+01	73	3	-0.169E+01						
74	1	-0.206E+01	74	2	-0.238E+01	74	3	-0.132E+01	74	4	-0.139E+01	74	5	-0.129E+01
74	1	-0.129E+01	74	2	-0.426E+01	74	3	-0.168E+01						
75	1	-0.178E+01	75	2	-0.131E+01	75	3	-0.140E+01	75	4	-0.124E+01	75	5	-0.125E+01
75	1	-0.198E+01	75	2	-0.248E+01	75	3	-0.136E+01						
76	1	-0.172E+01	76	2	-0.126E+01	76	3	-0.114E+01	76	4	-0.132E+01	76	5	-0.129E+01
76	1	-0.229E+01	76	2	-0.131E+01	76	3	-0.182E+01						
77	1	-0.938E+00	77	2	-0.124E+01	77	3	-0.123E+01	77	4	-0.141E+01	77	5	-0.192E+01
77	1	-0.149E+01	77	2	-0.147E+01	77	3	-0.169E+01						
78	1	-0.105E+01	78	2	-0.146E+01	78	3	-0.325E+01	78	4	-0.139E+01	78	5	-0.130E+01
78	1	-0.253E+01	78	2	-0.129E+01	78	3	-0.168E+01						
79	1	-0.193E+01	79	2	-0.132E+01	79	3	-0.140E+01	79	4	-0.105E+01	79	5	-0.125E+01
79	1	-0.129E+01	79	2	-0.131E+01	79	3	-0.136E+01						
80	1	-0.131E+01	80	2	-0.199E+01	80	3	-0.114E+01	80	4	-0.132E+01	80	5	-0.139E+01
80	1	-0.164E+01	80	2	-0.169E+01	80	3	-0.136E+01						
81	1	-0.132E+01	81	2	-0.165E+01	81	3	-0.123E+01	81	4	-0.166E+01	81	5	-0.131E+01
81	1	-0.277E+01	81	2	-0.124E+01	81	3	-0.132E+01						
82	1	-0.105E+01	82	2	-0.146E+01	82	3	-0.125E+01	82	4	-0.125E+01	82	5	-0.213E+01
82	1	-0.129E+01	82	2	-0.213E+01	82	3	-0.131E+01						
83	1	-0.126E+01	83	2	-0.178E+01	83	3	-0.898E+00	83	4	-0.124E+01	83	5	-0.285E+01
83	1	-0.133E+01	83	2	-0.125E+01	83	3	-0.124E+01						
84	1	-0.172E+01	84	2	-0.126E+01	84	3	-0.213E+01	84	4	-0.913E+00	84	5	-0.129E+01
84	1	-0.304E+01	84	2	-0.131E+01	84	3	-0.182E+01						
85	1	-0.149E+01	85	2	-0.463E+01	85	3	-0.123E+01	85	4	-0.276E+01	85	5	-0.181E+01
85	1	-0.149E+01	85	2	-0.214E+01	85	3	-0.129E+01						
86	1	-0.105E+01	86	2	-0.146E+01	86	3	-0.125E+01	86	4	-0.166E+01	86	5	-0.130E+01
86	1	-0.164E+01	86	2	-0.126E+01	86	3	-0.312E+01						
87	1	-0.126E+01	87	2	-0.132E+01	87	3	-0.140E+01	87	4	-0.105E+01	87	5	-0.125E+01
87	1	-0.176E+01	87	2	-0.131E+01	87	3	-0.136E+01						
88	1	-0.191E+01	88	2	-0.126E+01	88	3	-0.181E+01	88	4	-0.132E+01	88	5	-0.183E+01
88	1	-0.130E+01	88	2	-0.169E+01	88	3	-0.182E+01						
89	1	-0.132E+01	89	2	-0.108E+01	89	3	-0.123E+01	89	4	-0.141E+01	89	5	-0.122E+01
89	1	-0.149E+01	89	2	-0.152E+01	89	3	-0.422E+01						
90	1	-0.118E+01	90	2	-0.146E+01	90	3	-0.125E+01	90	4	-0.166E+01	90	5	-0.129E+01
90	1	-0.121E+01	90	2	-0.426E+01	90	3	-0.135E+01						
91	1	-0.126E+01	91	2	-0.187E+01	91	3	-0.145E+01	91	4	-0.105E+01	91	5	-0.125E+01
91	1	-0.176E+01	91	2	-0.131E+01	91	3	-0.320E+01						
92	1	-0.140E+01	92	2	-0.165E+01	92	3	-0.324E+01	92	4	-0.161E+01	92	5	-0.129E+01
92	1	-0.139E+01	92	2	-0.233E+01	92	3	-0.258E+01						
93	1	-0.132E+01	93	2	-0.124E+01	93	3	-0.176E+01	93	4	-0.197E+01	93	5	-0.257E+01
93	1	-0.149E+01	93	2	-0.147E+01	93	3	-0.217E+01						
94	1	-0.105E+01	94	2	-0.929E+00	94	3	-0.125E+01	94	4	-0.166E+01	94	5	-0.130E+01
94	1	-0.235E+01	94	2	-0.329E+01	94	3	-0.168E+01						
95	1	-0.126E+01	95	2	-0.178E+01	95	3	-0.145E+01	95	4	-0.105E+01	95	5	-0.125E+01
95	1	-0.244E+01	95	2	-0.131E+01	95	3	-0.241E+01						

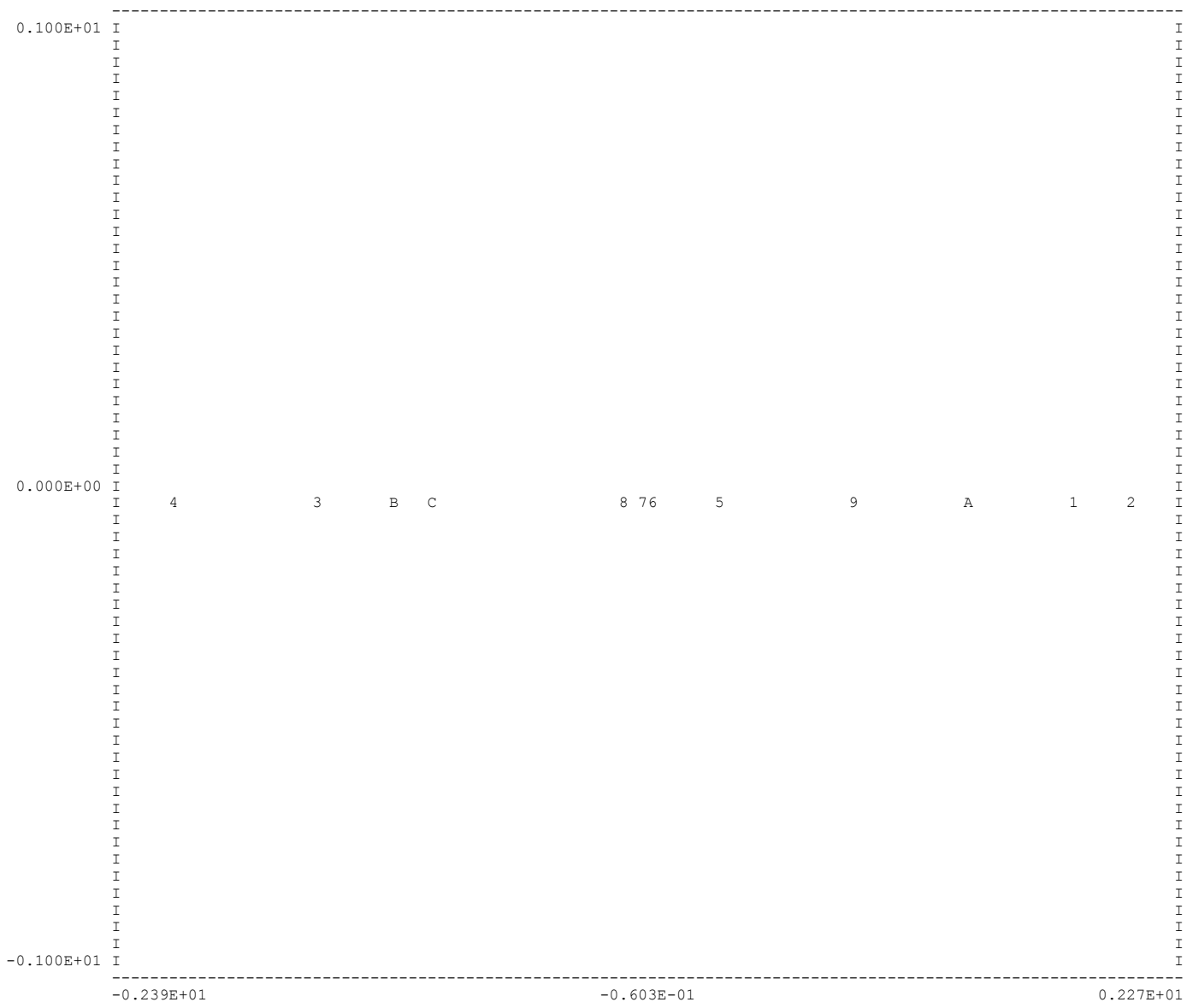
96	1	-0.279E+01	96	2	-0.199E+01	96	3	-0.108E+01	96	4	-0.231E+01	96	5	-0.129E+01
96	1	-0.399E+01	96	2	-0.316E+01	96	3	-0.186E+01						
97	1	-0.132E+01	97	2	-0.124E+01	97	3	-0.199E+01	97	4	-0.166E+01	97	5	-0.131E+01
97	1	-0.121E+01	97	2	-0.261E+01	97	3	-0.321E+01						
98	1	-0.118E+01	98	2	-0.139E+01	98	3	-0.125E+01	98	4	-0.139E+01	98	5	-0.129E+01
98	1	-0.129E+01	98	2	-0.126E+01	98	3	-0.168E+01						
99	1	-0.278E+01	99	2	-0.262E+01	99	3	-0.140E+01	99	4	-0.172E+01	99	5	-0.125E+01
99	1	-0.129E+01	99	2	-0.437E+01	99	3	-0.229E+01						
100	1	-0.131E+01	100	2	-0.269E+01	100	3	-0.114E+01	100	4	-0.132E+01	100	5	-0.249E+01
100	1	-0.130E+01	100	2	-0.169E+01	100	3	-0.186E+01						
101	1	-0.938E+00	101	2	-0.124E+01	101	3	-0.284E+01	101	4	-0.141E+01	101	5	-0.181E+01
101	1	-0.149E+01	101	2	-0.152E+01	101	3	-0.235E+01						
102	1	-0.105E+01	102	2	-0.146E+01	102	3	-0.125E+01	102	4	-0.139E+01	102	5	-0.130E+01
102	1	-0.164E+01	102	2	-0.126E+01	102	3	-0.312E+01						
103	1	-0.126E+01	103	2	-0.187E+01	103	3	-0.898E+00	103	4	-0.105E+01	103	5	-0.203E+01
103	1	-0.244E+01	103	2	-0.131E+01	103	3	-0.320E+01						
104	1	-0.131E+01	104	2	-0.165E+01	104	3	-0.114E+01	104	4	-0.913E+00	104	5	-0.139E+01
104	1	-0.164E+01	104	2	-0.131E+01	104	3	-0.186E+01						
105	1	-0.149E+01	105	2	-0.124E+01	105	3	-0.123E+01	105	4	-0.197E+01	105	5	-0.122E+01
105	1	-0.121E+01	105	2	-0.214E+01	105	3	-0.169E+01						
106	1	-0.105E+01	106	2	-0.929E+00	106	3	-0.180E+01	106	4	-0.139E+01	106	5	-0.129E+01
106	1	-0.129E+01	106	2	-0.174E+01	106	3	-0.511E+01						
107	1	-0.178E+01	107	2	-0.131E+01	107	3	-0.898E+00	107	4	-0.124E+01	107	5	-0.147E+01
107	1	-0.244E+01	107	2	-0.248E+01	107	3	-0.136E+01						
108	1	-0.131E+01	108	2	-0.298E+01	108	3	-0.324E+01	108	4	-0.161E+01	108	5	-0.182E+01
108	1	-0.164E+01	108	2	-0.131E+01	108	3	-0.182E+01						
109	1	-0.938E+00	109	2	-0.108E+01	109	3	-0.123E+01	109	4	-0.127E+01	109	5	-0.131E+01
109	1	-0.149E+01	109	2	-0.147E+01	109	3	-0.169E+01						
110	1	-0.182E+01	110	2	-0.929E+00	110	3	-0.132E+01	110	4	-0.139E+01	110	5	-0.213E+01
110	1	-0.129E+01	110	2	-0.129E+01	110	3	-0.131E+01						
111	1	-0.125E+01	111	2	-0.132E+01	111	3	-0.145E+01	111	4	-0.210E+01	111	5	-0.125E+01
111	1	-0.198E+01	111	2	-0.201E+01	111	3	-0.136E+01						
112	1	-0.191E+01	112	2	-0.199E+01	112	3	-0.108E+01	112	4	-0.132E+01	112	5	-0.139E+01
112	1	-0.164E+01	112	2	-0.134E+01	112	3	-0.122E+01						
113	1	-0.132E+01	113	2	-0.124E+01	113	3	-0.123E+01	113	4	-0.141E+01	113	5	-0.122E+01
113	1	-0.149E+01	113	2	-0.147E+01	113	3	-0.169E+01						
114	1	-0.105E+01	114	2	-0.929E+00	114	3	-0.186E+01	114	4	-0.166E+01	114	5	-0.240E+01
114	1	-0.121E+01	114	2	-0.244E+01	114	3	-0.131E+01						
115	1	-0.126E+01	115	2	-0.132E+01	115	3	-0.898E+00	115	4	-0.124E+01	115	5	-0.157E+01
115	1	-0.244E+01	115	2	-0.125E+01	115	3	-0.124E+01						
116	1	-0.140E+01	116	2	-0.126E+01	116	3	-0.114E+01	116	4	-0.231E+01	116	5	-0.139E+01
116	1	-0.225E+01	116	2	-0.169E+01	116	3	-0.122E+01						
117	1	-0.149E+01	117	2	-0.124E+01	117	3	-0.120E+01	117	4	-0.141E+01	117	5	-0.192E+01
117	1	-0.303E+01	117	2	-0.152E+01	117	3	-0.129E+01						
118	1	-0.105E+01	118	2	-0.146E+01	118	3	-0.180E+01	118	4	-0.139E+01	118	5	-0.130E+01
118	1	-0.121E+01	118	2	-0.174E+01	118	3	-0.135E+01						
119	1	-0.193E+01	119	2	-0.378E+01	119	3	-0.246E+01	119	4	-0.105E+01	119	5	-0.157E+01
119	1	-0.133E+01	119	2	-0.131E+01	119	3	-0.161E+01						
120	1	-0.172E+01	120	2	-0.199E+01	120	3	-0.108E+01	120	4	-0.161E+01	120	5	-0.129E+01
120	1	-0.225E+01	120	2	-0.169E+01	120	3	-0.136E+01						
121	1	-0.149E+01	121	2	-0.108E+01	121	3	-0.120E+01	121	4	-0.127E+01	121	5	-0.257E+01
121	1	-0.149E+01	121	2	-0.124E+01	121	3	-0.235E+01						
122	1	-0.118E+01	122	2	-0.139E+01	122	3	-0.186E+01	122	4	-0.487E+01	122	5	-0.129E+01
122	1	-0.164E+01	122	2	-0.174E+01	122	3	-0.168E+01						
123	1	-0.178E+01	123	2	-0.131E+01	123	3	-0.898E+00	123	4	-0.124E+01	123	5	-0.125E+01
123	1	-0.176E+01	123	2	-0.201E+01	123	3	-0.136E+01						
124	1	-0.277E+01	124	2	-0.199E+01	124	3	-0.181E+01	124	4	-0.132E+01	124	5	-0.183E+01
124	1	-0.225E+01	124	2	-0.134E+01	124	3	-0.258E+01						
125	1	-0.377E+01	125	2	-0.165E+01	125	3	-0.123E+01	125	4	-0.141E+01	125	5	-0.131E+01
125	1	-0.303E+01	125	2	-0.152E+01	125	3	-0.217E+01						
126	1	-0.105E+01	126	2	-0.146E+01	126	3	-0.132E+01	126	4	-0.125E+01	126	5	-0.130E+01
126	1	-0.235E+01	126	2	-0.126E+01	126	3	-0.168E+01						
127	1	-0.178E+01	127	2	-0.187E+01	127	3	-0.145E+01	127	4	-0.172E+01	127	5	-0.125E+01
127	1	-0.129E+01	127	2	-0.125E+01	127	3	-0.136E+01						
128	1	-0.172E+01	128	2	-0.141E+01	128	3	-0.108E+01	128	4	-0.161E+01	128	5	-0.182E+01
128	1	-0.130E+01	128	2	-0.131E+01	128	3	-0.122E+01						
129	1	-0.132E+01	129	2	-0.124E+01	129	3	-0.123E+01	129	4	-0.141E+01	129	5	-0.257E+01
129	1	-0.121E+01	129	2	-0.152E+01	129	3	-0.132E+01						
130	1	-0.118E+01	130	2	-0.139E+01	130	3	-0.132E+01	130	4	-0.199E+01	130	5	-0.327E+01
130	1	-0.164E+01	130	2	-0.174E+01	130	3	-0.231E+01						
131	1	-0.178E+01	131	2	-0.131E+01	131	3	-0.898E+00	131	4	-0.124E+01	131	5	-0.125E+01
131	1	-0.133E+01	131	2	-0.125E+01	131	3	-0.136E+01						
132	1	-0.140E+01	132	2	-0.269E+01	132	3	-0.114E+01	132	4	-0.913E+00	132	5	-0.139E+01
132	1	-0.225E+01	132	2	-0.134E+01	132	3	-0.122E+01						
133	1	-0.938E+00	133	2	-0.124E+01	133	3	-0.123E+01	133	4	-0.141E+01	133	5	-0.131E+01
133	1	-0.121E+01	133	2	-0.147E+01	133	3	-0.169E+01						
134	1	-0.566E+01	134	2	-0.139E+01	134	3	-0.325E+01	134	4	-0.299E+01	134	5	-0.130E+01
134	1	-0.164E+01	134	2	-0.244E+01	134	3	-0.131E+01						
135	1	-0.125E+01	135	2	-0.131E+01	135	3	-0.898E+00	135	4	-0.124E+01	135	5	-0.125E+01
135	1	-0.129E+01	135	2	-0.177E+01	135	3	-0.136E+01						
136	1	-0.172E+01	136	2	-0.298E+01	136	3	-0.114E+01	136	4	-0.132E+01	136	5	-0.249E+01
136	1	-0.139E+01	136	2	-0.233E+01	136	3	-0.136E+01						
137	1	-0.132E+01	137	2	-0.124E+01	137	3	-0.120E+01	137	4	-0.141E+01	137	5	-0.181E+01
137	1	-0.149E+01	137	2	-0.214E+01	137	3	-0.132E+01						
138	1	-0.105E+01	138	2	-0.929E+00	138	3	-0.325E+01	138	4	-0.125E+01	138	5	-0.129E+01
138	1	-0.164E+01	138	2	-0.126E+01	138	3	-0.220E+01						
139	1	-0.178E+01	139	2	-0.262E+01	139	3	-0.898E+00	139	4	-0.105E+01	139	5	-0.147E+01
139	1	-0.198E+01	139	2	-0.125E+01	139	3	-0.161E+01						
140	1	-0.140E+01	140	2	-0.298E+01	140	3	-0.108E+01	140	4	-0.231E+01	140	5	-0.183E+01

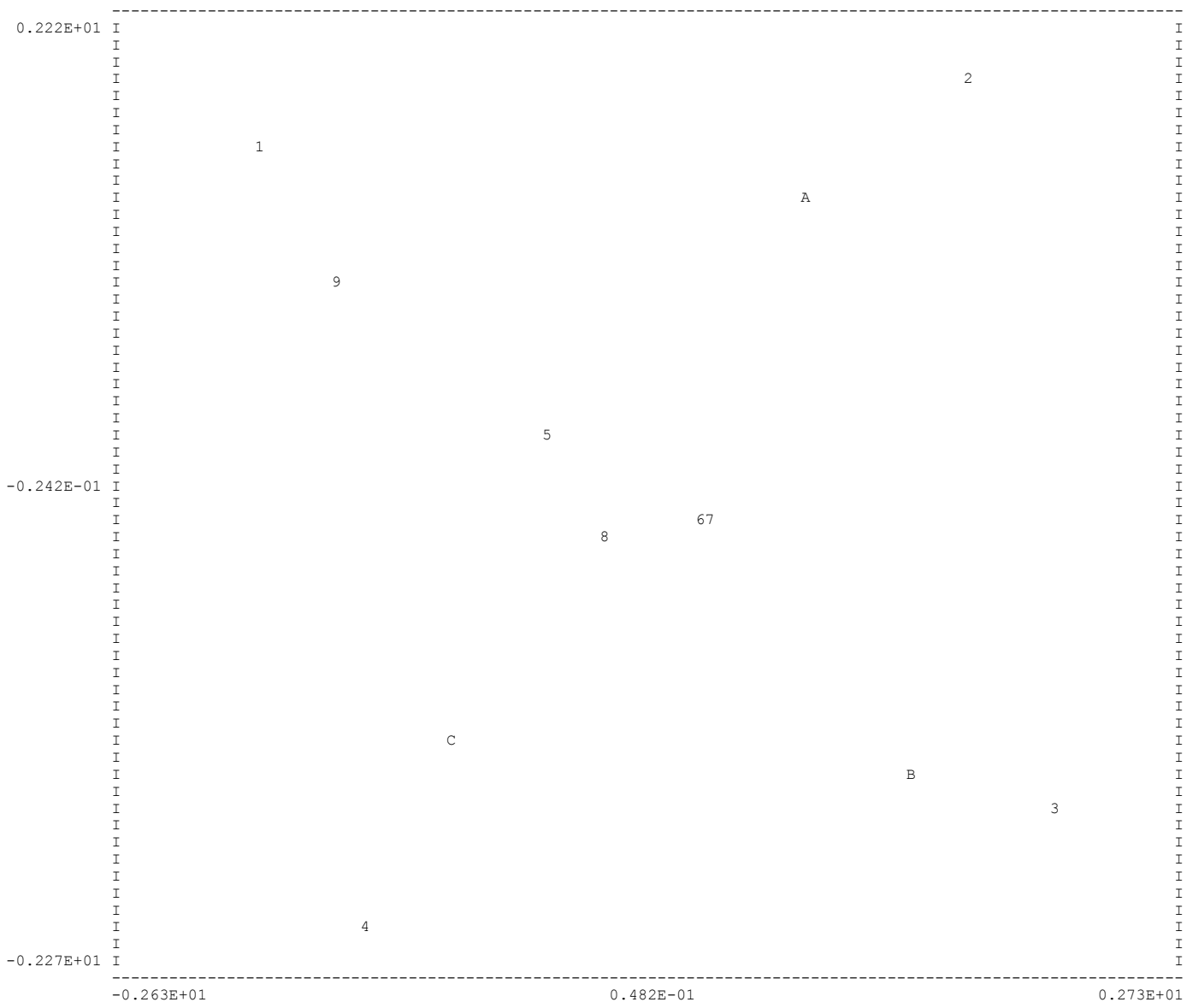
140	1	-0.139E+01	140	2	-0.169E+01	140	3	-0.258E+01						
141	1	-0.149E+01	141	2	-0.108E+01	141	3	-0.123E+01	141	4	-0.141E+01	141	5	-0.122E+01
141	1	-0.149E+01	141	2	-0.147E+01	141	3	-0.169E+01						
142	1	-0.206E+01	142	2	-0.139E+01	142	3	-0.125E+01	142	4	-0.139E+01	142	5	-0.171E+01
142	1	-0.253E+01	142	2	-0.643E+01	142	3	-0.231E+01						
143	1	-0.178E+01	143	2	-0.132E+01	143	3	-0.898E+00	143	4	-0.172E+01	143	5	-0.147E+01
143	1	-0.176E+01	143	2	-0.248E+01	143	3	-0.229E+01						
144	1	-0.131E+01	144	2	-0.126E+01	144	3	-0.114E+01	144	4	-0.132E+01	144	5	-0.182E+01
144	1	-0.164E+01	144	2	-0.169E+01	144	3	-0.122E+01						
145	1	-0.249E+01	145	2	-0.284E+01	145	3	-0.123E+01	145	4	-0.410E+01	145	5	-0.122E+01
145	1	-0.121E+01	145	2	-0.147E+01	145	3	-0.132E+01						
146	1	-0.118E+01	146	2	-0.146E+01	146	3	-0.278E+01	146	4	-0.139E+01	146	5	-0.129E+01
146	1	-0.121E+01	146	2	-0.126E+01	146	3	-0.220E+01						
147	1	-0.125E+01	147	2	-0.132E+01	147	3	-0.145E+01	147	4	-0.172E+01	147	5	-0.125E+01
147	1	-0.133E+01	147	2	-0.131E+01	147	3	-0.124E+01						
148	1	-0.395E+01	148	2	-0.126E+01	148	3	-0.114E+01	148	4	-0.161E+01	148	5	-0.183E+01
148	1	-0.229E+01	148	2	-0.131E+01	148	3	-0.122E+01						
149	1	-0.938E+00	149	2	-0.284E+01	149	3	-0.123E+01	149	4	-0.141E+01	149	5	-0.122E+01
149	1	-0.277E+01	149	2	-0.152E+01	149	3	-0.132E+01						
150	1	-0.118E+01	150	2	-0.929E+00	150	3	-0.325E+01	150	4	-0.125E+01	150	5	-0.129E+01
150	1	-0.164E+01	150	2	-0.244E+01	150	3	-0.168E+01						
151	1	-0.125E+01	151	2	-0.132E+01	151	3	-0.898E+00	151	4	-0.105E+01	151	5	-0.385E+01
151	1	-0.129E+01	151	2	-0.665E+01	151	3	-0.136E+01						
152	1	-0.172E+01	152	2	-0.126E+01	152	3	-0.531E+01	152	4	-0.913E+00	152	5	-0.129E+01
152	1	-0.164E+01	152	2	-0.131E+01	152	3	-0.258E+01						
153	1	-0.938E+00	153	2	-0.124E+01	153	3	-0.199E+01	153	4	-0.127E+01	153	5	-0.350E+01
153	1	-0.121E+01	153	2	-0.147E+01	153	3	-0.132E+01						
154	1	-0.118E+01	154	2	-0.929E+00	154	3	-0.186E+01	154	4	-0.125E+01	154	5	-0.129E+01
154	1	-0.129E+01	154	2	-0.174E+01	154	3	-0.231E+01						
155	1	-0.125E+01	155	2	-0.131E+01	155	3	-0.898E+00	155	4	-0.172E+01	155	5	-0.147E+01
155	1	-0.133E+01	155	2	-0.201E+01	155	3	-0.124E+01						
156	1	-0.191E+01	156	2	-0.126E+01	156	3	-0.108E+01	156	4	-0.161E+01	156	5	-0.139E+01
156	1	-0.130E+01	156	2	-0.214E+01	156	3	-0.122E+01						
157	1	-0.149E+01	157	2	-0.683E+01	157	3	-0.120E+01	157	4	-0.141E+01	157	5	-0.350E+01
157	1	-0.121E+01	157	2	-0.214E+01	157	3	-0.132E+01						
158	1	-0.105E+01	158	2	-0.929E+00	158	3	-0.125E+01	158	4	-0.125E+01	158	5	-0.130E+01
158	1	-0.164E+01	158	2	-0.213E+01	158	3	-0.135E+01						
159	1	-0.126E+01	159	2	-0.131E+01	159	3	-0.898E+00	159	4	-0.172E+01	159	5	-0.147E+01
159	1	-0.129E+01	159	2	-0.177E+01	159	3	-0.229E+01						
160	1	-0.172E+01	160	2	-0.141E+01	160	3	-0.108E+01	160	4	-0.132E+01	160	5	-0.139E+01
160	1	-0.139E+01	160	2	-0.169E+01	160	3	-0.136E+01						
161	1	-0.377E+01	161	2	-0.231E+01	161	3	-0.120E+01	161	4	-0.197E+01	161	5	-0.131E+01
161	1	-0.213E+01	161	2	-0.124E+01	161	3	-0.129E+01						
162	1	-0.182E+01	162	2	-0.146E+01	162	3	-0.125E+01	162	4	-0.125E+01	162	5	-0.171E+01
162	1	-0.164E+01	162	2	-0.129E+01	162	3	-0.135E+01						
163	1	-0.345E+01	163	2	-0.178E+01	163	3	-0.388E+01	163	4	-0.105E+01	163	5	-0.291E+01
163	1	-0.176E+01	163	2	-0.177E+01	163	3	-0.229E+01						
164	1	-0.140E+01	164	2	-0.141E+01	164	3	-0.213E+01	164	4	-0.161E+01	164	5	-0.183E+01
164	1	-0.225E+01	164	2	-0.214E+01	164	3	-0.122E+01						
165	1	-0.132E+01	165	2	-0.124E+01	165	3	-0.176E+01	165	4	-0.127E+01	165	5	-0.122E+01
165	1	-0.121E+01	165	2	-0.214E+01	165	3	-0.217E+01						
166	1	-0.105E+01	166	2	-0.146E+01	166	3	-0.186E+01	166	4	-0.139E+01	166	5	-0.129E+01
166	1	-0.164E+01	166	2	-0.174E+01	166	3	-0.168E+01						
167	1	-0.193E+01	167	2	-0.262E+01	167	3	-0.898E+00	167	4	-0.105E+01	167	5	-0.203E+01
167	1	-0.244E+01	167	2	-0.131E+01	167	3	-0.124E+01						
168	1	-0.191E+01	168	2	-0.126E+01	168	3	-0.181E+01	168	4	-0.132E+01	168	5	-0.129E+01
168	1	-0.130E+01	168	2	-0.131E+01	168	3	-0.186E+01						
169	1	-0.132E+01	169	2	-0.108E+01	169	3	-0.176E+01	169	4	-0.127E+01	169	5	-0.192E+01
169	1	-0.121E+01	169	2	-0.152E+01	169	3	-0.132E+01						
170	1	-0.118E+01	170	2	-0.238E+01	170	3	-0.125E+01	170	4	-0.199E+01	170	5	-0.213E+01
170	1	-0.121E+01	170	2	-0.213E+01	170	3	-0.131E+01						
171	1	-0.125E+01	171	2	-0.178E+01	171	3	-0.898E+00	171	4	-0.172E+01	171	5	-0.147E+01
171	1	-0.198E+01	171	2	-0.125E+01	171	3	-0.124E+01						
172	1	-0.140E+01	172	2	-0.126E+01	172	3	-0.181E+01	172	4	-0.161E+01	172	5	-0.139E+01
172	1	-0.139E+01	172	2	-0.131E+01	172	3	-0.122E+01						
173	1	-0.249E+01	173	2	-0.231E+01	173	3	-0.123E+01	173	4	-0.127E+01	173	5	-0.181E+01
173	1	-0.149E+01	173	2	-0.261E+01	173	3	-0.169E+01						
174	1	-0.182E+01	174	2	-0.929E+00	174	3	-0.125E+01	174	4	-0.125E+01	174	5	-0.171E+01
174	1	-0.235E+01	174	2	-0.129E+01	174	3	-0.168E+01						
175	1	-0.193E+01	175	2	-0.132E+01	175	3	-0.898E+00	175	4	-0.172E+01	175	5	-0.385E+01
175	1	-0.129E+01	175	2	-0.125E+01	175	3	-0.320E+01						
176	1	-0.172E+01	176	2	-0.126E+01	176	3	-0.429E+01	176	4	-0.913E+00	176	5	-0.249E+01
176	1	-0.139E+01	176	2	-0.169E+01	176	3	-0.258E+01						
177	1	-0.377E+01	177	2	-0.124E+01	177	3	-0.120E+01	177	4	-0.141E+01	177	5	-0.122E+01
177	1	-0.149E+01	177	2	-0.124E+01	177	3	-0.235E+01						
178	1	-0.118E+01	178	2	-0.238E+01	178	3	-0.186E+01	178	4	-0.139E+01	178	5	-0.213E+01
178	1	-0.129E+01	178	2	-0.244E+01	178	3	-0.168E+01						
179	1	-0.126E+01	179	2	-0.131E+01	179	3	-0.145E+01	179	4	-0.124E+01	179	5	-0.157E+01
179	1	-0.244E+01	179	2	-0.201E+01	179	3	-0.124E+01						
180	1	-0.277E+01	180	2	-0.126E+01	180	3	-0.108E+01	180	4	-0.913E+00	180	5	-0.129E+01
180	1	-0.139E+01	180	2	-0.214E+01	180	3	-0.345E+01						
181	1	-0.149E+01	181	2	-0.284E+01	181	3	-0.123E+01	181	4	-0.197E+01	181	5	-0.131E+01
181	1	-0.277E+01	181	2	-0.261E+01	181	3	-0.129E+01						
182	1	-0.182E+01	182	2	-0.929E+00	182	3	-0.180E+01	182	4	-0.166E+01	182	5	-0.171E+01
182	1	-0.164E+01	182	2	-0.126E+01	182	3	-0.168E+01						
183	1	-0.125E+01	183	2	-0.131E+01	183	3	-0.388E+01	183	4	-0.105E+01	183	5	-0.147E+01
183	1	-0.129E+01	183	2	-0.177E+01	183	3	-0.161E+01						
184	1	-0.172E+01	184	2	-0.126E+01	184	3	-0.114E+01	184	4	-0.132E+01	184	5	-0.182E+01
184	1	-0.399E+01	184	2	-0.233E+01	184	3	-0.122E+01						

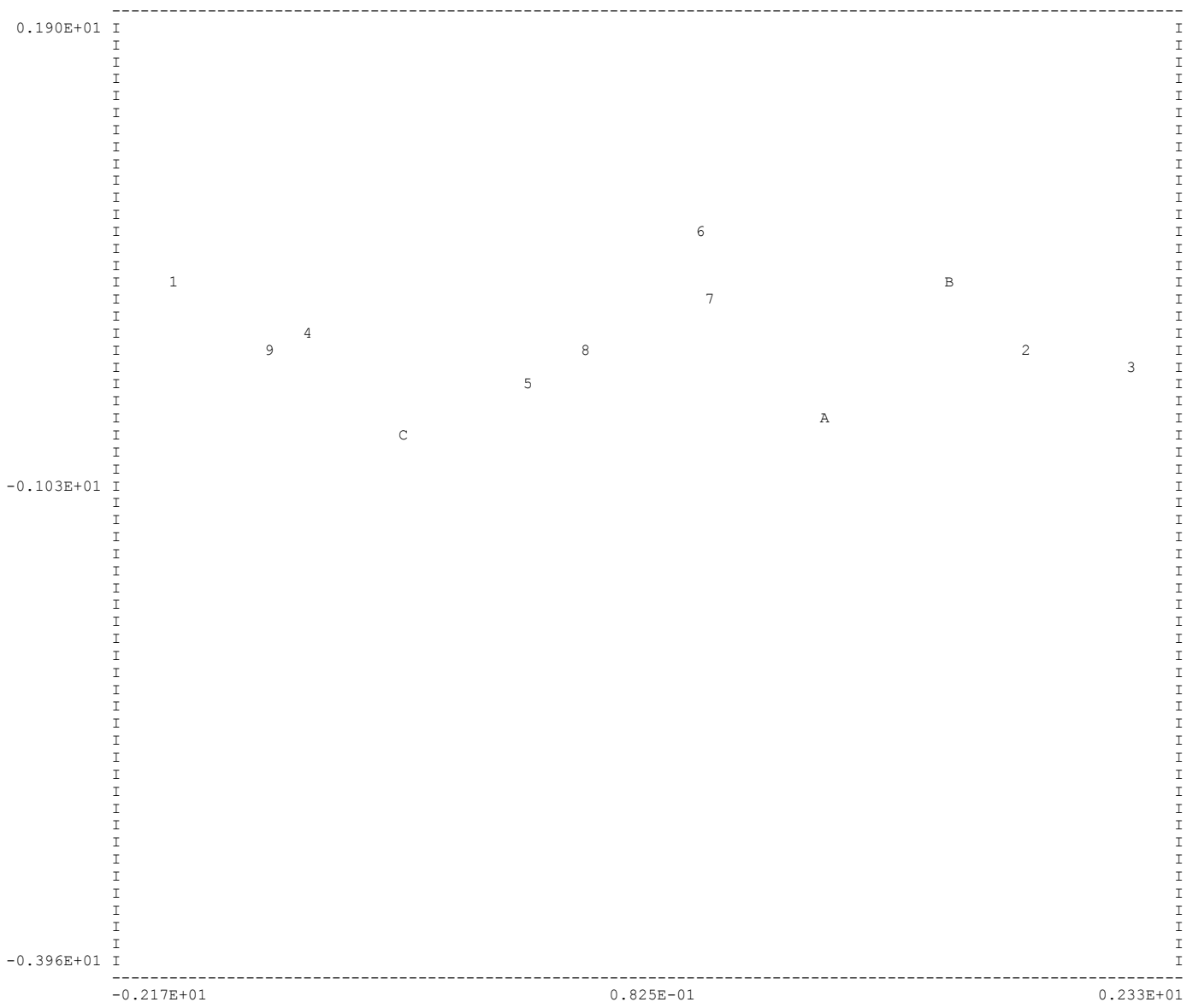
185	1	-0.938E+00	185	2	-0.284E+01	185	3	-0.199E+01	185	4	-0.197E+01	185	5	-0.181E+01
185	1	-0.149E+01	185	2	-0.124E+01	185	3	-0.169E+01						
186	1	-0.206E+01	186	2	-0.139E+01	186	3	-0.132E+01	186	4	-0.125E+01	186	5	-0.130E+01
186	1	-0.129E+01	186	2	-0.174E+01	186	3	-0.220E+01						
187	1	-0.126E+01	187	2	-0.178E+01	187	3	-0.145E+01	187	4	-0.124E+01	187	5	-0.203E+01
187	1	-0.129E+01	187	2	-0.131E+01	187	3	-0.161E+01						
188	1	-0.140E+01	188	2	-0.141E+01	188	3	-0.181E+01	188	4	-0.231E+01	188	5	-0.183E+01
188	1	-0.164E+01	188	2	-0.134E+01	188	3	-0.122E+01						
189	1	-0.938E+00	189	2	-0.108E+01	189	3	-0.199E+01	189	4	-0.127E+01	189	5	-0.131E+01
189	1	-0.121E+01	189	2	-0.152E+01	189	3	-0.132E+01						
190	1	-0.105E+01	190	2	-0.929E+00	190	3	-0.132E+01	190	4	-0.139E+01	190	5	-0.213E+01
190	1	-0.129E+01	190	2	-0.126E+01	190	3	-0.220E+01						
191	1	-0.126E+01	191	2	-0.324E+01	191	3	-0.898E+00	191	4	-0.105E+01	191	5	-0.125E+01
191	1	-0.133E+01	191	2	-0.248E+01	191	3	-0.320E+01						
192	1	-0.131E+01	192	2	-0.465E+01	192	3	-0.114E+01	192	4	-0.913E+00	192	5	-0.129E+01
192	1	-0.229E+01	192	2	-0.169E+01	192	3	-0.122E+01						
193	1	-0.149E+01	193	2	-0.165E+01	193	3	-0.120E+01	193	4	-0.166E+01	193	5	-0.131E+01
193	1	-0.149E+01	193	2	-0.147E+01	193	3	-0.132E+01						
194	1	-0.206E+01	194	2	-0.139E+01	194	3	-0.278E+01	194	4	-0.125E+01	194	5	-0.130E+01
194	1	-0.164E+01	194	2	-0.129E+01	194	3	-0.135E+01						
195	1	-0.126E+01	195	2	-0.131E+01	195	3	-0.140E+01	195	4	-0.210E+01	195	5	-0.125E+01
195	1	-0.129E+01	195	2	-0.131E+01	195	3	-0.136E+01						
196	1	-0.140E+01	196	2	-0.126E+01	196	3	-0.181E+01	196	4	-0.231E+01	196	5	-0.249E+01
196	1	-0.225E+01	196	2	-0.134E+01	196	3	-0.136E+01						
197	1	-0.149E+01	197	2	-0.108E+01	197	3	-0.367E+01	197	4	-0.197E+01	197	5	-0.122E+01
197	1	-0.149E+01	197	2	-0.147E+01	197	3	-0.132E+01						
198	1	-0.566E+01	198	2	-0.146E+01	198	3	-0.132E+01	198	4	-0.125E+01	198	5	-0.213E+01
198	1	-0.121E+01	198	2	-0.213E+01	198	3	-0.135E+01						
199	1	-0.126E+01	199	2	-0.178E+01	199	3	-0.898E+00	199	4	-0.124E+01	199	5	-0.125E+01
199	1	-0.129E+01	199	2	-0.125E+01	199	3	-0.241E+01						
200	1	-0.131E+01	200	2	-0.126E+01	200	3	-0.114E+01	200	4	-0.132E+01	200	5	-0.183E+01
200	1	-0.304E+01	200	2	-0.233E+01	200	3	-0.186E+01						


TARGET CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.
0.227E+01
-0.603E-01
-0.239E+01
-0.274E+01
0.533E-01
0.285E+01
1
2
3
4
5
6
7
8
9
A
B
C

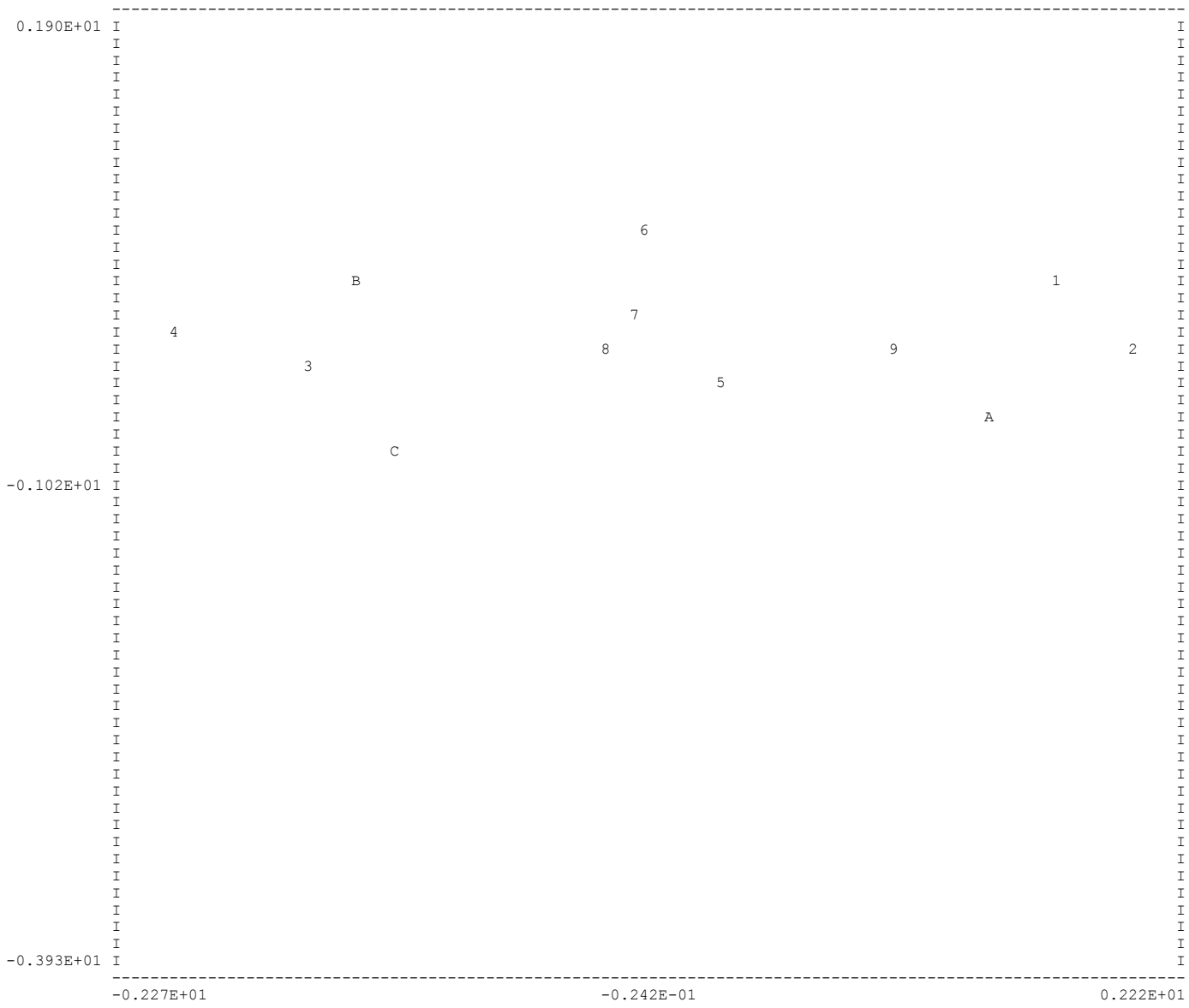

TARGET CONFIGURATION
DIMENSION 1 ON X AXIS
DIMENSION 3 ON Y AXIS.
0.100E+01
0.000E+00
-0.100E+01
1
9
4
C
5
8
$
A
B
2
3
-0.216E+01
0.104E+00
0.237E+01


TARGET CONFIGURATION DIMENSION 2 ON X AXIS DIMENSION 3 ON Y AXIS.
0.100E+01
0.000E+00
-0.100E+01
4 3 B C 8 76 5 9 A 1 2
-0.239E+01
-0.603E-01
0.227E+01


TRANSFORMED / ESTIMATED CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.
0.222E+01
-0.242E-01
-0.227E+01
-0.263E+01
0.482E-01
0.273E+01
1
2
3
4
5
67
8
9
A
B
C

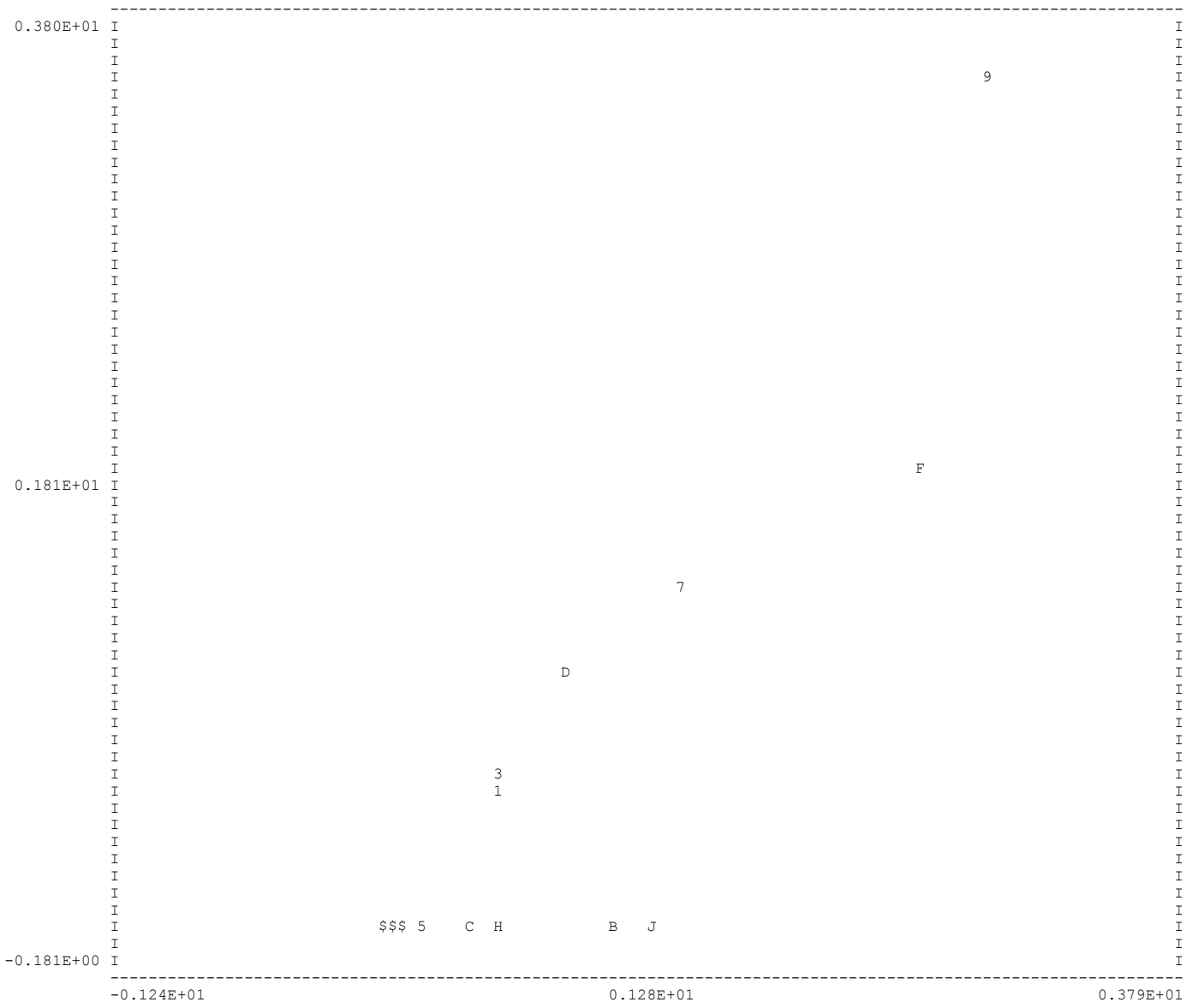

TRANSFORMED / ESTIMATED CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 3 ON Y AXIS.
0.190E+01
-0.103E+01
-0.396E+01
-0.217E+01
0.825E-01
0.233E+01
6
1
B
7
4
9
8
2
3
5
A
C

TRANSFORMED / ESTIMATED CONFIGURATION DIMENSION 2 ON X AXIS DIMENSION 3 ON Y AXIS.



PRODUCT MOMENT CORRELATION OF TARGET AND FINAL TRANSFORMED STIMULUS VARIANCES = 0.8753

TARGET VARIANCES ON Y AXIS FINAL TRANSFORMED VARIANCES ON X AXIS



ESTIMATED TRUE AND EXPECTED DISTANCES

OBJECTS		TRUE	EXPECTED
2	1	0.351819E+01	0.367604E+01
3	1	0.497457E+01	0.508259E+01
3	2	0.338538E+01	0.355524E+01
4	1	0.362972E+01	0.378074E+01
4	2	0.487793E+01	0.499285E+01
4	3	0.341493E+01	0.357601E+01
5	1	0.204823E+01	0.277751E+01
5	2	0.263782E+01	0.322064E+01
5	3	0.300397E+01	0.354324E+01
5	4	0.241920E+01	0.307950E+01
6	1	0.273214E+01	0.333089E+01
6	2	0.248831E+01	0.317464E+01
6	3	0.234705E+01	0.299424E+01
6	4	0.255628E+01	0.312541E+01
6	5	0.114714E+01	0.285381E+01
7	1	0.278587E+01	0.334747E+01
7	2	0.240028E+01	0.306608E+01
7	3	0.219312E+01	0.288895E+01
7	4	0.251206E+01	0.311372E+01
7	5	0.946195E+00	0.274284E+01
7	6	0.420027E+00	0.261388E+01
8	1	0.251598E+01	0.311098E+01

```
  8   2    0.278747E+01    0.333722E+01
  8   3    0.253609E+01    0.316484E+01
  8   4    0.210012E+01    0.283971E+01
  8   5    0.563892E+00    0.263045E+01
  8   6    0.828337E+00    0.271381E+01
  8   7    0.588635E+00    0.262919E+01
  9   1    0.848673E+00    0.223081E+01
  9   2    0.325495E+01    0.382164E+01
  9   3    0.426562E+01    0.468605E+01
  9   4    0.292368E+01    0.345066E+01
  9   5    0.127809E+01    0.289072E+01
  9   6    0.214184E+01    0.335384E+01
  9   7    0.211773E+01    0.332453E+01
  9   8    0.175486E+01    0.310631E+01
 10   1    0.278658E+01    0.344528E+01
 10   2    0.104161E+01    0.230633E+01
 10   3    0.308631E+01    0.361290E+01
 10   4    0.398813E+01    0.439660E+01
 10   5    0.167019E+01    0.306705E+01
 10   6    0.184591E+01    0.318705E+01
 10   7    0.165715E+01    0.307268E+01
 10   8    0.189852E+01    0.318691E+01
 10   9    0.236488E+01    0.353432E+01
 11   1    0.426384E+01    0.467040E+01
 11   2    0.322090E+01    0.370793E+01
 11   3    0.910726E+00    0.226364E+01
 11   4    0.274282E+01    0.340023E+01
 11   5    0.237812E+01    0.349143E+01
 11   6    0.158065E+01    0.301551E+01
 11   7    0.151716E+01    0.299439E+01
 11   8    0.185878E+01    0.317941E+01
 11   9    0.357845E+01    0.439012E+01
 11  10    0.278877E+01    0.373410E+01
 12   1    0.301504E+01    0.351142E+01
 12   2    0.397726E+01    0.437883E+01
 12   3    0.303718E+01    0.365215E+01
 12   4    0.117736E+01    0.237287E+01
 12   5    0.149281E+01    0.297639E+01
 12   6    0.201101E+01    0.324727E+01
 12   7    0.180800E+01    0.313065E+01
 12   8    0.128295E+01    0.288931E+01
 12   9    0.219392E+01    0.333842E+01
 12  10    0.301276E+01    0.389679E+01
 12  11    0.245143E+01    0.359056E+01


ELAPSED MINUTES =         2
```

Example 6: Input

```
INITIAL DATA
TITLE
Project1
DATATP   4.0
NSTIM    12.0
NSUB     1.0
NSETS    100.0
NDIM     2.0
METRIC   1.0
TCOR     1.0
TSIG     1.0
TMES     2.0
INITIAL  2.0
ITMAX    30.0
SAMPLE   2.0
DISTRIB  1.0
NACT     26.0
NSIG     1.0
NOPT     0.0
STAND    2.0
FIXED    3.0
NMMP     0.0
NPROX    0.0
NFMAX    5000.0
NCHC     0.0
MIXTURE  2.0
DOOVER   2.0
SIMDIS   1.0
ALGOR    1.0
MODELA   2.0
MODELB   2.0
QPDF     2.0
NTRAC    -1.0
UMLMIN   0.00010
UINMIN   0.010
ENDIN


TARGET DATA
-0.32764  0.18376
-0.39192  0.33380
-0.01146 -0.09676
 0.06638  0.30358
 0.46016  0.29565
-0.02282  0.17277
 0.24502  0.1735
 0.33580  0.25785
 0.10477 -0.22798
 0.20464 -0.05094
 0.46905  0.03176
-0.30285  0.16784
 0 0
 0.025
 1 1 1 1 1 1 1 1 1 1 1 1 1
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 1 1 1 1 1 1 1 1 1 1 1
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26


DISTANCE DATA
  4 6 3 3 6 4 4 4 3 2 4 2
  3 2 2 4 4 1 3 4 3 2 2 4
  4 4 1 3 6 4 3 5 2 1 4 4
  5 5 2 4 6 3 3 5 1 3 3 6
  1 4 3 2 6 3 3 3 2 3 5 3
  4 6 2 2 7 2 4 4 2 3 3 3
  2 3 2 3 5 2 3 4 3 2 3 2
  3 3 2 3 4 1 4 5 3 3 5 3
  5 6 4 2 4 2 4 4 1 2 6 7
  3 4 4 1 4 1 4 1 2 3 5 3
  3 5 3 3 5 3 3 5 2 4 6 1
  4 2 4 3 4 2 5 4 5 5 6 2
  4 4 2 3 5 3 2 4 2 2 2 5
  4 2 1 3 4 2 3 2 4 3 5 2
  3 3 2 5 5 4 4 5 4 3 6 2
  3 5 2 6 6 5 5 6 4 4 7 4
  3 5 3 3 5 2 2 4 2 1 4 4
  5 3 2 1 3 2 1 1 4 2 3 5
  3 7 1 3 5 2 3 3 3 2 3 4
  3 2 2 4 6 3 5 5 2 3 5 1
```

3 6 2 3 4 2 2 1 1 1 2 4
5 9 4 4 5 4 6 4 4 3 3 5
3 6 4 7 6 2 4 5 3 3 3 4
4 4 3 5 4 3 5 4 2 3 5 2
6 6 3 5 2 3 2 7 1 2 4 5
1 4 1 3 4 2 3 4 2 3 4 5
5 4 2 3 4 4 1 2 2 3 2 2
4 3 2 3 3 1 3 3 3 4 3 3
2 3 4 2 6 2 1 5 3 4 4 2
2 2 3 2 4 2 5 5 2 3 5 3
4 3 3 2 3 4 1 2 1 2 2 5
3 6 2 3 5 4 2 4 2 1 2 5
5 5 3 3 4 5 3 5 3 6 4 3
4 3 3 2 2 2 4 4 2 2 5 2
6 3 2 4 4 1 2 2 3 3 6 3
3 3 2 2 6 1 2 5 3 2 6 1
5 7 2 2 2 3 2 3 4 2 5 2
5 5 1 4 6 5 4 7 3 3 4 4
4 5 3 2 2 2 1 4 4 2 3 5
3 5 3 2 3 2 2 2 5 4 3 3
6 6 2 4 5 3 1 4 1 1 3 3
3 4 1 4 5 2 4 3 4 2 4 4
5 4 4 4 5 3 3 4 2 2 4 4
4 3 3 1 5 3 1 4 5 2 2 3
3 3 2 4 8 2 3 6 4 4 5 2
4 7 2 4 4 5 2 2 2 2 3 6
7 6 2 5 5 3 4 6 1 2 5 5
3 3 2 3 3 2 4 3 2 3 4 3
2 3 1 3 4 1 3 6 4 5 3 3
3 2 2 2 5 3 2 4 4 2 5 2
3 6 1 1 4 2 5 2 2 3 4 2
2 3 2 4 7 3 3 6 3 4 5 2
2 5 3 2 3 4 2 2 3 1 3 5
3 3 1 5 1 2 3 4 1 2 3 5
2 5 1 2 4 2 2 5 2 3 2 2
3 4 2 2 5 2 1 2 2 2 1 3
4 3 1 4 5 2 4 4 1 2 4 4
4 3 3 4 4 2 2 5 1 3 5 2
2 1 4 4 7 5 5 7 7 7 6 1
3 6 1 3 2 1 3 2 2 3 3 3
4 6 3 1 2 2 3 1 5 3 2 5
4 5 4 2 4 4 2 4 3 5 4 6
6 4 4 2 3 3 2 3 5 2 3 4
4 4 1 4 3 4 3 4 2 2 3 3
5 4 4 3 4 2 2 5 4 2 4 2
3 4 2 2 4 1 2 3 3 3 3 4
6 7 1 3 6 4 4 6 2 3 2 5
2 3 4 2 4 1 3 2 3 3 3 3
4 4 3 3 4 3 4 3 2 3 3 4
3 3 1 3 4 1 4 3 1 3 4 3
3 5 1 2 5 4 3 4 3 2 2 1
3 3 3 5 7 3 6 3 3 2 5 3
3 3 2 3 2 2 2 3 4 2 6 6
4 5 2 4 2 3 3 3 2 3 5 4
4 2 3 3 4 3 2 4 6 5 6 2
4 5 3 3 3 3 2 2 4 2 4 4
4 3 1 1 4 1 2 5 5 4 4 3
4 5 1 2 4 2 3 2 1 1 4 1
3 6 2 2 3 2 2 2 3 3 2 5
4 3 1 3 4 3 4 3 2 3 5 4
7 8 3 6 8 4 5 2 4 3 5 6
1 3 3 4 4 2 2 4 5 3 5 1
2 3 2 4 7 4 5 4 2 4 3 4
3 5 2 3 3 4 2 3 1 1 1 3
3 2 3 3 5 2 3 5 2 4 5 2
2 2 5 2 4 3 3 5 4 5 6 4
2 3 3 4 5 2 4 3 3 4 5 1
2 2 2 5 6 3 4 6 4 5 5 3
5 5 3 3 3 2 2 2 2 2 2 4
3 5 2 2 4 3 2 4 1 3 3 3
5 4 2 5 7 2 5 5 2 4 6 3
5 5 4 5 5 5 5 6 3 3 8 4
2 4 1 1 4 2 3 3 3 3 4 3
4 5 3 3 3 2 1 2 5 2 4 4
2 4 3 2 6 3 5 6 3 4 5 2
3 5 2 2 4 1 2 1 3 1 4 4
3 4 1 5 3 3 5 7 3 4 6 2
7 3 2 2 3 4 2 1 3 3 5 5
1 4 2 2 4 3 3 4 2 4 5 2

7 6 2 1 3 2 2 1 6 3 4 4

Example 6: Output

PROSCAL

Project1

DATE 2006:05:03
TIME 12:20:40.846

NUMBER OF STIMULI	12		
NUMBER OF ACTIVE COORD.	26	UMLMIN	0.00010
NUMBER OF DIMENSIONS	2	UINMIN	0.01000
NUMBER OF VARIANCES	1	ZMIN	0.00000
NUMBER OF IDEAL OBJECTS	100	NFMAX	5000
NUMBER OF DATA SETS	1	NTRAC	-1
NUMBER OF ML ITERATIONS	30		
TRANSFORMATION INDEX	0		
OPTIMIZATION LEVEL	0		
TARGET COORD. OPTION	TARG		
TARGET VARIANCE OPT.	TARG		
TARGET MEAS PARAM OPT.	TRNO		
STANDARDIZATION OPT.	STNO		
INITIALIZATION OPTION	COMP		
DATA TYPE OPTION	RATE		
DISTRIBUTION OPTION	CHIF		
FIXED POINT OPTION	FXNO		
SAMPLING	DEPN		
METRIC OPTION	ECLD		
MIXTURE OPTION	NOEM		
REANALYSIS OPTION	NORD		
PROXIMITIES OPTION	NOSI		

TARGET CONFIGURATION

-0.328	0.184
-0.392	0.334
-0.011	-0.097
0.066	0.304
0.460	0.296
-0.023	0.173
0.245	0.173
0.336	0.258
0.105	-0.228
0.205	-0.051
0.469	0.032
-0.303	0.168
0.000	0.000

TARGET VARIANCES

0.025

VARIANCE SET MEMBERSHIP

OBJECTS	1	2	3	4	5	6	7	8	9	10	11	12	13
SET	1	1	1	1	1	1	1	1	1	1	1	1	1

SUBJECT SET MEMBERSHIP

SUBJECT	SET
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1
11	1
12	1
13	1
14	1
15	1
16	1
17	1
18	1

19	1
20	1
21	1
22	1
23	1
24	1
25	1
26	1
27	1
28	1
29	1
30	1
31	1
32	1
33	1
34	1
35	1
36	1
37	1
38	1
39	1
40	1
41	1
42	1
43	1
44	1
45	1
46	1
47	1
48	1
49	1
50	1
51	1
52	1
53	1
54	1
55	1
56	1
57	1
58	1
59	1
60	1
61	1
62	1
63	1
64	1
65	1
66	1
67	1
68	1
69	1
70	1
71	1
72	1
73	1
74	1
75	1
76	1
77	1
78	1
79	1
80	1
81	1
82	1
83	1
84	1
85	1
86	1
87	1
88	1
89	1
90	1
91	1
92	1
93	1
94	1
95	1
96	1
97	1
98	1
99	1
100	1

ISCALE FOR IDEAL OBJECT 1

3.600 4.190 2.350 3.060 4.370 2.640 3.030 3.760 2.840 2.850
4.010 3.350

INITIAL LOG LIKELIHOOD VALUE -0.222600E+04

ESTIMATED POLAR COORDINATES ENTERING FIXED VARIANCE PHASE OF INITIAL ADJUSTMENT

3.600	4.190	2.350	3.060	4.370	2.640	3.030	3.760	2.840	2.850
4.010	3.350	0.000	3.142	0.000	3.142	0.000	3.142	0.000	3.142
0.000	3.142	0.000	3.142	0.000	0.000	0.890			

LOG LIKELIHOOD VALUE AT END OF INITIAL ADJUSTMENT -0.195385E+04

INITIAL CONFIGURATION

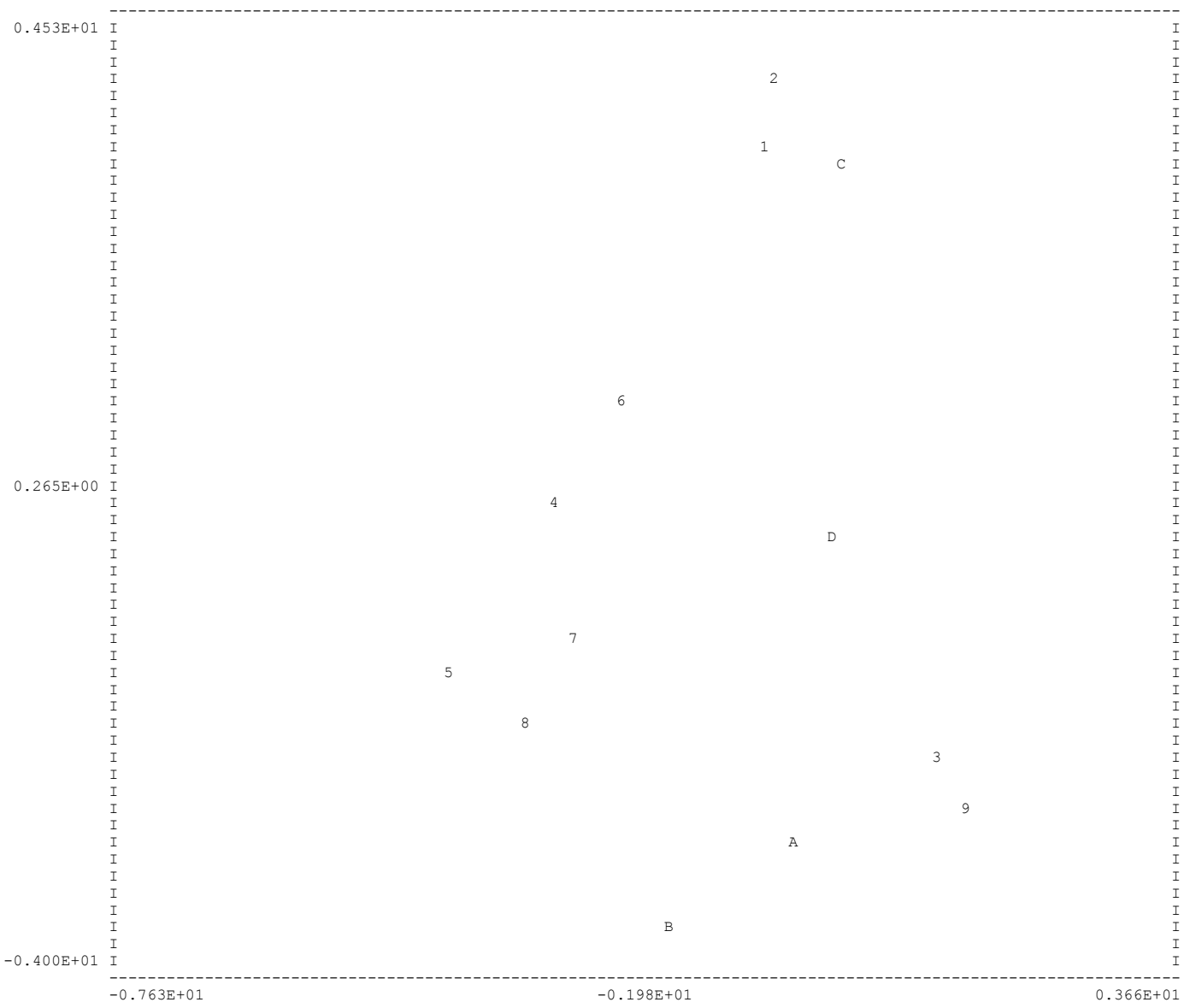
-0.745	3.522
-0.622	4.144
1.161	-2.043
-3.045	0.307
-4.167	-1.315
-2.329	1.243
-2.855	-1.015
-3.323	-1.760
1.432	-2.453
-0.475	-2.810
-1.734	-3.616
0.083	3.349
0.000	0.000

INITIAL STANDARD DEVIATIONS - ALL OBJECTS

0.985
1.193
0.343
0.829
1.079
0.566
0.836
1.214
0.908
0.662
1.030
1.009
0.922

MEAN OF STANDARD DEVIATIONS 0.890

INITIAL CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



INITIAL VARIANCES - ACTIVE VARIABLES

0.793

INITIAL MEASUREMENT CONSTANTS 0.0000 1.0000 1.0000

TRANSFORMED CONFIGURATION

-0.369	0.152
-0.433	0.174
0.038	-0.324
0.050	0.189
0.260	0.204
-0.074	0.174
0.161	0.100
0.255	0.103
0.061	-0.371
0.197	-0.216
0.339	-0.144
-0.398	0.066
-0.086	-0.107

CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.9024 SUM OF DISTANCE DIFFERENCES = 0.943731E+00

```
TRANSFORMED VARIANCES
         0.009


INITIAL LOG LIKELIHOOD VALUE                  -0.19745498E+04


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -0.745  -0.622   1.161  -3.045  -4.167  -2.329  -2.855  -3.323   1.432  -0.475
 -1.734   0.083   0.000   3.522   4.144  -2.043   0.307  -1.315   1.243  -1.015
 -1.760  -2.453  -2.810  -3.616   3.349   0.000   0.793

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.193887E+04


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -0.745  -0.622   1.161  -3.045  -4.167  -2.329  -2.855  -3.323   1.432  -0.475
 -1.734   0.083   0.000   3.522   4.144  -2.043   0.307  -1.315   1.243  -1.015
 -1.760  -2.453  -2.810  -3.616   3.349   0.000   1.119

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.188615E+04


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -0.422  -0.629   0.554  -2.883  -4.192  -2.015  -2.660  -3.320   0.942  -0.681
 -1.849   0.138  -0.363   3.228   3.912  -0.940   0.255  -1.232   1.036  -0.883
 -1.537  -1.701  -2.153  -3.237   2.910   0.049   1.119

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.188466E+04


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -0.422  -0.629   0.554  -2.883  -4.192  -2.015  -2.660  -3.320   0.942  -0.681
 -1.849   0.138  -0.363   3.228   3.912  -0.940   0.255  -1.232   1.036  -0.883
 -1.537  -1.701  -2.153  -3.237   2.910   0.049   1.203

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.188427E+04


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -0.407  -0.645   0.420  -2.860  -4.171  -1.981  -2.624  -3.304   0.864  -0.738
 -1.881   0.109  -0.395   3.186   3.880  -0.857   0.212  -1.285   0.974  -0.898
 -1.543  -1.661  -2.091  -3.200   2.864   0.048   1.203

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.188417E+04


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -0.407  -0.645   0.420  -2.860  -4.171  -1.981  -2.624  -3.304   0.864  -0.738
 -1.881   0.109  -0.395   3.186   3.880  -0.857   0.212  -1.285   0.974  -0.898
 -1.543  -1.661  -2.091  -3.200   2.864   0.048   1.226

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.188414E+04


ESTIMATE VALUES ENTERING FIXED LOCATION PHASE

 -0.404  -0.650   0.381  -2.852  -4.162  -1.970  -2.612  -3.298   0.844  -0.752
 -1.888   0.101  -0.402   3.174   3.871  -0.831   0.199  -1.302   0.955  -0.903
 -1.546  -1.649  -2.073  -3.189   2.852   0.048   1.226

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.188413E+04


ESTIMATE VALUES ENTERING FIXED VARIANCE PHASE

 -0.404  -0.650   0.381  -2.852  -4.162  -1.970  -2.612  -3.298   0.844  -0.752
 -1.888   0.101  -0.402   3.174   3.871  -0.831   0.199  -1.302   0.955  -0.903
 -1.546  -1.649  -2.073  -3.189   2.852   0.048   1.233

LOG LIKELIHOOD VALUE AT END OF PHASE               -0.188413E+04


ESTIMATE VALUES ENTERING LAST PHASE

 -0.403  -0.651   0.368  -2.850  -4.161  -1.967  -2.609  -3.297   0.836  -0.758
 -1.893   0.098  -0.406   3.170   3.868  -0.823   0.195  -1.306   0.949  -0.903
 -1.546  -1.645  -2.068  -3.186   2.848   0.047   1.233
```

FINAL LOG LIKELIHOOD VALUE -0.188413E+04

NUMBER OF FREE PARAMETERS 23
NUMBER OF JUDGMENTS 1200
CAIC 0.395433E+04
BIC 0.393133E+04

FUNCTION EVALUATIONS = 5376 CONSTRAINT EVALUATIONS = 0

FINAL CONFIGURATION

-0.403	3.168
-0.652	3.867
0.362	-0.819
-2.850	0.193
-4.160	-1.309
-1.966	0.947
-2.608	-0.904
-3.297	-1.546
0.832	-1.644
-0.760	-2.065
-1.895	-3.184
0.096	2.846
-0.407	0.047

FINAL VARIANCES

1.236

TRANSFORMED CONFIGURATION

-0.403	0.104
-0.461	0.175
-0.027	-0.235
0.072	0.173
0.316	0.216
-0.065	0.127
0.173	0.077
0.286	0.109
0.031	-0.338
0.178	-0.195
0.370	-0.146
-0.401	0.030
-0.070	-0.097

CORRELATION OF TARGET AND ESTIMATED DISTANCES = 0.9681 SUM OF DISTANCE DIFFERENCES = 0.614249E+00

TRANSFORMED VARIANCES
0.019

CONTRIBUTIONS TO FINAL LOG LIKELIHOOD FUNCTION (SUBJECT, OBJECT, LIKELIHOOD)

1	1	0.000E+00	1	2	0.000E+00	1	3	0.000E+00	1	4	0.000E+00	1	5	0.000E+00
1	1	0.000E+00	1	2	0.000E+00	1	3	0.000E+00	1	4	0.000E+00	1	5	0.000E+00
1	1	0.000E+00	1	2	0.000E+00									
2	1	0.000E+00	2	2	0.000E+00	2	3	0.000E+00	2	4	0.000E+00	2	5	0.000E+00
2	1	0.000E+00	2	2	0.000E+00	2	3	0.000E+00	2	4	0.000E+00	2	5	0.000E+00
2	1	0.000E+00	2	2	0.000E+00									
3	1	0.000E+00	3	2	0.000E+00	3	3	0.000E+00	3	4	0.000E+00	3	5	0.000E+00
3	1	0.000E+00	3	2	0.000E+00	3	3	0.000E+00	3	4	0.000E+00	3	5	0.000E+00
3	1	0.000E+00	3	2	0.000E+00									
4	1	0.000E+00	4	2	0.000E+00	4	3	0.000E+00	4	4	0.000E+00	4	5	0.000E+00
4	1	0.000E+00	4	2	0.000E+00	4	3	0.000E+00	4	4	0.000E+00	4	5	0.000E+00
4	1	0.000E+00	4	2	0.000E+00									
5	1	0.000E+00	5	2	0.000E+00	5	3	0.000E+00	5	4	0.000E+00	5	5	0.000E+00
5	1	0.000E+00	5	2	0.000E+00	5	3	0.000E+00	5	4	0.000E+00	5	5	0.000E+00
5	1	0.000E+00	5	2	0.000E+00									
6	1	0.000E+00	6	2	0.000E+00	6	3	0.000E+00	6	4	0.000E+00	6	5	0.000E+00
6	1	0.000E+00	6	2	0.000E+00	6	3	0.000E+00	6	4	0.000E+00	6	5	0.000E+00
6	1	0.000E+00	6	2	0.000E+00									
7	1	0.000E+00	7	2	0.000E+00	7	3	0.000E+00	7	4	0.000E+00	7	5	0.000E+00
7	1	0.000E+00	7	2	0.000E+00	7	3	0.000E+00	7	4	0.000E+00	7	5	0.000E+00
7	1	0.000E+00	7	2	0.000E+00									
8	1	0.000E+00	8	2	0.000E+00	8	3	0.000E+00	8	4	0.000E+00	8	5	0.000E+00
8	1	0.000E+00	8	2	0.000E+00	8	3	0.000E+00	8	4	0.000E+00	8	5	0.000E+00
8	1	0.000E+00	8	2	0.000E+00									
9	1	0.000E+00	9	2	0.000E+00	9	3	0.000E+00	9	4	0.000E+00	9	5	0.000E+00
9	1	0.000E+00	9	2	0.000E+00	9	3	0.000E+00	9	4	0.000E+00	9	5	0.000E+00
9	1	0.000E+00	9	2	0.000E+00									
10	1	0.000E+00	10	2	0.000E+00	10	3	0.000E+00	10	4	0.000E+00	10	5	0.000E+00
10	1	0.000E+00	10	2	0.000E+00	10	3	0.000E+00	10	4	0.000E+00	10	5	0.000E+00
10	1	0.000E+00	10	2	0.000E+00									

11	1	0.000E+00	11	2	0.000E+00	11	3	0.000E+00	11	4	0.000E+00	11	5	0.000E+00
11	1	0.000E+00	11	2	0.000E+00	11	3	0.000E+00	11	4	0.000E+00	11	5	0.000E+00
11	1	0.000E+00	11	2	0.000E+00									
12	1	0.000E+00	12	2	0.000E+00	12	3	0.000E+00	12	4	0.000E+00	12	5	0.000E+00
12	1	0.000E+00	12	2	0.000E+00	12	3	0.000E+00	12	4	0.000E+00	12	5	0.000E+00
12	1	0.000E+00	12	2	0.000E+00									
13	1	0.000E+00	13	2	0.000E+00	13	3	0.000E+00	13	4	0.000E+00	13	5	0.000E+00
13	1	0.000E+00	13	2	0.000E+00	13	3	0.000E+00	13	4	0.000E+00	13	5	0.000E+00
13	1	0.000E+00	13	2	0.000E+00									
14	1	0.000E+00	14	2	0.000E+00	14	3	0.000E+00	14	4	0.000E+00	14	5	0.000E+00
14	1	0.000E+00	14	2	0.000E+00	14	3	0.000E+00	14	4	0.000E+00	14	5	0.000E+00
14	1	0.000E+00	14	2	0.000E+00									
15	1	0.000E+00	15	2	0.000E+00	15	3	0.000E+00	15	4	0.000E+00	15	5	0.000E+00
15	1	0.000E+00	15	2	0.000E+00	15	3	0.000E+00	15	4	0.000E+00	15	5	0.000E+00
15	1	0.000E+00	15	2	0.000E+00									
16	1	0.000E+00	16	2	0.000E+00	16	3	0.000E+00	16	4	0.000E+00	16	5	0.000E+00
16	1	0.000E+00	16	2	0.000E+00	16	3	0.000E+00	16	4	0.000E+00	16	5	0.000E+00
16	1	0.000E+00	16	2	0.000E+00									
17	1	0.000E+00	17	2	0.000E+00	17	3	0.000E+00	17	4	0.000E+00	17	5	0.000E+00
17	1	0.000E+00	17	2	0.000E+00	17	3	0.000E+00	17	4	0.000E+00	17	5	0.000E+00
17	1	0.000E+00	17	2	0.000E+00									
18	1	0.000E+00	18	2	0.000E+00	18	3	0.000E+00	18	4	0.000E+00	18	5	0.000E+00
18	1	0.000E+00	18	2	0.000E+00	18	3	0.000E+00	18	4	0.000E+00	18	5	0.000E+00
18	1	0.000E+00	18	2	0.000E+00									
19	1	0.000E+00	19	2	0.000E+00	19	3	0.000E+00	19	4	0.000E+00	19	5	0.000E+00
19	1	0.000E+00	19	2	0.000E+00	19	3	0.000E+00	19	4	0.000E+00	19	5	0.000E+00
19	1	0.000E+00	19	2	0.000E+00									
20	1	0.000E+00	20	2	0.000E+00	20	3	0.000E+00	20	4	0.000E+00	20	5	0.000E+00
20	1	0.000E+00	20	2	0.000E+00	20	3	0.000E+00	20	4	0.000E+00	20	5	0.000E+00
20	1	0.000E+00	20	2	0.000E+00									
21	1	0.000E+00	21	2	0.000E+00	21	3	0.000E+00	21	4	0.000E+00	21	5	0.000E+00
21	1	0.000E+00	21	2	0.000E+00	21	3	0.000E+00	21	4	0.000E+00	21	5	0.000E+00
21	1	0.000E+00	21	2	0.000E+00									
22	1	0.000E+00	22	2	0.000E+00	22	3	0.000E+00	22	4	0.000E+00	22	5	0.000E+00
22	1	0.000E+00	22	2	0.000E+00	22	3	0.000E+00	22	4	0.000E+00	22	5	0.000E+00
22	1	0.000E+00	22	2	0.000E+00									
23	1	0.000E+00	23	2	0.000E+00	23	3	0.000E+00	23	4	0.000E+00	23	5	0.000E+00
23	1	0.000E+00	23	2	0.000E+00	23	3	0.000E+00	23	4	0.000E+00	23	5	0.000E+00
23	1	0.000E+00	23	2	0.000E+00									
24	1	0.000E+00	24	2	0.000E+00	24	3	0.000E+00	24	4	0.000E+00	24	5	0.000E+00
24	1	0.000E+00	24	2	0.000E+00	24	3	0.000E+00	24	4	0.000E+00	24	5	0.000E+00
24	1	0.000E+00	24	2	0.000E+00									
25	1	0.000E+00	25	2	0.000E+00	25	3	0.000E+00	25	4	0.000E+00	25	5	0.000E+00
25	1	0.000E+00	25	2	0.000E+00	25	3	0.000E+00	25	4	0.000E+00	25	5	0.000E+00
25	1	0.000E+00	25	2	0.000E+00									
26	1	0.000E+00	26	2	0.000E+00	26	3	0.000E+00	26	4	0.000E+00	26	5	0.000E+00
26	1	0.000E+00	26	2	0.000E+00	26	3	0.000E+00	26	4	0.000E+00	26	5	0.000E+00
26	1	0.000E+00	26	2	0.000E+00									
27	1	0.000E+00	27	2	0.000E+00	27	3	0.000E+00	27	4	0.000E+00	27	5	0.000E+00
27	1	0.000E+00	27	2	0.000E+00	27	3	0.000E+00	27	4	0.000E+00	27	5	0.000E+00
27	1	0.000E+00	27	2	0.000E+00									
28	1	0.000E+00	28	2	0.000E+00	28	3	0.000E+00	28	4	0.000E+00	28	5	0.000E+00
28	1	0.000E+00	28	2	0.000E+00	28	3	0.000E+00	28	4	0.000E+00	28	5	0.000E+00
28	1	0.000E+00	28	2	0.000E+00									
29	1	0.000E+00	29	2	0.000E+00	29	3	0.000E+00	29	4	0.000E+00	29	5	0.000E+00
29	1	0.000E+00	29	2	0.000E+00	29	3	0.000E+00	29	4	0.000E+00	29	5	0.000E+00
29	1	0.000E+00	29	2	0.000E+00									
30	1	0.000E+00	30	2	0.000E+00	30	3	0.000E+00	30	4	0.000E+00	30	5	0.000E+00
30	1	0.000E+00	30	2	0.000E+00	30	3	0.000E+00	30	4	0.000E+00	30	5	0.000E+00
30	1	0.000E+00	30	2	0.000E+00									
31	1	0.000E+00	31	2	0.000E+00	31	3	0.000E+00	31	4	0.000E+00	31	5	0.000E+00
31	1	0.000E+00	31	2	0.000E+00	31	3	0.000E+00	31	4	0.000E+00	31	5	0.000E+00
31	1	0.000E+00	31	2	0.000E+00									
32	1	0.000E+00	32	2	0.000E+00	32	3	0.000E+00	32	4	0.000E+00	32	5	0.000E+00
32	1	0.000E+00	32	2	0.000E+00	32	3	0.000E+00	32	4	0.000E+00	32	5	0.000E+00
32	1	0.000E+00	32	2	0.000E+00									
33	1	0.000E+00	33	2	0.000E+00	33	3	0.000E+00	33	4	0.000E+00	33	5	0.000E+00
33	1	0.000E+00	33	2	0.000E+00	33	3	0.000E+00	33	4	0.000E+00	33	5	0.000E+00
33	1	0.000E+00	33	2	0.000E+00									
34	1	0.000E+00	34	2	0.000E+00	34	3	0.000E+00	34	4	0.000E+00	34	5	0.000E+00
34	1	0.000E+00	34	2	0.000E+00	34	3	0.000E+00	34	4	0.000E+00	34	5	0.000E+00
34	1	0.000E+00	34	2	0.000E+00									
35	1	0.000E+00	35	2	0.000E+00	35	3	0.000E+00	35	4	0.000E+00	35	5	0.000E+00
35	1	0.000E+00	35	2	0.000E+00	35	3	0.000E+00	35	4	0.000E+00	35	5	0.000E+00
35	1	0.000E+00	35	2	0.000E+00									
36	1	0.000E+00	36	2	0.000E+00	36	3	0.000E+00	36	4	0.000E+00	36	5	0.000E+00
36	1	0.000E+00	36	2	0.000E+00	36	3	0.000E+00	36	4	0.000E+00	36	5	0.000E+00
36	1	0.000E+00	36	2	0.000E+00									
37	1	0.000E+00	37	2	0.000E+00	37	3	0.000E+00	37	4	0.000E+00	37	5	0.000E+00
37	1	0.000E+00	37	2	0.000E+00	37	3	0.000E+00	37	4	0.000E+00	37	5	0.000E+00
37	1	0.000E+00	37	2	0.000E+00									
38	1	0.000E+00	38	2	0.000E+00	38	3	0.000E+00	38	4	0.000E+00	38	5	0.000E+00
38	1	0.000E+00	38	2	0.000E+00	38	3	0.000E+00	38	4	0.000E+00	38	5	0.000E+00
38	1	0.000E+00	38	2	0.000E+00									
39	1	0.000E+00	39	2	0.000E+00	39	3	0.000E+00	39	4	0.000E+00	39	5	0.000E+00
39	1	0.000E+00	39	2	0.000E+00	39	3	0.000E+00	39	4	0.000E+00	39	5	0.000E+00
39	1	0.000E+00	39	2	0.000E+00									
40	1	0.000E+00	40	2	0.000E+00	40	3	0.000E+00	40	4	0.000E+00	40	5	0.000E+00
40	1	0.000E+00	40	2	0.000E+00	40	3	0.000E+00	40	4	0.000E+00	40	5	0.000E+00

```
40   1   0.000E+00  40   2   0.000E+00
41   1   0.000E+00  41   2   0.000E+00  41   3   0.000E+00  41   4   0.000E+00  41   5   0.000E+00
41   1   0.000E+00  41   2   0.000E+00  41   3   0.000E+00  41   4   0.000E+00  41   5   0.000E+00
41   1   0.000E+00  41   2   0.000E+00
42   1   0.000E+00  42   2   0.000E+00  42   3   0.000E+00  42   4   0.000E+00  42   5   0.000E+00
42   1   0.000E+00  42   2   0.000E+00  42   3   0.000E+00  42   4   0.000E+00  42   5   0.000E+00
42   1   0.000E+00  42   2   0.000E+00
43   1   0.000E+00  43   2   0.000E+00  43   3   0.000E+00  43   4   0.000E+00  43   5   0.000E+00
43   1   0.000E+00  43   2   0.000E+00  43   3   0.000E+00  43   4   0.000E+00  43   5   0.000E+00
43   1   0.000E+00  43   2   0.000E+00
44   1   0.000E+00  44   2   0.000E+00  44   3   0.000E+00  44   4   0.000E+00  44   5   0.000E+00
44   1   0.000E+00  44   2   0.000E+00  44   3   0.000E+00  44   4   0.000E+00  44   5   0.000E+00
44   1   0.000E+00  44   2   0.000E+00
45   1   0.000E+00  45   2   0.000E+00  45   3   0.000E+00  45   4   0.000E+00  45   5   0.000E+00
45   1   0.000E+00  45   2   0.000E+00  45   3   0.000E+00  45   4   0.000E+00  45   5   0.000E+00
45   1   0.000E+00  45   2   0.000E+00
46   1   0.000E+00  46   2   0.000E+00  46   3   0.000E+00  46   4   0.000E+00  46   5   0.000E+00
46   1   0.000E+00  46   2   0.000E+00  46   3   0.000E+00  46   4   0.000E+00  46   5   0.000E+00
46   1   0.000E+00  46   2   0.000E+00
47   1   0.000E+00  47   2   0.000E+00  47   3   0.000E+00  47   4   0.000E+00  47   5   0.000E+00
47   1   0.000E+00  47   2   0.000E+00  47   3   0.000E+00  47   4   0.000E+00  47   5   0.000E+00
47   1   0.000E+00  47   2   0.000E+00
48   1   0.000E+00  48   2   0.000E+00  48   3   0.000E+00  48   4   0.000E+00  48   5   0.000E+00
48   1   0.000E+00  48   2   0.000E+00  48   3   0.000E+00  48   4   0.000E+00  48   5   0.000E+00
48   1   0.000E+00  48   2   0.000E+00
49   1   0.000E+00  49   2   0.000E+00  49   3   0.000E+00  49   4   0.000E+00  49   5   0.000E+00
49   1   0.000E+00  49   2   0.000E+00  49   3   0.000E+00  49   4   0.000E+00  49   5   0.000E+00
49   1   0.000E+00  49   2   0.000E+00
50   1   0.000E+00  50   2   0.000E+00  50   3   0.000E+00  50   4   0.000E+00  50   5   0.000E+00
50   1   0.000E+00  50   2   0.000E+00  50   3   0.000E+00  50   4   0.000E+00  50   5   0.000E+00
50   1   0.000E+00  50   2   0.000E+00
51   1   0.000E+00  51   2   0.000E+00  51   3   0.000E+00  51   4   0.000E+00  51   5   0.000E+00
51   1   0.000E+00  51   2   0.000E+00  51   3   0.000E+00  51   4   0.000E+00  51   5   0.000E+00
51   1   0.000E+00  51   2   0.000E+00
52   1   0.000E+00  52   2   0.000E+00  52   3   0.000E+00  52   4   0.000E+00  52   5   0.000E+00
52   1   0.000E+00  52   2   0.000E+00  52   3   0.000E+00  52   4   0.000E+00  52   5   0.000E+00
52   1   0.000E+00  52   2   0.000E+00
53   1   0.000E+00  53   2   0.000E+00  53   3   0.000E+00  53   4   0.000E+00  53   5   0.000E+00
53   1   0.000E+00  53   2   0.000E+00  53   3   0.000E+00  53   4   0.000E+00  53   5   0.000E+00
53   1   0.000E+00  53   2   0.000E+00
54   1   0.000E+00  54   2   0.000E+00  54   3   0.000E+00  54   4   0.000E+00  54   5   0.000E+00
54   1   0.000E+00  54   2   0.000E+00  54   3   0.000E+00  54   4   0.000E+00  54   5   0.000E+00
54   1   0.000E+00  54   2   0.000E+00
55   1   0.000E+00  55   2   0.000E+00  55   3   0.000E+00  55   4   0.000E+00  55   5   0.000E+00
55   1   0.000E+00  55   2   0.000E+00  55   3   0.000E+00  55   4   0.000E+00  55   5   0.000E+00
55   1   0.000E+00  55   2   0.000E+00
56   1   0.000E+00  56   2   0.000E+00  56   3   0.000E+00  56   4   0.000E+00  56   5   0.000E+00
56   1   0.000E+00  56   2   0.000E+00  56   3   0.000E+00  56   4   0.000E+00  56   5   0.000E+00
56   1   0.000E+00  56   2   0.000E+00
57   1   0.000E+00  57   2   0.000E+00  57   3   0.000E+00  57   4   0.000E+00  57   5   0.000E+00
57   1   0.000E+00  57   2   0.000E+00  57   3   0.000E+00  57   4   0.000E+00  57   5   0.000E+00
57   1   0.000E+00  57   2   0.000E+00
58   1   0.000E+00  58   2   0.000E+00  58   3   0.000E+00  58   4   0.000E+00  58   5   0.000E+00
58   1   0.000E+00  58   2   0.000E+00  58   3   0.000E+00  58   4   0.000E+00  58   5   0.000E+00
58   1   0.000E+00  58   2   0.000E+00
59   1   0.000E+00  59   2   0.000E+00  59   3   0.000E+00  59   4   0.000E+00  59   5   0.000E+00
59   1   0.000E+00  59   2   0.000E+00  59   3   0.000E+00  59   4   0.000E+00  59   5   0.000E+00
59   1   0.000E+00  59   2   0.000E+00
60   1   0.000E+00  60   2   0.000E+00  60   3   0.000E+00  60   4   0.000E+00  60   5   0.000E+00
60   1   0.000E+00  60   2   0.000E+00  60   3   0.000E+00  60   4   0.000E+00  60   5   0.000E+00
60   1   0.000E+00  60   2   0.000E+00
61   1   0.000E+00  61   2   0.000E+00  61   3   0.000E+00  61   4   0.000E+00  61   5   0.000E+00
61   1   0.000E+00  61   2   0.000E+00  61   3   0.000E+00  61   4   0.000E+00  61   5   0.000E+00
61   1   0.000E+00  61   2   0.000E+00
62   1   0.000E+00  62   2   0.000E+00  62   3   0.000E+00  62   4   0.000E+00  62   5   0.000E+00
62   1   0.000E+00  62   2   0.000E+00  62   3   0.000E+00  62   4   0.000E+00  62   5   0.000E+00
62   1   0.000E+00  62   2   0.000E+00
63   1   0.000E+00  63   2   0.000E+00  63   3   0.000E+00  63   4   0.000E+00  63   5   0.000E+00
63   1   0.000E+00  63   2   0.000E+00  63   3   0.000E+00  63   4   0.000E+00  63   5   0.000E+00
63   1   0.000E+00  63   2   0.000E+00
64   1   0.000E+00  64   2   0.000E+00  64   3   0.000E+00  64   4   0.000E+00  64   5   0.000E+00
64   1   0.000E+00  64   2   0.000E+00  64   3   0.000E+00  64   4   0.000E+00  64   5   0.000E+00
64   1   0.000E+00  64   2   0.000E+00
65   1   0.000E+00  65   2   0.000E+00  65   3   0.000E+00  65   4   0.000E+00  65   5   0.000E+00
65   1   0.000E+00  65   2   0.000E+00  65   3   0.000E+00  65   4   0.000E+00  65   5   0.000E+00
65   1   0.000E+00  65   2   0.000E+00
66   1   0.000E+00  66   2   0.000E+00  66   3   0.000E+00  66   4   0.000E+00  66   5   0.000E+00
66   1   0.000E+00  66   2   0.000E+00  66   3   0.000E+00  66   4   0.000E+00  66   5   0.000E+00
66   1   0.000E+00  66   2   0.000E+00
67   1   0.000E+00  67   2   0.000E+00  67   3   0.000E+00  67   4   0.000E+00  67   5   0.000E+00
67   1   0.000E+00  67   2   0.000E+00  67   3   0.000E+00  67   4   0.000E+00  67   5   0.000E+00
67   1   0.000E+00  67   2   0.000E+00
68   1   0.000E+00  68   2   0.000E+00  68   3   0.000E+00  68   4   0.000E+00  68   5   0.000E+00
68   1   0.000E+00  68   2   0.000E+00  68   3   0.000E+00  68   4   0.000E+00  68   5   0.000E+00
68   1   0.000E+00  68   2   0.000E+00
69   1   0.000E+00  69   2   0.000E+00  69   3   0.000E+00  69   4   0.000E+00  69   5   0.000E+00
69   1   0.000E+00  69   2   0.000E+00  69   3   0.000E+00  69   4   0.000E+00  69   5   0.000E+00
69   1   0.000E+00  69   2   0.000E+00
70   1   0.000E+00  70   2   0.000E+00  70   3   0.000E+00  70   4   0.000E+00  70   5   0.000E+00
```

```
70   1   0.000E+00  70   2   0.000E+00  70   3   0.000E+00  70   4   0.000E+00  70   5   0.000E+00
70   1   0.000E+00  70   2   0.000E+00
71   1   0.000E+00  71   2   0.000E+00  71   3   0.000E+00  71   4   0.000E+00  71   5   0.000E+00
71   1   0.000E+00  71   2   0.000E+00  71   3   0.000E+00  71   4   0.000E+00  71   5   0.000E+00
71   1   0.000E+00  71   2   0.000E+00
72   1   0.000E+00  72   2   0.000E+00  72   3   0.000E+00  72   4   0.000E+00  72   5   0.000E+00
72   1   0.000E+00  72   2   0.000E+00  72   3   0.000E+00  72   4   0.000E+00  72   5   0.000E+00
72   1   0.000E+00  72   2   0.000E+00
73   1   0.000E+00  73   2   0.000E+00  73   3   0.000E+00  73   4   0.000E+00  73   5   0.000E+00
73   1   0.000E+00  73   2   0.000E+00  73   3   0.000E+00  73   4   0.000E+00  73   5   0.000E+00
73   1   0.000E+00  73   2   0.000E+00
74   1   0.000E+00  74   2   0.000E+00  74   3   0.000E+00  74   4   0.000E+00  74   5   0.000E+00
74   1   0.000E+00  74   2   0.000E+00  74   3   0.000E+00  74   4   0.000E+00  74   5   0.000E+00
74   1   0.000E+00  74   2   0.000E+00
75   1   0.000E+00  75   2   0.000E+00  75   3   0.000E+00  75   4   0.000E+00  75   5   0.000E+00
75   1   0.000E+00  75   2   0.000E+00  75   3   0.000E+00  75   4   0.000E+00  75   5   0.000E+00
75   1   0.000E+00  75   2   0.000E+00
76   1   0.000E+00  76   2   0.000E+00  76   3   0.000E+00  76   4   0.000E+00  76   5   0.000E+00
76   1   0.000E+00  76   2   0.000E+00  76   3   0.000E+00  76   4   0.000E+00  76   5   0.000E+00
76   1   0.000E+00  76   2   0.000E+00
77   1   0.000E+00  77   2   0.000E+00  77   3   0.000E+00  77   4   0.000E+00  77   5   0.000E+00
77   1   0.000E+00  77   2   0.000E+00  77   3   0.000E+00  77   4   0.000E+00  77   5   0.000E+00
77   1   0.000E+00  77   2   0.000E+00
78   1   0.000E+00  78   2   0.000E+00  78   3   0.000E+00  78   4   0.000E+00  78   5   0.000E+00
78   1   0.000E+00  78   2   0.000E+00  78   3   0.000E+00  78   4   0.000E+00  78   5   0.000E+00
78   1   0.000E+00  78   2   0.000E+00
79   1   0.000E+00  79   2   0.000E+00  79   3   0.000E+00  79   4   0.000E+00  79   5   0.000E+00
79   1   0.000E+00  79   2   0.000E+00  79   3   0.000E+00  79   4   0.000E+00  79   5   0.000E+00
79   1   0.000E+00  79   2   0.000E+00
80   1   0.000E+00  80   2   0.000E+00  80   3   0.000E+00  80   4   0.000E+00  80   5   0.000E+00
80   1   0.000E+00  80   2   0.000E+00  80   3   0.000E+00  80   4   0.000E+00  80   5   0.000E+00
80   1   0.000E+00  80   2   0.000E+00
81   1   0.000E+00  81   2   0.000E+00  81   3   0.000E+00  81   4   0.000E+00  81   5   0.000E+00
81   1   0.000E+00  81   2   0.000E+00  81   3   0.000E+00  81   4   0.000E+00  81   5   0.000E+00
81   1   0.000E+00  81   2   0.000E+00
82   1   0.000E+00  82   2   0.000E+00  82   3   0.000E+00  82   4   0.000E+00  82   5   0.000E+00
82   1   0.000E+00  82   2   0.000E+00  82   3   0.000E+00  82   4   0.000E+00  82   5   0.000E+00
82   1   0.000E+00  82   2   0.000E+00
83   1   0.000E+00  83   2   0.000E+00  83   3   0.000E+00  83   4   0.000E+00  83   5   0.000E+00
83   1   0.000E+00  83   2   0.000E+00  83   3   0.000E+00  83   4   0.000E+00  83   5   0.000E+00
83   1   0.000E+00  83   2   0.000E+00
84   1   0.000E+00  84   2   0.000E+00  84   3   0.000E+00  84   4   0.000E+00  84   5   0.000E+00
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84   1   0.000E+00  84   2   0.000E+00
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85   1   0.000E+00  85   2   0.000E+00
86   1   0.000E+00  86   2   0.000E+00  86   3   0.000E+00  86   4   0.000E+00  86   5   0.000E+00
86   1   0.000E+00  86   2   0.000E+00  86   3   0.000E+00  86   4   0.000E+00  86   5   0.000E+00
86   1   0.000E+00  86   2   0.000E+00
87   1   0.000E+00  87   2   0.000E+00  87   3   0.000E+00  87   4   0.000E+00  87   5   0.000E+00
87   1   0.000E+00  87   2   0.000E+00  87   3   0.000E+00  87   4   0.000E+00  87   5   0.000E+00
87   1   0.000E+00  87   2   0.000E+00
88   1   0.000E+00  88   2   0.000E+00  88   3   0.000E+00  88   4   0.000E+00  88   5   0.000E+00
88   1   0.000E+00  88   2   0.000E+00  88   3   0.000E+00  88   4   0.000E+00  88   5   0.000E+00
88   1   0.000E+00  88   2   0.000E+00
89   1   0.000E+00  89   2   0.000E+00  89   3   0.000E+00  89   4   0.000E+00  89   5   0.000E+00
89   1   0.000E+00  89   2   0.000E+00  89   3   0.000E+00  89   4   0.000E+00  89   5   0.000E+00
89   1   0.000E+00  89   2   0.000E+00
90   1   0.000E+00  90   2   0.000E+00  90   3   0.000E+00  90   4   0.000E+00  90   5   0.000E+00
90   1   0.000E+00  90   2   0.000E+00  90   3   0.000E+00  90   4   0.000E+00  90   5   0.000E+00
90   1   0.000E+00  90   2   0.000E+00
91   1   0.000E+00  91   2   0.000E+00  91   3   0.000E+00  91   4   0.000E+00  91   5   0.000E+00
91   1   0.000E+00  91   2   0.000E+00  91   3   0.000E+00  91   4   0.000E+00  91   5   0.000E+00
91   1   0.000E+00  91   2   0.000E+00
92   1   0.000E+00  92   2   0.000E+00  92   3   0.000E+00  92   4   0.000E+00  92   5   0.000E+00
92   1   0.000E+00  92   2   0.000E+00  92   3   0.000E+00  92   4   0.000E+00  92   5   0.000E+00
92   1   0.000E+00  92   2   0.000E+00
93   1   0.000E+00  93   2   0.000E+00  93   3   0.000E+00  93   4   0.000E+00  93   5   0.000E+00
93   1   0.000E+00  93   2   0.000E+00  93   3   0.000E+00  93   4   0.000E+00  93   5   0.000E+00
93   1   0.000E+00  93   2   0.000E+00
94   1   0.000E+00  94   2   0.000E+00  94   3   0.000E+00  94   4   0.000E+00  94   5   0.000E+00
94   1   0.000E+00  94   2   0.000E+00  94   3   0.000E+00  94   4   0.000E+00  94   5   0.000E+00
94   1   0.000E+00  94   2   0.000E+00
95   1   0.000E+00  95   2   0.000E+00  95   3   0.000E+00  95   4   0.000E+00  95   5   0.000E+00
95   1   0.000E+00  95   2   0.000E+00  95   3   0.000E+00  95   4   0.000E+00  95   5   0.000E+00
95   1   0.000E+00  95   2   0.000E+00
96   1   0.000E+00  96   2   0.000E+00  96   3   0.000E+00  96   4   0.000E+00  96   5   0.000E+00
96   1   0.000E+00  96   2   0.000E+00  96   3   0.000E+00  96   4   0.000E+00  96   5   0.000E+00
96   1   0.000E+00  96   2   0.000E+00
97   1   0.000E+00  97   2   0.000E+00  97   3   0.000E+00  97   4   0.000E+00  97   5   0.000E+00
97   1   0.000E+00  97   2   0.000E+00  97   3   0.000E+00  97   4   0.000E+00  97   5   0.000E+00
97   1   0.000E+00  97   2   0.000E+00
98   1   0.000E+00  98   2   0.000E+00  98   3   0.000E+00  98   4   0.000E+00  98   5   0.000E+00
98   1   0.000E+00  98   2   0.000E+00  98   3   0.000E+00  98   4   0.000E+00  98   5   0.000E+00
98   1   0.000E+00  98   2   0.000E+00
99   1   0.000E+00  99   2   0.000E+00  99   3   0.000E+00  99   4   0.000E+00  99   5   0.000E+00
99   1   0.000E+00  99   2   0.000E+00  99   3   0.000E+00  99   4   0.000E+00  99   5   0.000E+00
99   1   0.000E+00  99   2   0.000E+00
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 100   1   0.000E+00 100   2   0.000E+00 100   3   0.000E+00 100   4   0.000E+00 100   5   0.000E+00
 100   1   0.000E+00 100   2   0.000E+00 100   3   0.000E+00 100   4   0.000E+00 100   5   0.000E+00
 100   1   0.000E+00 100   2   0.000E+00
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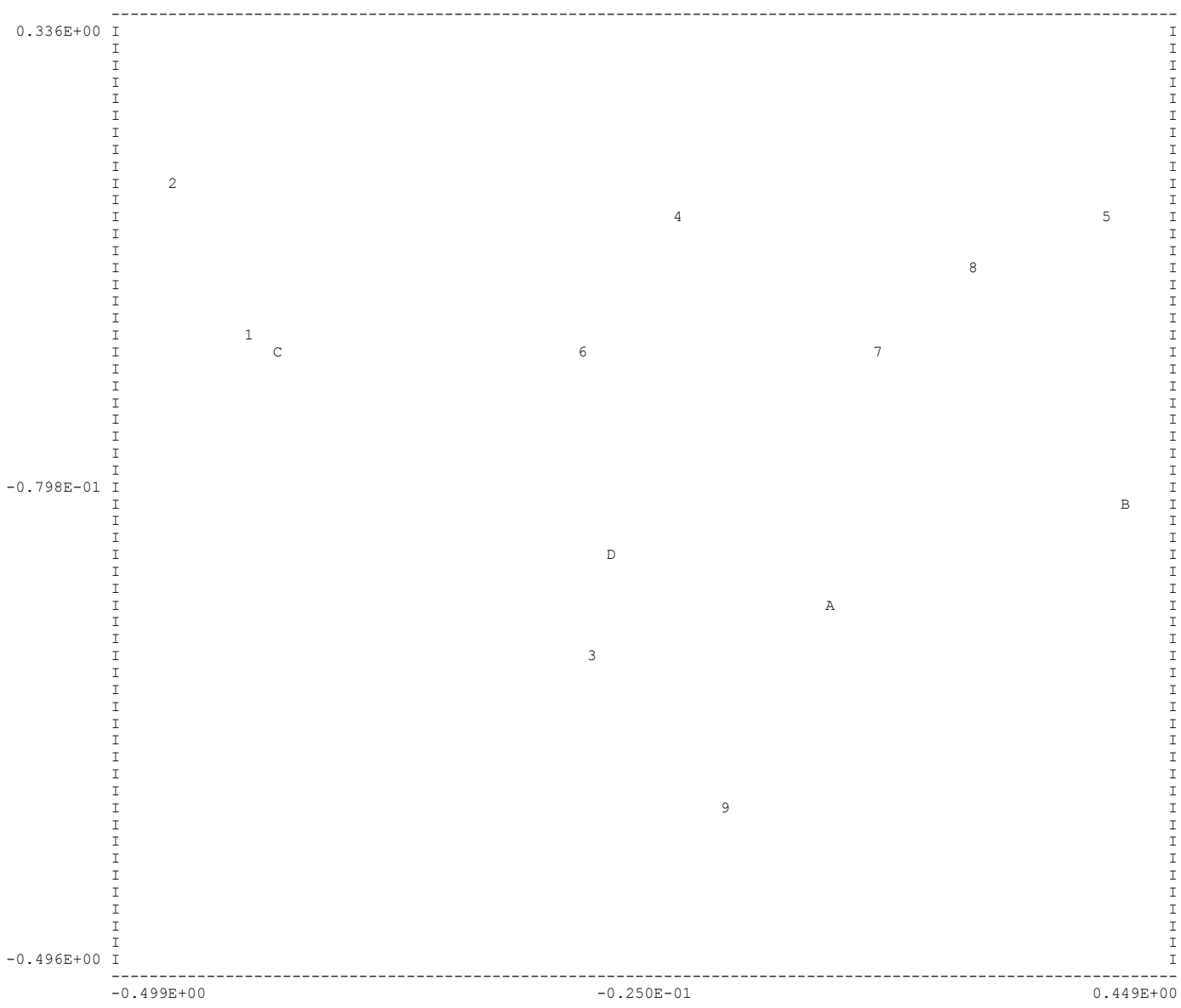
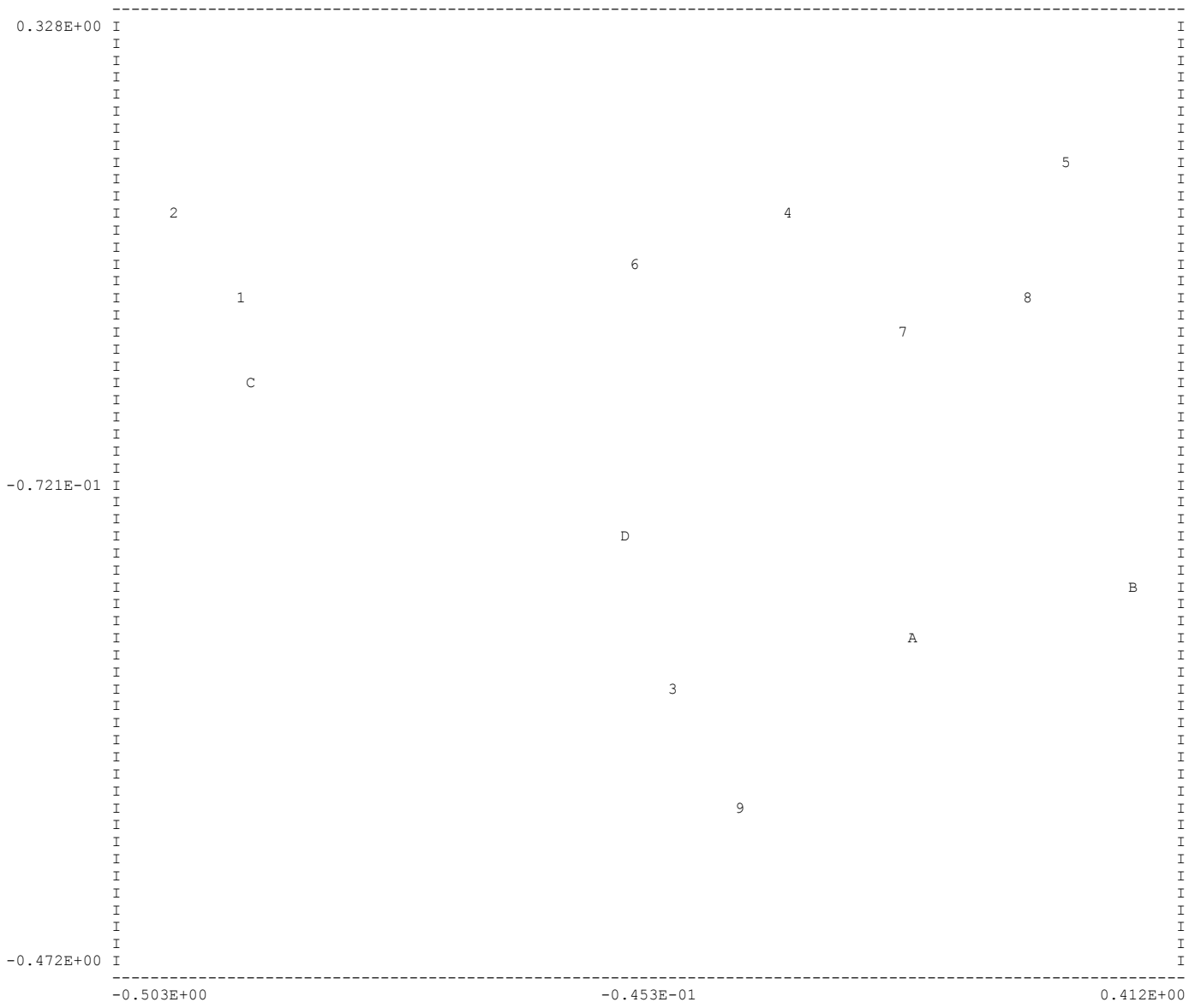
TARGET CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



TRANSFORMED / ESTIMATED CONFIGURATION DIMENSION 1 ON X AXIS DIMENSION 2 ON Y AXIS.



1 TARGET VARIANCES ON Y AXIS FINAL TRANSFORMED VARIANCES ON X AXIS

MAP CANNOT DETERMINE RANGE FROM ONLY ONE POINT

ESTIMATED TRUE AND EXPECTED DISTANCES

OBJECTS		TRUE	EXPECTED
2	1	0.741861E+00	0.223784E+01
3	1	0.406055E+01	0.446734E+01
3	2	0.479507E+01	0.513511E+01
4	1	0.385190E+01	0.428237E+01
4	2	0.428086E+01	0.466516E+01
4	3	0.336747E+01	0.386404E+01
5	1	0.584467E+01	0.611947E+01
5	2	0.625255E+01	0.650821E+01
5	3	0.454864E+01	0.490860E+01
5	4	0.199334E+01	0.282050E+01
6	1	0.271663E+01	0.333588E+01

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  6   2    0.320254E+01    0.372594E+01
  6   3    0.292224E+01    0.349753E+01
  6   4    0.116095E+01    0.237813E+01
  6   5    0.314635E+01    0.367948E+01
  7   1    0.463107E+01    0.498413E+01
  7   2    0.515646E+01    0.547088E+01
  7   3    0.297142E+01    0.353698E+01
  7   4    0.112344E+01    0.236313E+01
  7   5    0.160393E+01    0.258916E+01
  7   6    0.195872E+01    0.279842E+01
  8   1    0.553189E+01    0.582340E+01
  8   2    0.602483E+01    0.629083E+01
  8   3    0.373025E+01    0.417575E+01
  8   4    0.179609E+01    0.269850E+01
  8   5    0.895627E+00    0.228225E+01
  8   6    0.282571E+01    0.342095E+01
  8   7    0.941631E+00    0.229715E+01
  9   1    0.496824E+01    0.529552E+01
  9   2    0.570742E+01    0.598931E+01
  9   3    0.949177E+00    0.229966E+01
  9   4    0.411496E+01    0.451597E+01
  9   5    0.500407E+01    0.532882E+01
  9   6    0.381355E+01    0.424866E+01
  9   7    0.351942E+01    0.399337E+01
  9   8    0.413047E+01    0.452986E+01
 10   1    0.524566E+01    0.555433E+01
 10   2    0.593322E+01    0.620363E+01
 10   3    0.167657E+01    0.262932E+01
 10   4    0.307668E+01    0.362233E+01
 10   5    0.348326E+01    0.396242E+01
 10   6    0.324421E+01    0.376059E+01
 10   7    0.218258E+01    0.294587E+01
 10   8    0.258912E+01    0.323853E+01
 10   9    0.164750E+01    0.261308E+01
 11   1    0.652511E+01    0.676940E+01
 11   2    0.715970E+01    0.738105E+01
 11   3    0.326854E+01    0.378090E+01
 11   4    0.350961E+01    0.398497E+01
 11   5    0.294108E+01    0.351261E+01
 11   6    0.413114E+01    0.453046E+01
 11   7    0.238905E+01    0.309087E+01
 11   8    0.215588E+01    0.292773E+01
 11   9    0.313207E+01    0.366773E+01
 11  10    0.159339E+01    0.258346E+01
 12   1    0.594014E+00    0.220301E+01
 12   2    0.126579E+01    0.242253E+01
 12   3    0.367527E+01    0.412789E+01
 12   4    0.396417E+01    0.438160E+01
 12   5    0.594795E+01    0.621764E+01
 12   6    0.280383E+01    0.340376E+01
 12   7    0.462347E+01    0.497715E+01
 12   8    0.555020E+01    0.584068E+01
 12   9    0.454996E+01    0.490982E+01
 12  10    0.498536E+01    0.531143E+01
 12  11    0.635022E+01    0.660169E+01
 13   1    0.312111E+01    0.365872E+01
 13   2    0.382771E+01    0.426110E+01
 13   3    0.115884E+01    0.237728E+01
 13   4    0.244672E+01    0.313276E+01
 13   5    0.399044E+01    0.440492E+01
 13   6    0.179979E+01    0.270070E+01
 13   7    0.239775E+01    0.309715E+01
 13   8    0.329982E+01    0.380709E+01
 13   9    0.209683E+01    0.288812E+01
 13  10    0.214166E+01    0.291812E+01
 13  11    0.355714E+01    0.402576E+01
 13  12    0.284380E+01    0.343522E+01


 ELAPSED MINUTES =         4
```

APPENDIX 1 Key for Instructional Variables' Nominal Output

Variable	Code	Definition
Target Configuration	TARG	Target configuration to be read
	TRNO	No target configuration to be read
Target Variances	TARG	Target variances to be read
	TRNO	No target variances to be read
Target Meas. Model Coefficeints	TARG	Target measurement model coefficients to be read
	TRNO	No target measurement model coefficients to be read
Standardization of Dissimilarities	STDZ	Standardization performed
	STNO	No standardization performed
Initial Estimates	TARG	Defined by target values
	COMP	Computed independent of target values
Data Type	PROX	Proximities
	PREF	Preference ratios
	PRPR	Proximities and preference ratios
	RATE	Liking ratings
	PRRA	Proximities and liking ratings
	BINR	Binary preferential choices
	PRBR	Proximities and binary choices
	BRRA	Binary choices and liking ratings
Distribution (directionality)	CHIF	Isotropic analysis
	CVNO	Anisotropic analysis
External / Internal Analysis	FXNO	Internal analysis
	STFC	External analysis – coordinates fixed
	STFA	External analysis – coordinates and variances fixed
Sampling	INDP	Independent sampling
	DEPN	Dependent sampling
Metric	ECLD	Euclidean metric
	CITY	City-block metric
Mixture Model	EMMM	Expectation maximization mixture model chosen
	NOEM	No mixture model analysis chosen
Reanalysis	REDO	Reanalysis chosen
	NORD	No reanalysis chosen
Proximities	NOSI	Dissimilarities data
	GAUS	Gaussian similarities transformation chosen
	EXPN	Exponential similarities transformation chosen

Transformation Model Index	0	$\delta_{ij} = d_{ij}$
	1	$\delta_{ij} = a + d_{ij}$
	2	$\delta_{ij} = bd_{ij}$
	3	$\delta_{ij} = d_{ij}^{c}$
	4	$\delta_{ij} = a + bd_{ij}$
	5	$\delta_{ij} = a + d_{ij}^{c}$
	6	$\delta_{ij} = bd_{ij}^{c}$
	7	$\delta_{ij} = a + bd_{ij}^{c}$

APPENDIX 2 Segmentation Analysis Output

When an EM algorithm is specified for estimating the segment membership, the initial analysis, based upon the user's *a priori* estimate of segment membership, proceeds as it usually does. The output is unchanged.

After the initial analysis is completed, the EM phase begins. PROSCAL goes through cycles in which the probability of segment membership is first estimated and then the measurement model coefficient, centroid and variance estimates are updated. The cycles stop when the likelihoods no longer continue to increase.

The probabilities of each subject being in each segment are then printed. Deterministic segment assignments, based upon the segment with the highest probability of membership, are also printed.

When a reanalysis is requested, the deterministic segment assignments of the prior stage are used to begin a new analysis. Initial coordinate and variance estimates are based upon the original judgments or target values, not the EM estimates. The output is identical to what appears in a standard analysis.

REFERENCES

Akaike, H. (1974). A new look at the statistical model identification. *IEEE Transactions on Automatic Control*, AC-19, 716-723.

Bozdogan, H. (1987). Model selection and Akaike's information criterion (AIC): the general theory and its analytical extensions. *Psychometrika*, 52, 345-370.

Chandler, J. P. (1969). STEPIT – Finds local minima of a smooth function of several parameters. *Behavioral Science*, 14, 81-82.

Cliff, N. (1966). Orthogonal rotation to congruence." *Psychometrika*, 31, 33-42.

Coombs, C. H. (1964). *A Theory of Data*. New York: Wiley.

Hefner, R. (1958). *Extensions to the Law of Comparative Judgment to Discriminable and Multidimensional Stimuli*. Unpublished Ph.D. dissertation, Psychology Department, University of Michigan.

Imhof, J. P. (1961). "Computing the distribution of quadratic forms in normal variables," *Biometrika*, 48, 419-426.

Jensen, D. R. and Solomon, H. (1972). "A Gaussian approximation to the distribution of a definite quadratic form," *Journal of the American Statistical Association*, 67, 898-902.

MacKay, D. B. (1983). "Alternative probabilistic scaling models for spatial data," *Geographical Analysis*, 15, 173-186.

MacKay, D. B. (1989). "Probabilistic multidimensional scaling: an anisotropic model for distance judgments," *Journal of Mathematical Psychology*, 33, 187-205.

MacKay, D. B. (2001). "Probabilistic multidimensional scaling using a city-block metric," *Journal of Mathematical Psychology*, 45, 249-264.

MacKay, D. B., Easley, R. F. And Zinnes, J. L. (1995). A single ideal point model for market structure analysis, *Journal of Marketing Research*, 32, 433-443.

MacKay, D.B. and Lilly, B (2004). "Percept variance, subadditivity and the metric classification of similarity, and dissimilarity data, *Journal of Classification*, 21, 185-2006.

MacKay, D. B. and Zinnes, J. L. (1986). "A probabilistic model for the multidimensional scaling of proximity and preference data," *Marketing Science*, 5, 348-349.

MacKay, D. B. And Zinnes, J. L. (1995). "Probabilistic multidimensional unfolding: an anisotropic model for preference ratio judgments," *Journal of Mathematical Psychology*, 99 - 111.

Pearson, E. S. (1959). "Note on an approximation to the distribution of non-central χ^2." *Biometrika*, 46, 364.

Schwarz, G. (1978), “Estimating the dimension of a model,” *The Annals of Statistics*, 6, 461-464.

Thurstone, L. L. (1927). “A law of comparative judgment”, *Psychological Review*, 34, 273-286.

Zinnes, J. L. and MacKay, D. B. (1989). "Probabilistic multidimensional analysis of preference ratio judgments," in G. De Soete, H. Feger and K. C. Klauer (eds*.), New Developments in Psychological Choice Modeling*. New York: Elsevier, 177-205.

Zinnes, J. L. and MacKay, D. B. (1983). "Probabilistic multidimensional scaling: complete and incomplete data," *Psychometrika*, 48, 27-48.