

ANNOTATED VERSION OF A NEWMDSX MINISSA (N) RUN

APMC 2002

MDSX output is originally designed for the 120-character line-printer.
It reproduces best using COURIER 7-point type, thus avoiding wrap-around

PROGRAM NAME AND VERSION FORM THE TOP BANNER:

```
MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20
MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20
MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20
MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20
MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20  MINISSAN  VERSION 3.20
```

AND THIS IS THE PERSON RESPONSIBLE FOR WRITING THE ORIGINAL PROGRAM, ...

ORIGINATOR: E.E. ROSKAM,
UNIVERSITY OF NIJMEGEN,
THE NETHERLANDS.

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+-----+
|                                     |
|          *** NEW M D S X ***      |
|                                     |
| AN INTEGRATED SERIES OF MULTIDIMENSIONAL SCALING PROGRAMS WITH A COMMON COMMAND |
| LANGUAGE, FOR USE WITH WINDOWS32.  FIRST PUBLISHED,  JULY, 2001                |
|                                     |
| PROGRAMS AND SUPPORTING DOCUMENTATION ARE DISTRIBUTED FROM : HTTP://WWW.NEWMDSX.COM |
|                                     |
| USERS ARE EXPECTED TO CITE THE PROGRAM ORIGINATOR AND THE NEWMDSX SERIES WHEN  |
| PUBLISHING RESULTS.                |
|                                     |
+-----+
```

FIRST, THE SET-UP FILE IS MIRRORED BACK TO USER AS A RECORD OF THE PARAMETERS OF THE RUN...

```
1.  RUN NAME      SORTPAC MINISSA
2.  COMMENT       FROM MSDC2000_FULL68.TXT FILE USING ORDINARY CO-OCCURRENCE (M1)
3.  N OF STIMULI  28
4.  DIMENSIONS    2
5.  PARAMETERS    DATA(0)
6.  INPUT FORMAT  (27F4.0)
7.  COMMENT       SORTPAC
8.  READ MATRIX
```

27 ROWS (OF THE LT DATA MATRIX) ARE READ.

```
9.  PRINT DATA   YES
10. PLOT          ALL
11. COMPUTE
```

SORTPAC MINISSA

TASK NUMBER 1

PERCENTAGE OF INFORMATION LOST BY TIES IS 3.6 (I.E. 3.6% [14] OF THE 378 DATA VALUES ARE TIED)

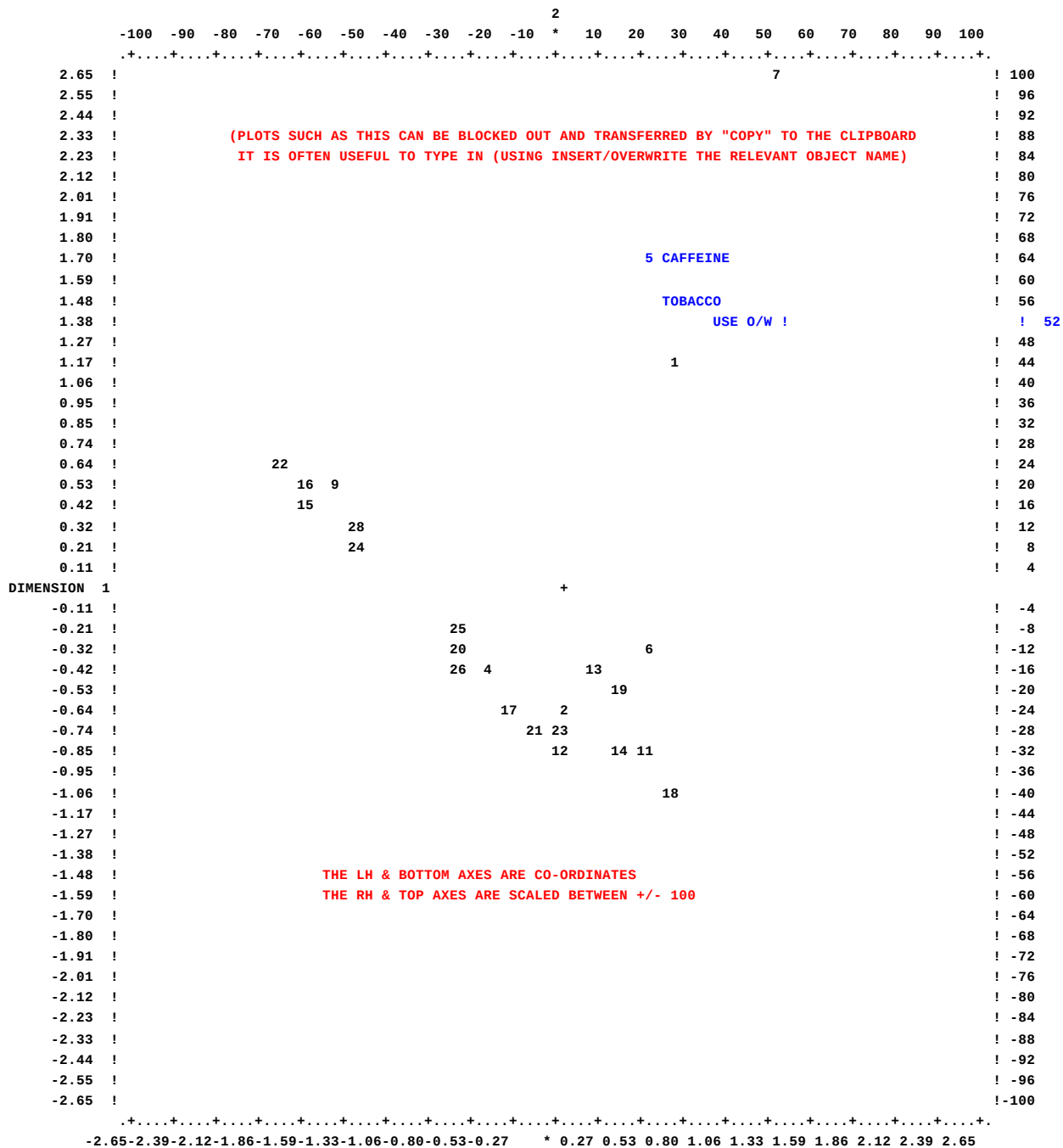
SORTPAC MINISSA

TASK NUMBER 1

INITIAL CONFIGURATION PRINTED OUT BECAUSE REQUESTED TO ...

DIMENSION 2 PLOTTED AGAINST DIMENSION 1

DIMENSION



POINT 22 OVERLAYS POINT(S) 3 PRINT POSITIONS CANNOT OVERPRINT, SO THIS WARNS YOU WHERE OVERLAY OCCURS

POINT 11 OVERLAYS POINT(S) 10 8

SORTPAC MINISSA

TASK NUMBER 1

SOLUTION IN 2 DIMENSIONS: EACH DIMENSION SOLUTION IS DONE SEPARATELY FROM HIGHEST TO LOWEST DIMENSIONALITY SPECIFIED

* * * * *

(... THE STRESS-MINIMIZATION PROCEDURE DETAILS HAVE BEEN LEFT OUT, AND THE PROCESS TERMINATED. FIT MEASURES FOLLOW...

FIT= DHAT ; ALGORITHM= HARD SQUEEZE; (SEE PROGRAM DESCRIPTION)

RAW STRESS DHAT = 7.342794
STRESS DHAT = 0.096777 DHAT IS KRUSKAL'S BFMF; DSTAR IS GUTTMAN'S RANK-IMAGES
RAW STRESS DSTAR = 9.526464
COEF. ALIEN. DSTAR = 0.110064 (A GUTTMAN MEASURE AKIN TO STRESS; SEE DOC.)

STRESS1 BASED ON APPROXIMATION TO RANDOM DATA (SPENCE,MBR 1979 V14) = 0.290413
THIS IS UNIQUE TO MDSX MINISSA: IT PROVIDES A "RANDOM BASELINE" (SEE KTMD5 READING BY SPENCE) --
AND/OR A CHECK ON WHETHER YOU'VE GOT THE SIMILARITY/DISSIMILARITY PARAMETER THE RIGHT WAY ROUND!!
OPTIMAL SOLUTION USING DSTAR WAS REACHED AFTER ITERATION 6
OPTIMAL SOLUTION USING DHAT WAS REACHED AFTER ITERATION 12

(THE CO-ORDINATES OF THE SOLUTION, ROTATED TO PCA, FOLLOW. CLICKING THE MOUSE ON THE "F" OF FINAL
AND CLICKING ON THE GRAPHICS ICON IN NEWMDSX FOR WINDOWS PRODUCES A NICE COLOURED GRAPHIC YOU CAN SAVE AND EXPORT. THE SAME IS TRUE OF THE
SHEPARD DIAGRAM)

FINAL CONFIGURATION

1	0.4838	1.2481
2	-0.6817	-0.0758
3	1.0860	-0.3655
4	-0.0739	-0.4181
5	0.7289	1.1753
6	-0.6696	0.6905
7	0.7679	1.2469
8	-0.9405	0.0720
9	1.0724	-0.2635
10	-0.9488	0.0304
11	-0.9105	0.1472
12	-0.8527	-0.7388
13	-0.4805	0.6596
14	-0.8983	0.0464
15	0.9849	-0.6701
16	1.0319	-0.3698
17	-0.5125	-0.5519
18	-0.9810	0.1965
19	-0.8032	0.4738
20	0.1925	-0.4714
21	-0.6246	-0.4790
22	1.0579	-0.4238
23	-0.7807	-0.3819
24	0.7958	-0.5531
25	0.3728	-0.2381
26	0.0600	-0.8645
27	0.6229	1.2109
28	0.9009	-0.3323

MEAN 0.0000 0.0000

SIGMA 0.7796 0.6263

THE PCA SOLUTION IS NORMED TO HAVE (0,0) ORIGIN AND THE SIGMA IS THE SD OR LENGTH OF THE COMPONENT

SORTPAC MINISSA

TASK NUMBER 1

BECAUSE THE USER HAS REQUESTED THE PRINTOUT OF DISTANCES ETC ... HERE THEY COME (ABBREVIATED)

FIRST, THE DISTANCES OF THE FINAL SOLUTION ...

DISTANCES

7	5	0.0815	22	3	0.0647	22	16	0.0600	27	1	0.1440	27	5	0.1118
14	8	0.0494	9	3	0.1029	27	7	0.1494	16	3	0.0543	5	1	0.2557
14	10	0.0530	22	9	0.1610	7	1	0.2841	10	8	0.0424	11	2	0.3196
.....														
15	10	2.0567	22	10	2.0575	22	8	2.0590	11	3	2.0613	15	8	2.0634
15	11	2.0641	10	3	2.0729	8	3	2.0732	18	16	2.0910	22	18	2.1311
18	3	2.1420	18	15	2.1484	12	1	2.3946						

FITTED VALUES (I.E. DISPARITIES: FIRST THE SET OF KRUSKAL DHAT VALUES, FOLLOWED BY THE GUTTMAN DSTAR VALUES)

PAIR DHAT (PAIRS ARE ORDERED ACCORDING TO VALUES IN INPUT MATRIX)

7	5	0.0687	22	3	0.0687	22	16	0.0687	27	1	0.1017	27	5	0.1017
14	8	0.1017	9	3	0.1022	27	7	0.1022	16	3	0.1022	5	1	0.1543

PAIR DSTAR (PAIRS ARE ORDERED ACCORDING TO VALUES IN INPUT MATRIX)														
7	5	0.0424	22	3	0.0494	22	16	0.0530	27	1	0.0543	27	5	0.0600
14	8	0.0647	9	3	0.0810	27	7	0.0815	16	3	0.0860	5	1	0.1016
14	10	0.1029	22	9	0.1118	7	1	0.1138	10	8	0.1229	11	2	0.1309
.....														
15	10	2.1467	22	10	2.1484	22	8	2.1504	11	3	2.1547	15	8	2.1689
15	11	2.2080	10	3	2.2176	8	3	2.2270	18	16	2.2475	22	18	2.3946
18	3	2.4451	18	15	2.4830	12	1	2.5631						

HISTOGRAM OF LOG RESIDUALS (D - DHAT) VALUES, ALSO LOG SCALE)

[illegible]

“POINT-DECOMPOSITION” OF STRESS, I.E. AMOUNT OF TOTAL STRESS VALUE ATTRIBUTABLE TO EACH POINT.
THIS IS A USEFUL DIAGNOSTIC FOR SPOTTING SERIOUSLY DISCREPANT POINTS WHICH ARE CANDIDATES FOR EXCLUSION/PARKING. THE HISTOGRAM HORIZONTAL BAR
MAKES THE LARGEST POINT CONTRIBUTION FIT THE TOP LINE, SO EVERYTHING IS RELATIVE TO THIS ONE.

P O I N T C O N T R I B U T I O N T O S T R E S S O F 0.09678

CONTRIBUTION POINT =====	
0.01335	25!*****
0.00969	20!*****
0.00820	26!*****
0.00751	19!*****
0.00633	12!*****
0.00612	13!*****
0.00566	27!*****
0.00472	17!*****
0.00457	24!*****
0.00434	28!*****
0.00312	23!*****
0.00269	21!*****
0.00256	22!*****
0.00228	15!*****
0.00226	10!*****
0.00188	14!*****
0.00188	9!*****
0.00186	18!*****
0.00170	6!*****
0.00141	8!*****
0.00140	4!*****
0.00123	16!*****
0.00079	11!*****
0.00068	7!*****
0.00052	5!***
0.00003	2!
0.00000	3!
0.00000	1!

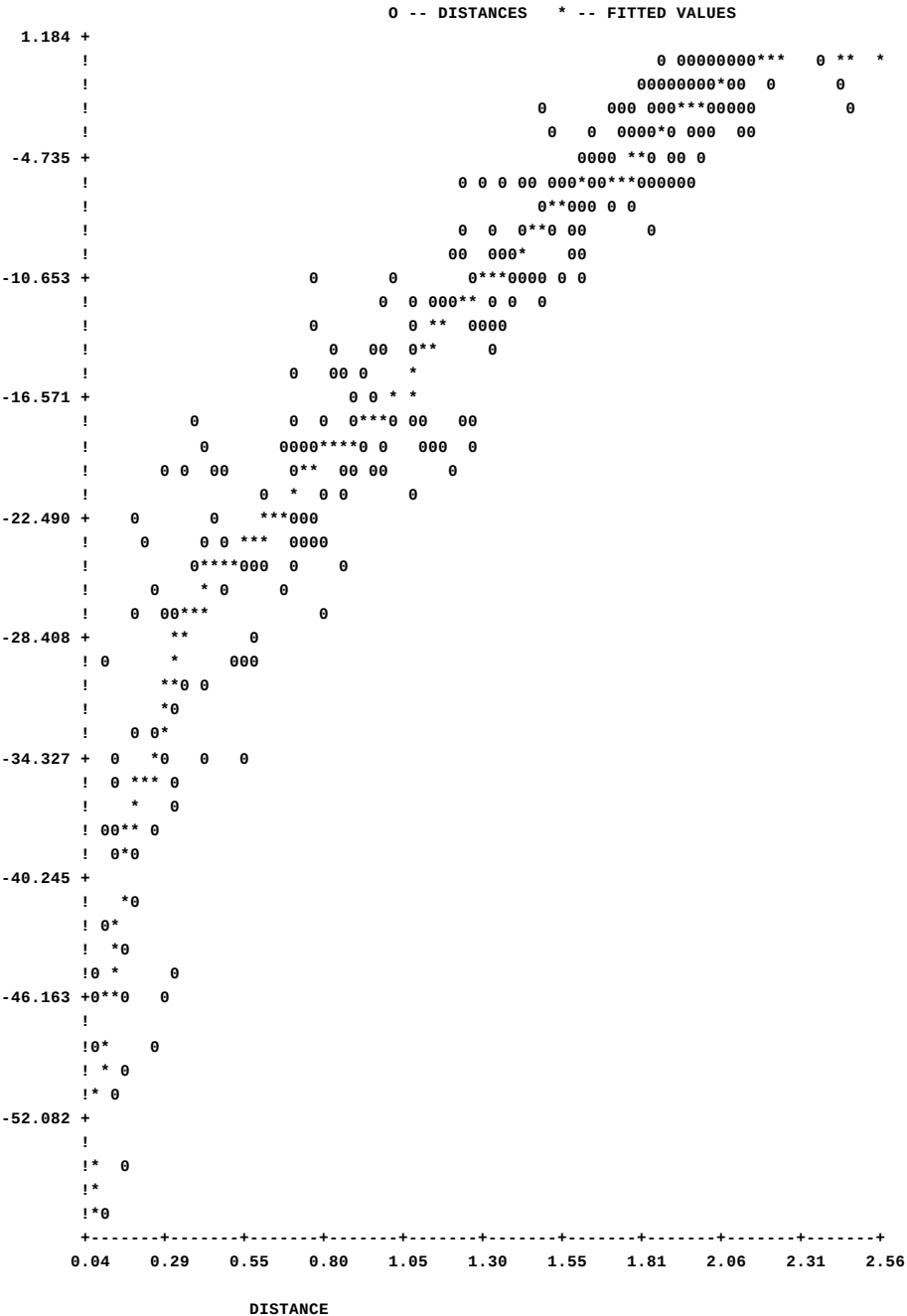
NOW FOLLOWS THE MAIN DIAGNOSTIC ... THE SHEPARD DIAGRAM IS A SCATTER PLOT OF THE DATA (LH AXIS; IMPLICITLY ORDINAL) BY THE SOLUTION DISTANCES (RATIO QUANTITIES), TOGETHER WITH THE ASSOCIATED DISPARITIES (DHATS) DENOTED BY A STAR "*". IF THE DISPARITIES ARE JOINED UP FROM THE ORIGIN, THEY FORM A (WEAK) MONOTONE FUNCTION - THIS IS THE MONOTONE REGRESSION "LINE")

SHEPARD DIAGRAM
=====

SORTPAC MINISSA

TASK NUMBER 1

SIMILARITY



AGAIN, BECAUSE REQUESTED, HERE IS THE PLOT OF THE (RAW) STRESS VALUE BY ITERATION. NOTE THE INITIAL DRAMATIC IMPROVEMENT

PLOT OF STRESS BY ITERATION			
ITERATION	STRESS	INITIAL STRESS	=
=====			
1 !			* 68.87124
2 !	*		12.71786
3 !	*		9.63212
4 !	*		9.38156
5 !	*		9.39052
6 !	*		9.37445
7 !	*		7.56325
8 !	*		7.45069
9 !	*		7.36542
10 !	*		7.34921

11 ! *

12 ! *

7.34435

7.34279

... AND THE PLOT OF THE FINAL CONFIGURATION/SOLUTION, ROTATED TO PCA.

FINAL CONFIGURATION

DIMENSION 2 PLOTTED AGAINST DIMENSION 1

DIMENSION

	-100	-90	-80	-70	-60	-50	-40	-30	-20	-10	*	10	20	30	40	50	60	70	80	90	100
1.25	+																				
1.20																					
1.15																					
1.10																					
1.05																					
1.00																					
0.95																					
0.90																					
0.85																					
0.80																					
0.75																					
0.70																					
0.65																					
0.60																					
0.55																					
0.50																					
0.45																					
0.40																					
0.35																					
0.30																					
0.25																					
0.20																					
0.15																					
0.10																					
0.05																					
DIMENSION 1	+																				
-0.05																					
-0.10																					
-0.15																					
-0.20																					
-0.25																					
-0.30																					
-0.35																					
-0.40																					
-0.45																					
-0.50																					
-0.55																					
-0.60																					
-0.65																					
-0.70																					
-0.75																					
-0.80																					
-0.85																					
-0.90																					
-0.95																					
-1.00																					
-1.05																					
-1.10																					
-1.15																					
-1.20																					
-1.25	+																				
	-1.25	-1.12	-1.00	-0.87	-0.75	-0.62	-0.50	-0.37	-0.25	-0.12	*	0.12	0.25	0.37	0.50	0.62	0.75	0.87	1.00	1.12	1.25

IF YOU HAVE REQUESTED ANY FURTHER DIMENSIONAL SOLUTIONS, THEY FOLLOW HERE. FINALLY

12. FINISH

NORMAL END OF RUN. 12 CONTROL CARDS, 0 ERRORS, 0 WARNINGS.