Lúcia Couto

MINISTERIO DAS OBRAS PÚBLICAS, TRANSPORTES E COMUNICAÇÕES

LABORATORIO NACIONAL DE ENGENHARIA CIVIL

NÃO CONFIDENCIAL

DEPARTAMENTO DE HIDRAULICA

NÚCLEO DE HIDROLOGIA E HIDRAULICA FLUVIAL

Proc. 62/13/8492
Obra 62/53/408

CONTRIBUTION TO THE COMPILATION OF ALLUVIAL CHANNEL DATA

Study supported by PIDDAC

March 1986

ABSTRACT

LNEC's contribution to the compilation of alluvial channel data is a series of data sets which were corrected and added to the "Extension of World Flume Data with bedform dimension and celerity data" prepared by DELFT HYDRAULICS LABORATORY 1982, inspired by "A Compendium of Solids Transport Data for Mobile Boundary Channels" of PETERSON and HOWELLS 1973.

The "Compilation of Alluvial Channel Data", undertaken by BROWNLIE 1981, was used to evaluate the reliability of most of the existing data and to correct entries which, by a systematic or an individual error, were mistaken. New records, selected by the scanning of reports and articles, including river and flume data were added, special attention being paid to the collection of data from Portuguese rivers. Also added were some of the records not included in the Delft Hydraulics Laboratory Compilation and presented by Brownlie. A general characterization of the final data sets was also made having in mind the judgement of their usefulness in particular studies.

RESUMO

A contribuição do LNEC para a compilação de dados de escoamentos fluviais consiste num conjunto de dados adicionados e corrigidos à "Extension of World Flume Data with bedform dimension and celerity data" preparada por DELFT HYDRAULICS LABORATORY 1982, inspirada em "A Compendium of Solids Transport Data for Mobile Boundary Channels" de PETERSON e HOWELLS 1973.

Recorreu-se à "Compilation of Alluvial Channel Data", elaborada por BROWNLIE 1981, para avaliar a qualidade da maioria dos dados existentes e para alterar valores incorrectos, devido a erros sistemáticos ou esporádicos. Adicionaram-se novos registos relativos a rios e canais laboratoriais, seleccionados por consulta bibliográfica, sendo dedicada especial atenção à inclusão de dados de rios portugueses. Também se incluiram alguns registos que, não constando da compilação elaborada pelo Laboratório de Delft, foram apresentados por Brownlie. Procedeu-se à caracterização geral da versão final dos dados com o objectivo de possibilitar a avaliação da sua utilidade para diferentes tipos de estudos.

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1 - INTRODUCTION

The Laboratório Nacional de Engenharia Civil (LNEC) started recently a research programme on resistance to flow in alluvial channels. The final results of this study will significantly depend on the existence of large amounts of reliable river and flume data. So, it was decided to extend and correct the existing data compilations, not as criticism but simply to contribute to a better understanding of flow phenomena in channels with sediment transport.

PETERSON and HOWELLS 1973 took the first step towards the development of a computerized data compilation which contained 6606 records, each consisting of observations of 10 basic hydraulic variables. BROWNLIE 1981 made a very serious effort to avoid deficiencies in the data compilation of Peterson and Howells and included approximately 2500 new records. His compilation of alluvial channel data is relatively free from errors as a careful item-by-item check was made. DELFT HYDRAULICS LABORATORY 1982 extended the compendium of PETERSON and HOWELLS 1973 mainly by the addition of data related to bedform dimensions and celerities, and granulometric data.

The objectives of the work undertaken at LNEC are:

1- to introduce corrections in the extended data compilation of the Delft Hydraulics Laboratory (DHL) according to the original sources (phase 1);

2- to extend the data compilation obtained in phase 1 with new data, from existing literature, specially data from Portuguese rivers (phase 2);

3- to perform as many tests as possible on all data sets to correct internal coherence errors (phase 3).

At the same time, some of the 2500 records added by BROWNLIE

1981 (data sets known as COSTELLO; FOLEY; KENNEDY; ONISHI; SONY; TAYLOR; SIMONS; KNOTT) was included with the "format" adopted by the Delft Hydraulics Laboratory.

In this document, a report is presented on the work developed in phases 1 and 2; the final report on phase 3 would be premature at this moment. No other reference is made to the data added by BROWNLIE 1981 because no significant contributions were introduced to these data at LNEC.

The results of this effort are not intended to be the answer to the aspiration of having a reasonable amount of accurate data, but rather as a contribution towards this objective.

The data collection is available in magnetic tape format from the Laboratório Nacional de Engenharia Civil.

2 - RECORDED VARIABLES

Both PETERSON and HOWELLS 1973, and BROWNLIE 1981 recorded the values of 10 variables for each observation in a river or flume cross-section. In the first reference, these variables were given in terms of British units; in the second, all measurements were converted into consistent SI units. The referred variables were:

1. Discharge, Q;
2. Width (top width of the channels), B;
3. Mean flow depth, h;
4. Energy slope, S;
5. Median particle size of bed material, D50;
6. Geometric standard deviation of bed-particle size, G;
7. Specific gravity of bed material, d;
8. Concentration of bed material load, C;
9. Temperature, T;
10. Bedform (BF), given by the code:
    - 0 - not observed;
    - 1 - plane bed (no motion);
    - 2 - ripples;
    - 3 - dunes;
    - 4 - transition;

5 - plane bed (sheet flow);
6 - standing waves;
7 - antidunes;
8 - chutes and pools.

The adaptations introduced by the Delft Hydraulics Laboratory to the data set of Peterson and Howells were the following:

- original data in British units were converted into SI units;

- in adition to D50 and the geometric standard deviation of bed-particle size (gradation coeficient) some other characteristic particle diameters were included: D16, D35, D65, D84, D90, DM (where Dn is the particle size for which n% in weight of the sediment mixture is finer, and DM is the mean diameter);

- fall velocity, mean length of bedforms, mean height of bedforms, mean celerity of bedforms and flume length were added when available;

- a few new data sets were included.

After the contribution of the Delft Hydraulics Laboratory, the items of each record (inserted in a typical F13.6 FORTRAN format) became:

Item	Remarks
ID	- Identification number, tabulated in each record;
Discharge	- Channel discharge (m^3/s);
Width	- Channel width at the tabulated discharge (m);
Depth	- Channel flow depth (m);
Slope	- Channel water surface slope (m/m);
D50	- D50 of bed material (mm);
Gradation	- Gradation coefficient of bed material;
Specific gravity	- Specific gravity of bed material;
Charge	- Total concentration of transported bed material by weight of water-sediment discharge (ppm);
Temperature	- Temperature of water (°C);
BF	- Bedform, given by the same code as the one adopted by BROWNLIE 1981;
D16	- D16 of bed material (mm);
D35	- D35 of bed material (mm);
DM	- DM of bed material (mm);
D65	- D65 of bed material (mm);
D84	- D84 of bed material (mm);
D90	- D90 of bed material (mm);
Fall velocity	- Fall velocity (m/s);
Bedform length	- Bedform length (m);
Bedform height	- Bedform height (m);

Vel. of bedform	- Velocity of bedform (m/hr);
Length of flume	- Length of flume (m);
Code	- Code = 0 : original report not yet scanned for extension of data set; Code = 1 : original report scanned for extension of data set;
Group Number	- F13.6 - Number to identify the source;

Data not given in source references is indicated in the tabulation by a negative quantity (usually -1.0) or a zero.

Appendix 1 lists the data sets of the DHL's compilation. All the work performed at LNEC was developed maintaining the indicated record format of DHL.

3 - CONTRIBUTION TO THE COMPILATION OF ALLUVIAL CHANNEL DATA

As already mentioned, two kinds of adaptations of the DHL's compilation were tried at LNEC : its correction and its extension with new data sets.

The correction was initially made checking again the data published in the existing literature and, in a second step, by the comparison of the obtained results with Brownlie's compilation which was confirmed to be relatively free from errors.

Table 1, where Brownlie's compilation and DHL's compilation are also characterized, gives a general picture of the work developed at LNEC. Four types of general atitudes were adopted:

- DHL's records were practically or completely maintained;
- Brownlie's records were practically or completely maintained;
- serious corrections were introduced;
- new data were added.

Appendix 2, whose first page is a table indicating the position of variables in each record, contains the data sets which were significantly changed; Apendix 3 contains the added

TABLE 1

DATA SET DESIGNATION	GROUP NUMBER	NUMBER OF RECORDS			IDENTIFICATION NUMBER (FROM - TO)		SUMMARY OF DEVELOPED WORK			
							MODIFIED VARIABLES	ADDED VARIABLES	ADDED DATA (NUMBER OF RECORDS)	
		OHL	LNEC	BROWNLIE	OHL	LNEC			FROM BROWNLIE	FROM OTHER SOURCES
C.S.U.	1	339	339	339	1 - 339	1 - 339	-	-	-	-
GILBERT	2	892	892	1076	340-1231	340-1231	This data set was not analysed			
MEYER-PETER	3	120	140	135	1232-1351	1232-1371	C,d	-	20	-
MC-DOUGALL	4	74	74	74	1352-1425	1372-1445	D50, G	-	-	-
CHYN	5	31	32	32	1426-1456	1446-1477	D50, G	BF	1	-
JORISSEN	6	27	27	26	1457-1483	1478-1504	D50, G	BF	-	-
USWES (SANDS)	7	437	437	432	1484-1920	1505-1941	D50, G	-	-	-
USWES (TURBIDITY TESTS)	8	217	217	23	1921-2137	1942-2158	-	-	-	-
USWES (SYNTHETIC SANDS)	9	312	313	313	2138-2449	2159-2471	D50, G	BF	1	-
LIU	10	310	310	293	2450-2759	2472-2781	D50, G,d	-	-	-
BOCAROI & YEN	11	48	48	48	2760-2807	2782-2829	D50, G,d,C	-	-	-
O'BRIEN	12	83	83	83	2808-2890	2830-2912	B,C, G	-	-	-
CASEY	13	92	92	92	2891-2982	2913-3004	D50, G	-	-	-
HO PANG-YUNG	14	80	80	80	2983-3062	3005-3084	D50, G,d	-	-	-
BOCAROI & YEN	15	104	104	-	3063-3166	3085-3188	-	-	-	-
WILLIS COLEMAN & ELLIS	16	106	106	96	3167-3272	3189-3294	-	-	-	-
NOMICOS	17	25	31	30	3273-3297	3295-3325	Significantly modified, according to section 3.2			
VANONI & BROOKS	18	16	16	16	3298-3313	3326-3341	Significantly modified, according to section 3.2			
BROOKS	19	23	21	21	3314-3336	3342-3362	Significantly modified, according to section 3.2			
STRAUB	20	18	24	24	3337-3354	3363-3386	D50	BF	6	-
STEIN	21	57	57	56	3355-3411	3387-3443	D50, G	BF	(4 characteristic diameter values corrected)	
KALINSKE & HSIA	22	9	9	9	3412-3420	3444-3452	T,D50,G,d	-	-	-
BARTON & LIN	23	31	31	28	3421-3451	3453-3483	BF	-	-	-
LAURSEN	24	24	24	24	3452-3475	3484-3507	-	T, BF	-	-
EINSTEIN	25	88	100	100	3476-3563	3508-3607	Q,B,H,C	-	12	-
U.B.C.	26	16	16	-	3564-3579	3608-3623	-	-	-	-
SINGH	27	305	305	305	3580-3884	3624-3928	G, d,	-	-	-
W. BENGAL	28	21	21	18	3885-3905	3929-3949	-	-	-	-
ZNAMENSKAYA	29	36	36	36	3906-3941	3950-3985	-	-	-	-
TOKIO,SATO & KIKKAWA	30	246	246	243	3942-4187	3986-4231	-	G	-	-
SOUTHAMPTON, A	31	83	83	79	4293-4375	4232-4314	-	-	-	-
SOUTHAMPTON, B	32	199	199	60	4376-4574	4315-4513	This data set was not analysed			
EAST PAKISTAN	33	68	68	68	4575-4642	4514-4581	T, D50, G	-	-	-
MUTTER	34	31	31	28	4643-4673	4582-4612	D50, G, BF	-	-	-
SHINOHARA & TSUBAKI	35	38	38	38	4674-4711	4613-4650	G, B	G	-	-
CORP. OF ENG.	36	305	305	305	4712-5016	4651-4955	D50	G	-	-
INDIA CANALS	37	33	33	33	5017-5049	4956-4988	C	G	-	-
LEOPOLD	38	72	72	72	5050-5121	4989-5060	-	-	-	-
NORDEGG & BRAGG CREEK	39	188	55	55	5341-5528	5061-5115	Completely modified according to Brownlie			
LIGHT WEIGHT	40	318	318	298	5529-5846	5116-5433	-	-	-	-
WILLIAMS, A	41	180	180	177	5847-6026	5434-5613	C,G	-	-	-
GIBBS	42	225	9	9	6027-6251	5614-5622	Completely modified according to Brownlie			
ABDEL-AAL	43	10	10	10	6252-6261	5623-5632	Q,S,H	-	-	-
VANONI & HWANG	44	22	23	16	6262-6283	5633-5655	Q,S,H	BF,BFL,BHH,L	(see section 3.2)	
KALKANIS	45	23	23	23	6284-6306	5656-5678	Q,S,H,C	-	-	-
PAINTAL	46	96	96	96	6307-6402	5679-5774	C	-	-	-
CHITALES	47	45	45	32	6403-6447	5775-5819	-	-	-	-
FRANCO	48	19	19	19	6448-6466	5820-5838	G	-	-	-
NEILL, C.R.	49	110	51	51	6467-6576	5839-5889	Completely modified according to Brownlie			
MIDDLE LOOP	50	47	38	38	6577-6623	5890-5927	Completely modified according to Brownlie			
ANSLEY	51	196	196	-	6624-6819	5928-6123	-	-	-	-
A.C.O.P.	52	146	151	151	6820-6965	6124-6274	-	-	5	-
DELFT HYDRAULICS LABORATORY	53	24	24	-	6966-6989	6275-6298	-	-	-	-
COSTELLO	54	-	28	28	-	6299-6326	-	-	28	-
FOLEY	55	-	12	12	-	6327-6338	-	-	12	-
KENNEDY	56	-	41	41	-	6339-6379	-	-	41	-
ONISHI	57	-	14	14	-	6380-6393	-	-	14	-
SONY	58	-	23	23	-	6394-6416	-	-	23	-
TAYLOR	59	-	39	39	-	6417-6455	-	-	39	-
SIMONS	60	-	11	11	-	6456-6466	-	-	11	-
KNOTT	61	-	4	4	-	6467-6470	-	-	4	-
ANNAMBHOTLA, SAYRE & LIVESEY	62	-	15	-	-	6471-6485	-	-	-	15
HILL, SRINIVASAN & UNNY	63	-	34	-	-	6486-6519	-	-	-	34
KENNEDY & BROOKS	64	-	9	-	-	6520-6528	-	-	-	9
NORDIN, A	65	-	42	-	-	6529-6570	-	-	-	42
NORDIN, B	66	-	11	-	-	6571-6581	-	-	-	11
WILLIAMS, B	67	-	37	-	-	6582-6618	-	-	-	37
MONDEGO	68	219	219	219	5122-5340	6619-6837	Q,S,DM	granul curve	-	219
TEJO, A	69	-	35	-	-	6838-6872	-	-	-	35
TEJO, B	70	-	233	-	-	6873-7106	-	-	-	233

data sets.

Next, a detailed description of the work done is presented.

3.1 - Unchanged and deleted data sets

Some data sets remained completely unchanged: C.S.U.; GILBERT; USWES (TURBIDITY TESTS); BOGARDI & YEN; WILLIS, COLEMAN & ELLIS; U.B.C.; W. BENGAL; ZNAMENSKAYA; SOUTHAMPTON, B; LEOPOLD; LIGHT WEIGHT; CHITALES; ANSLEY; and DELFT HYDRAULICS LABORATORY.

OXFORD data set was deleted because it corresponds to WILLIS, COLEMAN & ELLIS set, which seems to be more complete.

3.2 - Improved data

BROWNLIE 1981 mentions the following corrections that he introduced to the Peterson and Howells' compilation:

- grain size in the data of TOKYO, SATO & KIKKAWA;
- 3 concentration values in the data of STRAUB;
- discharge (which was erroneously substituted by the flow velocity) in the data sets of ABDEL-AAL, and VANONI & HWANG;
- slope and depth (which were interchanged) in the previous two data sets;
- sediment concentration in the data of WILLIAMS due to the consideration of the dry unit weight per time instead of submerged weight;
- sediment concentration in the data for the INDIA CANALS (CHAUDRY, SMITH and VIGIL 1970) as a consequence of units misunderstanding.

All these errors were eliminated from the data compilation of the Delft Hydraulics Laboratory.

Other errors, detected in disharge, width, depth, charge, temperature and DM were corrected whenever differences from that

data compilation were greater than approximately 10%.

In the compilation by DHL all the characteristic diameters, including D50, were obtained by geometric interpolation in the cumulative granulometric curve, and the gradation coefficient was calculated, instead of considering the D50 and the gradation coefficient given in each source report. This procedure seems to be questionable; so, in the present work it was decided to keep the original values of D50, gradation coefficient and specific gravity whenever available.

A large number of improvements was performed in the data sets known as NOMICOS, VANONI & BROOKS, BROOKS, and VANONI & HWANG. These improvements were the following (Appendix 2):

a) NOMICOS: all runs with stabilized bed (VANONI and NOMICOS 1960) were eliminated; data from table 7 of BROOKS 1958 were added to this data set.

b) VANONI & BROOKS: bed condition contained in BROOKS 1958 and bedform dimensions contained in VANONI and HWANG 1967 made possible the inclusion of bedform code in this data set.

c) BROOKS: these data were modified according to BROOKS 1958; bedform codes were added and runs with "meander" bedform condition were eliminated.

d) VANONI & HWANG: very significant corrections were made in discharge, width, depth, slope, bedform characteristics and channel length.

3.3 - New data sets

Eight new data sets (ANNAMBHOTLA, SAYRE & LIVESEY; HILL, SRINIVASAN & UNNY; KENNEDY & BROOKS; NORDIN A; NORDIN B; WILLIAMS B; TEJO A; TEJO B) with a total of 415 records were added to the compilation by DHL. PORTUGAL data set (containing 219 records) was renamed MONDEGO, to distinguish from two Portuguese data sets which were added; it is described in Appendix 4 and printed in Appendix 3 as new data because special attention is paid to

Portuguese rivers.

A summary description of measuring equipment and procedures adopted by the authors of the sources scanned for new data is given in Appendix 4, under the proposed designations. The objective of this description is a quick elucidation of potential users. Anyway, reading of the original reports and articles may be still necessary.

4 - CHARACTERIZATION OF THE EXISTING DATA

Each study has its own needs in what concerns the variables involved. For example, a data set which does not include the types of bedforms installed in the bed cannot be used to evaluate the reliability of a given bedform prediction criterion. Nevertheless, it can probably be used to make a corresponding study on resistance to flow. A data set which does not include the bedform dimensions is of no use to the establishment of useful relations between their dimensionless versions and other dimensionless flow properties.

So, it seems to be important to know which are the variables actually recorded in each data set. All data sets include the values of discharge, width, and depth. Table 2 registers the number of significant values (non-negative and/or non-zero) of the remaining important variables of each data set. It also distinguishes river and flume data.

It should be emphasized that only about 20 % of the compiled data was measured in rivers or on comparatively large canals; most of the corresponding data give no information on bedform types and dimensions. Laboratory data is also somewhat scarse on

TABLE 2

DATA SET DESIGNATION	GROUP NUMBER	NUMBER OF RECORDS	DATA COMPLETNESS										TYPE OF CHANNEL
			S	G	d	C	T	BF	GRANULOM. CURVE	w	BEDFORM DIMENSIONS	c	
C.S.U.	1	339	339	339	339	309	339	339	339	339	232	145	F
GILBERT	2	892	892	0	892	891	0	703	892	6	0	0	F
MEYER-PETER	3	140	140	140	140	138	0	0	140	0	0	0	F
MC-DOUGALL	4	74	74	74	74	74	0	0	74	74	0	0	F
CHYN	5	32	32	32	32	32	32	32	32	32	0	0	F
JORISSEN	6	27	27	27	27	27	27	26	27	27	0	0	F
USWES (SANDS)	7	437	437	437	437	437	437	330	437	437	0	0	F
USWES (TURBIDITY TESTS)	8	217	217	217	217	217	216	0	217	217	0	0	F
USWES (SYNTHETIC SANDS)	9	313	313	313	313	313	313	313	313	313	0	0	F
LIU	10	310	310	310	310	310	310	0	310	310	0	0	F
BÓCARDI & YEN	11	48	48	48	48	48	48	0	48	0	0	0	F
O'BRIEN	12	83	83	83	83	83	20	0	83	83	0	0	F
CASEY	13	92	92	92	92	91	0	0	92	92	0	0	F
HO PANG-YUNG	14	80	80	80	80	80	80	0	80	80	0	0	F
BOGARDI & YEN	15	104	104	104	104	0	104	104	104	104	0	0	F
WILLIS COLEMAN & ELLIS	16	106	97	106	106	106	106	106	106	0	0	0	F
NOMICOS	17	31	31	31	31	30	31	31	31	31	0	0	F
VANONI & BROOKS	18	16	16	16	16	15	16	16	16	16	9	0	F
BROOKS	19	21	21	21	21	21	21	21	21	21	0	0	F
STRAUB	20	24	24	24	24	24	6	24	24	18	0	0	F
STEIN	21	57	57	57	57	57	57	56	57	57	0	0	F
KALINSKE & HSIA	22	9	9	9	9	9	9	9	9	9	0	0	F
BARTON & LIN	23	31	31	31	31	31	31	31	31	31	19	0	F
LAURSEN	24	24	24	24	24	24	24	24	24	24	11	0	F
EINSTEIN	25	100	100	100	100	100	81	0	100	89	0	0	R
U.B.C.	26	16	0	7	16	8	7	0	16	0	0	0	F
SINGH	27	305	305	305	305	286	305	240	305	0	0	0	F
W. BENGAL	28	21	21	21	21	18	21	0	21	0	0	0	F
ZNAMENSKAYA	29	36	36	36	36	36	0	35	36	36	34	28	F
TOKIO, SATO & KIKKAWA	30	246	246	246	246	240	246	0	246	0	0	0	F
SOUTHAMPTON, A	31	83	83	83	83	83	83	42	83	0	0	0	F
SOUTHAMPTON, B	32	199	199	199	199	183	199	199	199	0	0	0	F
EAST PAKISTAN	33	68	68	68	68	44	68	0	68	0	0	0	F
MUTTER	34	31	31	31	31	28	31	31	31	0	26	0	F
SHINOHARA & TSUBAKI	35	38	38	38	38	38	38	38	38	0	38	38	R
CORP. OF ENG.	36	305	305	301	301	301	301	0	301	0	0	0	R
INDIA CANALS	37	33	33	33	33	33	33	0	33	0	0	0	R
LEOPOLD	38	72	55	0	72	72	71	0	72	0	0	0	R
NORDECG & BRAGG CREEK	39	55	55	55	55	55	55	0	55	0	0	0	R
LIGHT WEIGHT	40	318	316	298	318	318	318	0	318	0	0	0	F
WILLIAMS, A	41	180	180	180	180	179	180	180	180	180	143	148	F
GIBBS	42	9	9	9	9	9	9	9	9	0	0	0	F
ABDEL-AAL	43	10	10	10	10	10	10	0	10	10	0	0	F
VANONI & HWANG	44	23	23	23	23	16	23	23	23	0	21	0	F
KALKANIS	45	23	23	23	23	20	23	0	23	0	0	0	F
PAINTAL	46	96	96	96	96	95	0	0	96	0	0	0	F
CHITALES	47	45	45	13	45	45	13	0	45	0	0	0	R
FRANCO	48	19	19	19	19	19	19	19	19	0	0	0	F
NEILL, C.R.	49	51	51	51	51	0	51	51	51	0	0	0	F
MIDDLE LOOP	50	38	38	38	38	38	35	0	38	0	0	0	R
ANSLEY	51	196	196	26	196	196	196	0	196	0	0	0	F
A.C.O.P.	52	151	151	151	151	142	149	31	151	0	29	0	R
DELFT HYDRAULICS LABORATORY	53	24	24	24	24	24	24	24	24	24	0	0	F
COSTELLO	54	28	28	28	28	28	28	28	28	0	0	0	F
FOLEY	55	12	12	12	12	12	12	7	12	0	0	0	F
KENNEDY	56	41	41	41	41	41	41	0	41	0	0	0	F
ONISHI	57	14	14	14	14	14	14	14	14	0	0	0	F
SONY	58	23	23	23	23	23	23	0	23	0	0	0	F
TAYLOR	59	39	39	39	39	39	39	39	39	0	0	0	F
SIMONS	60	11	11	11	11	11	11	11	11	0	0	0	R
KNOTT	61	4	4	4	4	4	4	0	4	0	0	0	R
ANNAMBHOTLA, SAYRE & LIVESEY	62	15	15	0	15	0	14	13	15	0	13	0	R
HILL, SRINIVASAN & UNNY	63	34	34	34	34	0	34	34	34	0	0	0	F
KENNEDY & BROOKS	64	9	9	9	9	9	9	9	9	0	5	0	F
NORDIN, A	65	42	42	36	42	0	42	42	42	0	4	0	R
NORDIN, B	66	11	11	0	11	0	11	11	11	0	11	0	F
WILLIAMS, B	67	37	37	37	37	37	37	37	37	37	28	31	F
MONDEGO	68	219	219	219	219	219	0	0	219	0	0	0	R
TEJO, A	69	35	35	35	35	35	0	0	35	0	0	0	R
TEJO, B	70	233	233	233	233	233	0	0	233	0	0	0	R

S - slope
G - gradation coefficient
d - specific gravity
C - charge
T - temperature

BF - bedform code
w - fall velocity
c - velocity of bedform
F - flume
R - river

such dimensions. This lack of data seems to indicate the need for a persistent search for accurate and complete measurements in rivers and laboratory flumes, after inspecting the existing data in order to avoid overlapping.

Lisbon, Laboratório Nacional de Engenharia Civil, March 1986

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APPENDIX 1

LIST OF DATA SETS OF THE COMPILATION BY DHL

Source description	Group Number	Number of records	ID Number From	to
C.S.U.	1	339	1	339
GILBERT	2	892	340	1231
MEYER-PETER	3	120	1232	1351
MC-DOUGALL	4	74	1352	1425
CHYN	5	31	1426	1456
JORISSEN	6	27	1457	1483
USWES (SANDS)	7	437	1484	1920
USWES (TURBIDITY TESTS)	8	217	1921	2137
USWES (SYNTHETIC SANDS)	9	312	2138	2449
LIU	10	310	2450	2759
BOGARDY & YEN	11	48	2760	2807
O'BRIEN	12	83	2808	2890
CASEY	13	92	2891	2982
HO PANG-YUNG	14	80	2983	3062
BOGARDI & YEN	15	104	3063	3166
WILLIS, COLEMAN & ELLIS	16	106	3167	3272
NOMICOS	17	25	3273	3297
VANONI & BROOKS	18	16	3298	3313
BROOKS	19	23	3314	3336
STRAUB	20	18	3337	3354
STEIN	21	57	3355	3411
KALINSKE & HSIA	22	9	3412	3420
BARTON & LIN	23	31	3421	3451
LAURSEN	24	24	3452	3475
EINSTEIN	25	88	3476	3563
U. B. C.	26	16	3564	3579
SINGH	27	305	3580	3884
W. BENGAL	28	21	3885	3905
ZNAMENSKAYA	29	36	3906	3941
TOKYO, SATO & KIKKAWA	30	246	3942	4187
OXFORD	31	105	4188	4292
SOUTHAMPTON, A	32	83	4293	4375
SOUTHAMPTON, B	33	199	4376	4574
EAST PAKISTAN	34	68	4575	4642
MUTTER	35	31	4643	4673
SHINOHARA & TSUBAKI	36	38	4674	4711
CORP. OF ENG.	37	305	4712	5016
INDIA CANALS	38	33	5017	5049
LEOPOLD	39	72	5050	5121
PORTUGAL	40	219	5122	5340
NORDEGG & BRAGG CREEK	41	188	5341	5528
LIGHT WEIGHT	42	318	5529	5846
WILLIAMS	43	180	5847	6026
GIBBS	44	225	6027	6251
ABDEL-AAL	45	10	6252	6261
VANONI & HWANG	46	22	6262	6283
KALKANIS	47	23	6284	6306
PAINTAL	48	96	6307	6402
CHITALES	49	45	6403	6447
FRANCO	50	19	6448	6466
NEILL, C. R.	51	110	6467	6576
MIDDLE LOOP	52	47	6577	6623
ANSLEY	53	196	6624	6819
A. C. O. P.	54	146	6820	6965
DELFT HYDRAULICS LABORATORY	55	24	6966	6989

APPENDIX 2

SIGNIFICANTLY IMPROVED DATA SETS

POSITION OF VARIABLES IN EACH RECORD

Identification number	Discharge (m^3/s)	Width (m)	Depth (m)	Slope	D_{50} (mm)
Gradation coefficient	Specific gravity	Charge (ppm)	Temperature (°C)	Bedform code	D_{16} (mm)
D_{35} (mm)	D_M (mm)	D_{65} (mm)	D_{84} (mm)	D_{90} (mm)	Fall velocity (m/s)
Bedform length (m)	Bedform height (m)	Velocity of bedform (m/hr)	Length of flume (m)	Code	Group number

Data of NOMICOS

3295.000000	.008665	.266700	.086563	.002500	.091000
1.160000	2.650000	3640.000000	25.000000	2.000000	.079000
.088000	.091000	.096000	.104000	.106857	.009449
-1.000000	-1.000000	-1.000000	12.192000	1.000000	17.000000
3296.000000	.008665	.266700	.086563	.002450	.091000
1.160000	2.650000	3380.000000	25.000000	2.000000	.079000
.088000	.091000	.096000	.104000	.106857	.009449
-1.000000	-1.000000	-1.000000	12.192000	1.000000	17.000000
3297.000000	.012261	.266700	.074371	.002000	.091000
1.160000	2.650000	4600.000000	25.000000	2.000000	.079000
.088000	.091000	.096000	.104000	.106857	.009449
-1.000000	-1.000000	-1.000000	12.192000	1.000000	17.000000
3298.000000	.014413	.266700	.078334	.002060	.091000
1.160000	2.650000	6920.000000	25.000000	5.000000	.079000
.088000	.091000	.096000	.104000	.106857	.009449
-1.000000	-1.000000	-1.000000	12.192000	1.000000	17.000000
3299.000000	.014413	.266700	.078334	.002060	.091000
1.160000	2.650000	8080.000000	25.000000	5.000000	.079000
.088000	.091000	.096000	.104000	.106857	.009449
-1.000000	-1.000000	-1.000000	12.192000	1.000000	17.000000
3300.000000	.014413	.266700	.077724	.002580	.148000
1.160000	2.650000	3610.000000	25.000000	5.000000	.127286
.137143	.148000	.155000	.169000	.178300	.018898
-1.000000	-1.000000	-1.000000	12.192000	1.000000	17.000000
3301.000000	.012318	.268220	.073460	.002100	.145000
1.300000	2.650000	1850.000000	25.000000	5.000000	.130000
.140000	.160000	.160000	.200000	.220000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3302.000000	.007617	.268220	.073760	.002700	.145000
1.300000	2.650000	1200.000000	25.000000	2.000000	.130000
.140000	.160000	.160000	.200000	.220000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3303.000000	.005465	.268220	.073460	.002100	.145000
1.300000	2.650000	230.000000	25.000000	2.000000	.130000
.140000	.160000	.160000	.200000	.220000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3304.000000	.012346	.268220	.071020	.002500	.137000
1.380000	2.650000	2300.000000	24.300000	5.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3305.000000	.010959	.268220	.067970	.002250	.137000
1.380000	2.650000	3300.000000	24.000000	5.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3306.000000	.008297	.268220	.072240	.002750	.137000
1.380000	2.650000	2000.000000	24.100000	6.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000

3307.000000	.008297	.268220	.074070	.002750	.137000
1.380000	2.650000	-1.000000	24.600000	2.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3308.000000	.004814	.268220	.073460	.002000	.152000
1.760000	2.650000	300.000000	26.000000	2.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3309.000000	.005097	.268220	.073460	.002100	.152000
1.760000	2.650000	590.000000	25.600000	2.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3310.000000	.005465	.268220	.073460	.002400	.152000
1.760000	2.650000	820.000000	25.500000	2.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3311.000000	.005862	.268220	.073460	.002600	.152000
1.760000	2.650000	1150.000000	25.000000	2.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3312.000000	.006201	.268220	.073460	.002750	.152000
1.760000	2.650000	1800.000000	25.000000	2.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3313.000000	.007164	.268220	.073460	.002700	.152000
1.760000	2.650000	2500.000000	25.000000	2.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3314.000000	.008269	.268220	.073460	.002400	.152000
1.760000	2.650000	3400.000000	25.000000	2.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3315.000000	.009260	.268220	.073460	.002250	.152000
1.760000	2.650000	2900.000000	25.000000	6.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3316.000000	.010137	.268220	.073460	.002100	.152000
1.760000	2.650000	3300.000000	25.000000	6.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3317.000000	.010959	.268220	.073460	.002000	.152000
1.760000	2.650000	3200.000000	25.000000	5.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3318.000000	.012318	.268220	.073460	.002250	.152000
1.760000	2.650000	3400.000000	25.000000	5.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000

3319.000000	.015886	.268220	.073460	.003900	.152000
1.760000	2.650000	5600.000000	25.000000	5.000000	.080000
.120000	.180000	.190000	.280000	.320000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3320.000000	.012317	.267000	.073200	.002400	.145000
1.300000	2.650000	3240.000000	15.300000	5.000000	.130000
.140000	.160000	.160000	.200000	.220000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3321.000000	.012317	.267000	.073500	.002300	.145000
1.300000	2.650000	2140.000000	25.000000	5.000000	.130000
.140000	.160000	.160000	.200000	.220000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3322.000000	.012317	.267000	.073800	.002200	.145000
1.300000	2.650000	1660.000000	38.000000	5.000000	.130000
.140000	.160000	.160000	.200000	.220000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3323.000000	.005465	.267000	.073800	.002350	.145000
1.300000	2.650000	310.000000	15.000000	2.000000	.130000
.140000	.160000	.160000	.200000	.220000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3324.000000	.005465	.267000	.073500	.002100	.145000
1.300000	2.650000	220.000000	25.000000	2.000000	.130000
.140000	.160000	.160000	.200000	.220000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000
3325.000000	.005465	.267000	.073200	.001900	.145000
1.300000	2.650000	110.000000	35.600000	2.000000	.130000
.140000	.160000	.160000	.200000	.220000	.015000
-1.000000	-1.000000	-1.000000	12.200000	1.000000	17.000000

Data of VANONI & BROOKS

3326.000000	.014442	.850900	.072542	.001410	.140000
1.380000	2.650000	37.000000	23.400000	2.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
.106680	.012802	-1.000000	18.300000	1.000000	18.000000
3327.000000	.017415	.850900	.074066	.002040	.140000
1.380000	2.650000	240.000000	24.500000	2.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
.115824	.016764	-1.000000	18.300000	1.000000	18.000000
3328.000000	.020247	.850900	.073152	.002800	.140000
1.380000	2.650000	1150.000000	25.200000	2.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
.118872	.050597	-1.000000	18.300000	1.000000	18.000000
3329.000000	.024211	.850900	.073152	.002780	.140000
1.380000	2.650000	1900.000000	25.500000	2.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
.128016	-1.000000	-1.000000	18.300000	1.000000	18.000000
3330.000000	.026335	.850900	.072238	.002770	.140000
1.380000	2.650000	2200.000000	22.400000	2.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
.137160	.013411	-1.000000	18.300000	1.000000	18.000000
3331.000000	.028317	.850900	.075900	.002460	.140000
1.380000	2.650000	1400.000000	27.400000	3.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	18.300000	1.000000	18.000000
3332.000000	.033131	.850900	.092050	.002010	.140000
1.380000	2.650000	2200.000000	18.900000	3.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	18.300000	1.000000	18.000000
3333.000000	.033131	.850900	.061870	.002760	.140000
1.380000	2.650000	3000.000000	18.900000	5.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	18.300000	1.000000	18.000000
3334.000000	.039077	.850900	.071020	.002050	.140000
1.380000	2.650000	2500.000000	23.500000	5.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	18.300000	1.000000	18.000000
3335.000000	.034263	.850900	.164897	.000390	.140000
1.380000	2.650000	3.000000	24.600000	2.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
.121920	.015240	-1.000000	18.300000	1.000000	18.000000
3336.000000	.043608	.850900	.116738	.000700	.140000
1.380000	2.650000	68.000000	23.400000	2.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
.103632	.016764	-1.000000	18.300000	1.000000	18.000000
3337.000000	.052953	.850900	.167335	.001050	.140000
1.380000	2.650000	210.000000	21.900000	2.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
.128016	.018593	-1.000000	18.300000	1.000000	18.000000

3338.000000	.063147	.850900	.163373	.001220	.140000
1.380000	2.650000	670.000000	25.200000	2.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
.131064	.014021	-1.000000	18.300000	1.000000	18.000000
3339.000000	.075040	.850900	.168550	.001020	.140000
1.380000	2.650000	1450.000000	20.700000	3.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	18.300000	1.000000	18.000000
3340.000000	.099109	.850900	.159720	.001070	.140000
1.380000	2.650000	-1.000000	16.500000	5.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	18.300000	1.000000	18.000000
3341.000000	.108737	.850390	.165810	.001070	.140000
1.380000	2.650000	1150.000000	24.900000	5.000000	.100000
.120000	.150000	.160000	.190000	.200000	.014000
-1.000000	-1.000000	-1.000000	18.300000	1.000000	18.000000

Data of BROOKS

3342.000000	.012318	.266700	.074066	.002500	.144910
1.110000	2.650000	1950.000000	22.000000	5.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3343.000000	.012176	.266700	.071933	.002400	.144910
1.110000	2.650000	2450.000000	12.500000	5.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3344.000000	.007928	.266700	.054900	.003100	.145000
1.110000	2.650000	1900.000000	26.000000	4.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3345.000000	.009769	.266700	.059436	.002400	.144910
1.110000	2.650000	2450.000000	21.000000	5.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3346.000000	.012318	.266700	.074066	.002100	.144910
1.110000	2.650000	2150.000000	31.500000	5.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3347.000000	.010618	.267000	.073200	.002300	.145000
1.110000	2.650000	1500.000000	27.500000	4.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3348.000000	.008070	.266700	.074676	.002600	.144910
1.110000	2.650000	1100.000000	27.500000	3.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3349.000000	.005663	.266700	.076200	.002000	.144910
1.110000	2.650000	200.000000	24.000000	3.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3350.000000	.005805	.267000	.047200	.003300	.145000
1.110000	2.650000	2700.000000	26.000000	4.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3351.000000	.010477	.266700	.091440	.002200	.144910
1.110000	2.650000	720.000000	26.000000	3.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3352.000000	.006088	.266700	.060046	.003500	.144910
1.110000	2.650000	1200.000000	26.500000	3.000000	.130270
.138640	.160000	.152090	.162270	.167360	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3353.000000	.012318	.266700	.071933	.002250	.088000
1.170000	2.650000	4850.000000	25.000000	5.000000	.074000
.082910	.100000	.093820	.104000	.107640	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000

3354.000000	.012318	.266700	.071933	.002200	.088000
1.170000	2.650000	4900.000000	25.000000	5.000000	.074000
.082910	.100000	.093820	.104000	.107640	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3355.000000	.009203	.266700	.057607	.002450	.088000
1.170000	2.650000	5100.000000	25.000000	5.000000	.074000
.082910	.100000	.093820	.104000	.107640	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3356.000000	.007504	.267000	.068900	.002800	.088000
1.170000	2.650000	4000.000000	25.000000	2.000000	.074000
.082910	.100000	.093820	.104000	.107640	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3357.000000	.005663	.266700	.056998	.003300	.088000
1.170000	2.650000	5300.000000	25.000000	3.000000	.074000
.082910	.100000	.093820	.104000	.107640	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3358.000000	.005663	.266700	.085039	.001300	.088000
1.170000	2.650000	190.000000	25.000000	3.000000	.074000
.082910	.100000	.093820	.104000	.107640	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3359.000000	.005663	.266700	.070409	.002350	.088000
1.170000	2.650000	1350.000000	25.000000	3.000000	.074000
.082910	.100000	.093820	.104000	.107640	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3360.000000	.009345	.266700	.086563	.002400	.088000
1.170000	2.650000	3600.000000	25.000000	3.000000	.074000
.082910	.100000	.093820	.104000	.107640	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3361.000000	.001473	.266700	.085344	.001850	.088000
1.170000	2.650000	3450.000000	25.200000	5.000000	.074000
.082910	.100000	.093820	.104000	.107640	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000
3362.000000	.007504	.266700	.085649	.002150	.088000
1.170000	2.650000	1750.000000	25.000000	3.000000	.074000
.082910	.100000	.093820	.104000	.107640	.018288
-1.000000	-1.000000	-1.000000	12.192000	1.000000	19.000000

Data of VANONI & HWANG

5633.000000	.005522	.266700	.075590	.002300	.230000
1.430000	2.650000	120.000000	22.000000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.173736	.016459	-1.000000	12.192000	1.000000	44.000000
5634.000000	.004842	.266700	.073762	.002000	.230000
1.430000	2.650000	62.000000	21.200000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.152400	.015545	-1.000000	12.192000	1.000000	44.000000
5635.000000	.003681	.266700	.073457	.001200	.230000
1.430000	2.650000	1.000000	22.000000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.137160	.014935	-1.000000	12.192000	1.000000	44.000000
5636.000000	.007362	.266700	.073457	.002800	.230000
1.430000	2.650000	488.000000	22.600000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.182880	.015240	-1.000000	12.192000	1.000000	44.000000
5637.000000	.005720	.266700	.073762	.000700	.230000
1.430000	2.650000	265.000000	25.500000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.161544	.015850	-1.000000	12.192000	1.000000	44.000000
5638.000000	.006541	.266700	.073152	.002900	.230000
1.430000	2.650000	417.000000	21.700000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.161544	.014935	-1.000000	12.192000	1.000000	44.000000
5639.000000	.008099	.266700	.071323	.002700	.230000
1.430000	2.650000	619.000000	21.900000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.164592	.011278	-1.000000	12.192000	1.000000	44.000000
5640.000000	.003596	.266700	.073762	.001200	.230000
1.430000	2.650000	-1.000000	20.500000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.161544	.015850	-1.000000	12.192000	1.000000	44.000000
5641.000000	.003341	.266700	.072238	.000900	.230000
1.430000	2.650000	-1.000000	22.000000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.140208	.015240	-1.000000	12.192000	1.000000	44.000000
5642.000000	.005578	.266700	.074066	.002400	.230000
1.430000	2.650000	-1.000000	20.800000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.115824	.016154	-1.000000	12.192000	1.000000	44.000000
5643.000000	.006853	.266700	.071628	.002890	.230000
1.430000	2.650000	-1.000000	20.800000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.143256	.015240	-1.000000	12.192000	1.000000	44.000000
5644.000000	.007079	.266700	.072542	.002800	.230000
1.430000	2.650000	-1.000000	20.600000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.158496	.015240	-1.000000	12.192000	1.000000	44.000000

5645.000000	.007929	.266700	.070714	.002390	.230000
1.430000	2.650000	-1.000000	21.600000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.173736	.011582	-1.000000	12.192000	1.000000	44.000000
5646.000000	.004304	.266700	.070409	.001590	.230000
1.430000	2.650000	7.000000	21.000000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.155448	.015850	-1.000000	12.192000	1.000000	44.000000
5647.000000	.007447	.266700	.073457	.002860	.230000
1.430000	2.650000	448.000000	20.900000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.161544	.014021	-1.000000	12.192000	1.000000	44.000000
5648.000000	.063996	1.100000	.182270	.000642	.206600
1.460000	2.670000	31.000000	19.800000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.158496	.013106	-1.000000	39.624000	1.000000	44.000000
5649.000000	.087500	1.100000	.179527	.001055	.206000
1.460000	2.670000	180.000000	20.100000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.195072	.015850	-1.000000	39.624000	1.000000	44.000000
5650.000000	.108170	1.100000	.176174	.001303	.206000
1.460000	2.670000	1490.000000	20.700000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
-1.000000	-1.000000	-1.000000	39.624000	1.000000	44.000000
5651.000000	.091180	1.100000	.179527	.001116	.206000
1.460000	2.670000	380.000000	21.000000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.228600	.016459	-1.000000	39.624000	1.000000	44.000000
5652.000000	.095428	1.100000	.183794	.001100	.206000
1.460000	2.670000	410.000000	19.200000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.198120	.015545	-1.000000	39.624000	1.000000	44.000000
5653.000000	.121762	1.100000	.237744	.000809	.206000
1.460000	2.670000	261.000000	18.800000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.170688	.015545	-1.000000	39.624000	1.000000	44.000000
5654.000000	.185475	1.100000	.370637	.000455	.206000
1.460000	2.670000	61.000000	20.000000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.192024	.017374	-1.000000	39.624000	1.000000	44.000000
5655.000000	.065129	1.100000	.180137	.000709	.206000
1.460000	2.670000	-1.000000	19.200000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
-1.000000	.016154	-1.000000	39.624000	1.000000	44.000000

APPENDIX 3

ADDED DATA SETS

Data of ANNAMBHOTLA, SAYRE & LIVESEY

6471.000000	844.000000	183.000000	3.391193	.000133	.200000
-1.000000	2.650000	-1.000000	6.111111	3.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
2.290000	.038500	-1.000000	915.000000	1.000000	62.000000
6472.000000	925.000000	183.000000	3.240157	.000174	.200000
-1.000000	2.650000	-1.000000	7.777778	5.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
3.175000	.040000	-1.000000	915.000000	1.000000	62.000000
6473.000000	896.000000	183.000000	3.766288	.000173	.200000
-1.000000	2.650000	-1.000000	13.333333	3.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
5.130000	.129000	-1.000000	915.000000	1.000000	62.000000
6474.000000	907.000000	183.000000	4.096103	.000151	.200000
-1.000000	2.650000	-1.000000	15.000000	3.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
6.750000	.126000	-1.000000	915.000000	1.000000	62.000000
6475.000000	921.000000	183.000000	4.534042	.000142	.200000
-1.000000	2.650000	-1.000000	20.000000	3.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
6.305000	.133000	-1.000000	915.000000	1.000000	62.000000
6476.000000	960.000000	183.000000	4.601668	.000135	.200000
-1.000000	2.650000	-1.000000	23.888889	3.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
6.000000	.141000	-1.000000	915.000000	1.000000	62.000000
6477.000000	983.000000	183.000000	4.008645	.000130	.200000
-1.000000	2.650000	-1.000000	26.111111	3.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
6.490000	.097000	-1.000000	915.000000	1.000000	62.000000
6478.000000	980.000000	183.000000	3.771261	.000136	.200000
-1.000000	2.650000	-1.000000	26.666667	4.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
5.500000	.063500	-1.000000	915.000000	1.000000	62.000000
6479.000000	969.000000	183.000000	3.728931	.000127	.200000
-1.000000	2.650000	-1.000000	22.222222	4.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
5.220000	.026500	-1.000000	915.000000	1.000000	62.000000
6480.000000	932.000000	183.000000	3.690505	.000127	.200000
-1.000000	2.650000	-1.000000	18.888889	4.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
3.825000	.025000	-1.000000	915.000000	1.000000	62.000000
6481.000000	938.000000	183.000000	3.264766	.000132	.200000
-1.000000	2.650000	-1.000000	16.666667	5.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
1.540000	.022000	-1.000000	915.000000	1.000000	62.000000
6482.000000	882.000000	183.000000	3.170837	.000117	.200000
-1.000000	2.650000	-1.000000	11.111111	5.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
3.250000	.014000	-1.000000	915.000000	1.000000	62.000000

6483.000000	910.000000	183.000000	3.167311	.000114	.200000
-1.000000	2.650000	-1.000000	3.888889	5.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
1.265000	.013500	-1.000000	915.000000	1.000000	62.000000
6484.000000	495.000000	183.000000	2.551810	.000154	.200000
-1.000000	2.650000	-1.000000	-1.000000	-1.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
-1.000000	-1.000000	-1.000000	915.000000	1.000000	62.000000
6485.000000	980.000000	183.000000	4.958510	.000125	.200000
-1.000000	2.650000	-1.000000	26.666667	-1.000000	-1.000000
-1.000000	.200000	-1.000000	-1.000000	-1.000000	-1.000000
-1.000000	-1.000000	-1.000000	915.000000	1.000000	62.000000

Data of HILL, SRINIVASAN & UNNY

6486.000000	.098543	.609600	.234696	.000689	.088000
1.660000	2.650000	-1.000000	32.222222	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6487.000000	.106755	.609600	.232258	.000759	.088000
1.660000	2.650000	-1.000000	32.222222	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6488.000000	.094012	.609600	.227686	.000716	.088000
1.660000	2.650000	-1.000000	37.777778	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6489.000000	.095145	.609600	.226162	.000738	.088000
1.660000	2.650000	-1.000000	37.777778	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6490.000000	.089198	.609600	.213360	.000694	.088000
1.660000	2.650000	-1.000000	43.333333	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6491.000000	.089198	.609600	.227686	.000683	.088000
1.660000	2.650000	-1.000000	43.333333	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6492.000000	.082119	.609600	.218846	.000625	.088000
1.660000	2.650000	-1.000000	54.444444	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6493.000000	.085234	.609600	.238049	.000521	.088000
1.660000	2.650000	-1.000000	65.555556	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6494.000000	.112701	.609600	.226162	.001162	.088000
1.660000	2.650000	-1.000000	23.333333	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6495.000000	.114683	.609600	.237134	.000979	.088000
1.660000	2.650000	-1.000000	22.222222	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	31.185600	1.000000	63.000000
6496.000000	.121762	.609600	.253289	.000837	.088000
1.660000	2.650000	-1.000000	21.666667	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6497.000000	.110719	.609600	.246889	.000833	.150000
1.510000	2.650000	-1.000000	22.222222	4.000000	.090000
.140000	.150000	.170000	.198000	.210000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000

6498.000000	.107604	.609600	.226771	.001041	.150000
1.510000	2.650000	-1.000000	21.666667	4.000000	.090000
.140000	.150000	.170000	.198000	.210000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6499.000000	.092313	.609600	.231648	.001041	.150000
1.510000	2.650000	-1.000000	26.666667	4.000000	.090000
.140000	.150000	.170000	.198000	.210000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6500.000000	.107321	.609600	.232867	.000763	.150000
1.510000	2.650000	-1.000000	32.222222	4.000000	.090000
.140000	.150000	.170000	.198000	.210000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6501.000000	.090897	.609600	.238658	.000653	.150000
1.510000	2.650000	-1.000000	43.333333	4.000000	.090000
.140000	.150000	.170000	.198000	.210000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6502.000000	.116949	.609600	.237744	.000900	.150000
1.510000	2.650000	-1.000000	65.555556	4.000000	.090000
.140000	.150000	.170000	.198000	.210000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6503.000000	.105622	.609600	.246278	.000933	.150000
1.510000	2.650000	-1.000000	54.444444	4.000000	.090000
.140000	.150000	.170000	.198000	.210000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6504.000000	.086933	.609600	.228905	.000737	.150000
1.510000	2.650000	-1.000000	54.444444	4.000000	.090000
.140000	.150000	.170000	.198000	.210000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6505.000000	.093162	.609600	.178918	.001115	.150000
1.510000	2.650000	-1.000000	65.555556	4.000000	.090000
.140000	.150000	.170000	.198000	.210000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6506.000000	.108454	.609600	.202692	.002010	.310000
1.320000	2.650000	-1.000000	23.888889	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6507.000000	.108737	.609600	.182270	.002083	.310000
1.320000	2.650000	-1.000000	27.222222	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6508.000000	.095711	.609600	.176784	.001837	.310000
1.320000	2.650000	-1.000000	32.222222	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6509.000000	.123745	.609600	.203302	.002471	.310000
1.320000	2.650000	-1.000000	43.333333	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.010000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000

6510.000000	.115816	.609600	.173431	.002549	.310000
1.320000	2.650000	-1.000000	54.444444	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6511.000000	.116665	.609600	.163678	.002604	.310000
1.320000	2.650000	-1.000000	65.555556	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6512.000000	.118364	.609600	.180442	.002494	.310000
1.320000	2.650000	-1.000000	38.055556	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6513.000000	.115816	.609600	.176479	.002315	.310000
1.320000	2.650000	-1.000000	48.888889	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6514.000000	.104772	.609600	.160630	.002678	.310000
1.320000	2.650000	-1.000000	32.222222	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6515.000000	.118364	.609600	.178613	.002604	.310000
1.320000	2.650000	-1.000000	30.000000	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6516.000000	.117232	.609600	.181356	.002436	.310000
1.320000	2.650000	-1.000000	42.777778	4.000000	.210000
.250000	.310000	.330000	.380000	.400000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6517.000000	.113619	.609600	.246888	.000771	.088000
1.660000	2.650000	-1.000000	27.777778	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6518.000000	.090461	.609600	.199522	.000885	.088000
1.660000	2.650000	-1.000000	27.777778	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000
6519.000000	.077288	.609600	.165384	.001001	.088000
1.660000	2.650000	-1.000000	27.777778	4.000000	.050000
.060000	.088000	.090000	.130000	.150000	-1.000000
-1.000000	-1.000000	-1.000000	37.185600	1.000000	63.000000

Data of KENNEDY & BROOKS

6520.000000	.039526	.850900	.167640	.000560	.142000
1.380000	2.650000	14.000000	19.500000	3.000000	.102000
.128600	.142000	.165700	.197000	.220670	-1.000000
.131064	.014935	-1.000000	18.288000	1.000000	64.000000
6521.000000	.039763	.850900	.134417	.001450	.142000
1.380000	2.650000	390.000000	18.400000	3.000000	.102000
.128600	.142000	.165700	.197000	.220670	-1.000000
.140208	.019507	-1.000000	18.288000	1.000000	64.000000
6522.000000	.039842	.850900	.113690	.002060	.142000
1.380000	2.650000	1420.000000	18.400000	3.000000	.102000
.128600	.142000	.165700	.197000	.220670	-1.000000
.146304	.021336	-1.000000	18.288000	1.000000	64.000000
6523.000000	.039526	.850900	.105156	.001980	.142000
1.380000	2.650000	1130.000000	25.100000	3.000000	.102000
.128600	.142000	.165700	.197000	.220670	-1.000000
.128016	.020117	-1.000000	18.288000	1.000000	64.000000
6524.000000	.039526	.850900	.103632	.001600	.142000
1.380000	2.650000	980.000000	25.300000	3.000000	.102000
.128600	.142000	.165700	.197000	.220670	-1.000000
.152400	.018593	-1.000000	18.288000	1.000000	64.000000
6525.000000	.039526	.850900	.077419	.002500	.142000
1.380000	2.650000	1710.000000	25.300000	5.000000	.102000
.128600	.142000	.165700	.197000	.220670	-1.000000
-1.000000	-1.000000	-1.000000	18.288000	1.000000	64.000000
6526.000000	.039647	.850900	.071628	.001980	.142000
1.380000	2.650000	1570.000000	25.700000	5.000000	.102000
.128600	.142000	.165700	.197000	.220670	-1.000000
-1.000000	-1.000000	-1.000000	18.288000	1.000000	64.000000
6527.000000	.039647	.850900	.071018	.002070	.142000
1.380000	2.650000	1410.000000	25.200000	5.000000	.102000
.128600	.142000	.165700	.197000	.220670	-1.000000
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6528.000000	.039842	.850900	.069494	.002210	.142000
1.380000	2.650000	1740.000000	25.400000	5.000000	.102000
.128600	.142000	.165700	.197000	.220670	-1.000000
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Data of NORDIN, A

6529.000000	77.305000	82.905600	.752856	.000890	.230000
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.191193	.270000	.307588	.436314	.476965	-1.000000
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6530.000000	183.776000	82.905600	1.106426	.000840	.390000
1.650000	2.650000	-1.000000	16.666667	5.000000	.253610
.339350	.470000	.474729	.790043	.919913	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6531.000000	173.865000	82.905600	1.155192	.000830	.280000
1.530000	2.650000	-1.000000	21.111111	5.000000	.172238
.241279	.320000	.374101	.459532	.486511	-1.000000
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6532.000000	136.770000	82.905600	1.063752	.000790	.320000
1.550000	2.650000	-1.000000	22.222222	4.000000	.194038
.284757	.360000	.410385	.489950	.702247	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6533.000000	78.155000	81.991200	.841248	.000760	.300000
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.260512	.340000	.397623	.484461	.626214	-1.000000
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6534.000000	58.333000	82.296000	.819912	.000800	.270000
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.217105	.320000	.367754	.482488	.637168	-1.000000
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6535.000000	194.254000	82.296000	1.121664	.000800	.320000
1.890000	2.650000	-1.000000	14.444444	5.000000	.176613
.254577	.400000	.426201	.725926	.948148	-1.000000
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6536.000000	235.596000	82.600800	1.359408	.000800	.290000
1.730000	2.650000	-1.000000	15.555556	5.000000	.162614
.234802	.350000	.397727	.535714	.750000	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6537.000000	245.790000	82.296000	1.252728	.000790	.370000
1.480000	2.650000	-1.000000	19.444444	5.000000	.262103
.333964	.430000	.447428	.630102	.783163	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6538.000000	286.000000	83.210400	1.463040	.000800	.290000
1.540000	2.650000	-1.000000	23.333333	6.000000	.172753
.239466	.330000	.383399	.477273	.582353	-1.000000
4.876800	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6539.000000	231.066000	82.905600	1.322832	.000830	.280000
1.420000	2.650000	-1.000000	14.444444	5.000000	.177741
.256260	.320000	.373631	.447966	.471440	-1.000000
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6540.000000	164.238000	82.296000	1.045464	.000740	.340000
1.490000	2.650000	-1.000000	18.333333	5.000000	.217246
.304064	.380000	.419095	.491948	.729412	-1.000000
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6541.000000	122.895000	81.076800	.813816	.000760	.350000
1.670000	2.650000	-1.000000	17.222222	5.000000	.210000
.306655	.420000	.441547	.688679	.877359	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6542.000000	113.267000	81.381600	.902208	.000760	.270000
1.880000	2.650000	-1.000000	19.444444	5.000000	.153694
.216359	.350000	.390227	.622378	.832168	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6543.000000	171.034000	83.210400	1.036320	.000800	.350000
1.440000	2.650000	-1.000000	22.777778	6.000000	.224689
.320521	.390000	.432463	.530000	.730000	-1.000000
3.962400	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6544.000000	59.465000	81.991200	.780288	.000830	.334762
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.263333	.360000	.406191	.496667	.743119	-1.000000
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6545.000000	35.113000	40.538400	1.048512	.000830	.316915
-1.000000	2.650000	-1.000000	18.333333	3.000000	.174149
.247678	.330000	.386617	.474907	.540000	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6546.000000	57.483000	81.686400	.893064	.000820	.291186
-1.000000	2.650000	-1.000000	23.333333	3.000000	.163185
.225120	.330000	.376697	.484163	.658416	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6547.000000	63.147000	81.381600	.804672	.000830	.220000
1.560000	2.650000	-1.000000	13.888889	4.000000	.140107
.186404	.260000	.276860	.407714	.449036	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6548.000000	95.145000	82.296000	.950976	.000830	.230000
1.530000	2.650000	-1.000000	18.888889	4.000000	.147901
.193225	.270000	.291005	.416667	.456349	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6549.000000	63.996000	81.686400	.710184	.000850	.220000
1.460000	2.650000	-1.000000	17.222222	4.000000	.148574
.186212	.250000	.245642	.387255	.436275	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6550.000000	82.402000	195.072000	.359664	.000890	.290000
1.610000	2.650000	-1.000000	17.777778	5.000000	.167870
.253552	.330000	.386767	.471137	.497778	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6551.000000	180.945000	173.736000	.630936	.000840	.340000
1.730000	2.650000	-1.000000	18.333333	5.000000	.194328
.291916	.410000	.441617	.692105	.850000	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6552.000000	172.733000	149.047200	.664464	.000830	.310000
1.530000	2.650000	-1.000000	23.333333	5.000000	.185345
.267762	.350000	.400977	.485346	.637755	-1.000000
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6553.000000	133.656000	106.680000	.746760	.000790	.330000
1.720000	2.650000	-1.000000	22.777778	5.000000	.187500
.272588	.400000	.426591	.654605	.851974	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6554.000000	80.703000	112.776000	.734568	.000760	.310000
1.520000	2.650000	-1.000000	21.111111	4.000000	.186553
.273411	.340000	.398829	.478261	.552632	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6555.000000	57.483000	176.784000	.481584	.000800	.330000
1.600000	2.650000	-1.000000	26.666667	3.000000	.196889
.290553	.390000	.424242	.574627	.798507	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6556.000000	190.572000	169.773600	.655320	.000800	.240000
1.530000	2.650000	-1.000000	16.111111	5.000000	.146394
.199887	.280000	.319794	.428490	.462815	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6557.000000	235.313000	164.896800	.777240	.000800	.280000
1.560000	2.650000	-1.000000	17.222222	5.000000	.239614
.233680	.320000	.369403	.458022	.486008	-1.000000
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6558.000000	246.357000	196.596000	.667512	.000790	.220000
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.165378	.220000	.316538	.439277	.478036	-1.000000
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6559.000000	282.319000	194.157600	.804672	.000800	.250000
2.350000	2.650000	-1.000000	20.000000	6.000000	.081031
.159826	.270000	.338269	.446469	.480638	-1.000000
4.876800	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6560.000000	220.588000	154.838400	.829056	.000830	.300000
1.670000	2.650000	-1.000000	21.666667	5.000000	.162594
.251883	.340000	.393126	.482580	.617347	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6561.000000	154.327000	158.496000	.649224	.000740	.320000
1.510000	2.650000	-1.000000	20.555556	5.000000	.193702
.279801	.350000	.403974	.482616	.638462	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6562.000000	124.028000	151.790400	.582168	.000760	.450000
2.250000	2.650000	-1.000000	18.888889	5.000000	.274428
.373181	.680000	.640704	1.415929	1.946903	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6563.000000	133.939000	157.886400	.694944	.000760	.290000
3.340000	2.650000	-1.000000	22.222222	4.000000	.161487
.225676	.290000	.425926	1.560000	1.550000	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6564.000000	168.768000	162.153600	.637032	.000800	.320000
1.680000	2.650000	-1.000000	25.000000	6.000000	.184234
.269193	.380000	.416831	.605000	.905000	-1.000000
3.962400	-1.000000	-1.000000	2511.552000	1.000000	65.000000

6565.000000	59.465000	192.633600	.332232	.000830	.300000
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.263333	.350000	.406191	.496667	.743119	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6566.000000	35.113000	139.903200	.402336	.000830	.316915
-1.000000	2.650000	-1.000000	18.333333	3.000000	.174149
.247678	.330000	.386617	.474907	.540000	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6567.000000	57.483000	108.813600	.438912	.000820	.291855
-1.000000	2.650000	-1.000000	22.777778	3.000000	.163185
.225196	.330000	.376697	.484163	.658416	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6568.000000	64.562000	168.249600	.417576	.000830	.190000
1.580000	2.650000	-1.000000	14.444444	4.000000	.121143
.165913	.220000	.233725	.361321	.417925	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6569.000000	110.153000	194.462400	.533400	.000830	.220000
1.510000	2.650000	-1.000000	18.333333	4.000000	.145125
.187612	.250000	.265579	.406528	.451039	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000
6570.000000	63.996000	102.108000	.569976	.000850	.210000
1.490000	2.650000	-1.000000	18.888889	4.000000	.141694
.180375	.240000	.241450	.391221	.448473	-1.000000
-1.000000	-1.000000	-1.000000	2511.552000	1.000000	65.000000

Data of NORDIN, B

6571.000000	7.400891	16.764000	.670560	.000550	.230000
-1.000000	2.650000	-1.000000	19.000000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
1.847088	.112776	-1.000000	-1.000000	1.000000	66.000000
6572.000000	7.558191	16.764000	.701040	.000550	.230000
-1.000000	2.650000	-1.000000	20.000000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
1.871472	.112166	-1.000000	-1.000000	1.000000	66.000000
6573.000000	10.981726	16.764000	1.033272	.000580	.230000
-1.000000	2.650000	-1.000000	20.000000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
1.609344	.124358	-1.000000	-1.000000	1.000000	66.000000
6574.000000	1.325682	2.438400	.853440	.000630	.240000
-1.000000	2.650000	-1.000000	20.000000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
1.487424	.085627	-1.000000	60.960000	1.000000	66.000000
6575.000000	1.074590	2.438400	.719328	.000560	.240000
-1.000000	2.650000	-1.000000	24.000000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
1.288847	.076875	-1.000000	60.960000	1.000000	66.000000
6576.000000	1.074590	2.438400	.719328	.000530	.240000
-1.000000	2.650000	-1.000000	25.000000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
1.265936	.060554	-1.000000	60.960000	1.000000	66.000000
6577.000000	1.074590	2.438400	.719328	.000450	.240000
-1.000000	2.650000	-1.000000	25.000000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
1.265936	.060554	-1.000000	60.960000	1.000000	66.000000
6578.000000	.032270	.609600	.157886	.000880	.350000
-1.000000	2.650000	-1.000000	20.000000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.364744	.027808	-1.000000	18.288000	1.000000	66.000000
6579.000000	.031632	.609600	.159106	.000880	.350000
-1.000000	2.650000	-1.000000	20.000000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.392176	.025979	-1.000000	18.288000	1.000000	66.000000
6580.000000	.047800	.609600	.158801	.002120	.350000
-1.000000	2.650000	-1.000000	20.000000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.876808	.043688	-1.000000	18.288000	1.000000	66.000000
6581.000000	.001677	.204216	.053035	.001480	.300000
-1.000000	2.650000	-1.000000	20.000000	2.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	-1.000000	-1.000000
.142951	.017206	-1.000000	9.144000	1.000000	66.000000

Data of WILLIAMS, B

6582.000000	.003596	.304800	.030480	.004110	1.350000
1.186916	2.660000	182.890946	18.500000	5.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
-1.000000	-1.000000	-1.000000	15.849600	1.000000	67.000000
6583.000000	.004021	.304800	.030480	.004950	1.350000
1.186916	2.660000	282.828850	19.200000	5.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
-1.000000	-1.000000	-1.000000	15.849600	1.000000	67.000000
6584.000000	.004474	.304800	.031090	.005900	1.350000
1.186916	2.660000	601.209433	21.000000	5.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
-1.000000	-1.000000	-1.000000	15.849600	1.000000	67.000000
6585.000000	.004361	.304800	.030785	.007510	1.350000
1.186916	2.660000	972.566862	12.500000	7.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.152400	-1.000000	-1.000000	15.849600	1.000000	67.000000
6586.000000	.004701	.304800	.028956	.010820	1.350000
1.186916	2.660000	1910.667998	11.900000	7.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.152400	.006401	.006096	15.849600	1.000000	67.000000
6587.000000	.005409	.304800	.030785	.012800	1.350000
1.186916	2.660000	2888.398644	17.600000	7.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.182880	.012802	.006584	15.849600	1.000000	67.000000
6588.000000	.006230	.304800	.030175	.015050	1.350000
1.186916	2.660000	4202.730491	15.500000	7.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.213360	.025298	.009144	15.849600	1.000000	67.000000
6589.000000	.006598	.304800	.028651	.019920	1.350000
1.186916	2.660000	7699.986118	23.500000	7.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.304800	.016154	.009144	15.849600	1.000000	67.000000
6590.000000	.008269	.304800	.029566	.022180	1.350000
1.186916	2.660000	9221.743072	24.700000	7.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.182880	.022250	.020818	15.849600	1.000000	67.000000
6591.000000	.011468	.304800	.090526	.001100	1.350000
1.186916	2.660000	9.888065	21.300000	5.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
-1.000000	-1.000000	-1.000000	15.849600	1.000000	67.000000
6592.000000	.012459	.304800	.095707	.001210	1.350000
1.186916	2.660000	11.285824	22.700000	5.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
-1.000000	.006400	.000213	15.849600	1.000000	67.000000
6593.000000	.012459	.304800	.095402	.001360	1.350000
1.186916	2.660000	19.659129	19.800000	5.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
-1.000000	-1.000000	-1.000000	15.849600	1.000000	67.000000

6594.000000	.012403	.304800	.089611	.001620	1.350000
1.186916	2.660000	39.132506	18.600000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
2.712720	.012802	.000518	15.849600	1.000000	67.000000
6595.000000	.012799	.304800	.089611	.001820	1.350000
1.186916	2.660000	60.601896	16.500000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
1.767840	.012802	.000823	15.849600	1.000000	67.000000
6596.000000	.013310	.304800	.091440	.002000	1.350000
1.186916	2.660000	87.251071	18.400000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
1.463040	.016154	.000457	15.849600	1.000000	67.000000
6597.000000	.014102	.304800	.092354	.002100	1.350000
1.186916	2.660000	116.119760	17.200000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
1.310640	.019202	.001067	15.849600	1.000000	67.000000
6598.000000	.014243	.304800	.092659	.021100	1.350000
1.186916	2.660000	119.424031	17.800000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
1.097280	.012802	.000823	15.849600	1.000000	67.000000
6599.000000	.014498	.304800	.089916	.002360	1.350000
1.186916	2.660000	183.026447	17.100000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
1.066800	.016154	.002286	15.849600	1.000000	67.000000
6600.000000	.015008	.304800	.089611	.002720	1.350000
1.186916	2.660000	279.572079	17.800000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
-1.000000	.016154	.003566	15.849600	1.000000	67.000000
6601.000000	.015603	.304800	.088392	.003180	1.350000
1.186916	2.660000	316.886073	16.100000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
-1.000000	.016154	.004816	15.849600	1.000000	67.000000
6602.000000	.016141	.304800	.087782	.003970	1.350000
1.186916	2.660000	448.805436	16.200000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
-1.000000	.019202	.008138	15.849600	1.000000	67.000000
6603.000000	.018406	.304800	.087478	.005090	1.350000
1.186916	2.660000	777.771088	15.900000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.548640	.022250	.008138	15.849600	1.000000	67.000000
6604.000000	.022370	.304800	.090830	.004710	1.350000
1.186916	2.660000	661.431827	30.800000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.579120	.031699	.005090	15.849600	1.000000	67.000000
6605.000000	.020983	.304800	.090526	.005570	1.350000
1.186916	2.660000	827.094160	12.300000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.396340	.050902	.007620	15.849600	1.000000	67.000000

6606.000000	.022484	.304800	.093269	.006430	1.350000
1.186916	2.660000	969.395341	15.500000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.457200	.038100	.011704	15.849600	1.000000	67.000000
6607.000000	.024353	.304800	.093574	.007210	1.350000
1.186916	2.660000	1280.566627	21.800000	7.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.457200	.050902	.002530	15.849600	1.000000	67.000000
6608.000000	.029733	.304800	.098755	.008240	1.350000
1.186916	2.660000	1483.182202	23.500000	7.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.487680	.076200	.012192	15.849600	1.000000	67.000000
6609.000000	.031715	.304800	.097841	.010880	1.350000
1.186916	2.660000	2328.436981	25.000000	7.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.487680	.076200	.010668	15.849600	1.000000	67.000000
6610.000000	.023928	.304800	.155143	.001370	1.350000
1.186916	2.660000	38.483002	21.000000	7.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
1.584960	.025298	.000366	15.849600	1.000000	67.000000
6611.000000	.022512	.304800	.147828	.001330	1.350000
1.186916	2.660000	41.709273	26.000000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
1.188720	.012802	.000213	15.849600	1.000000	67.000000
6612.000000	.024522	.304800	.153924	.001440	1.350000
1.186916	2.660000	53.272348	22.900000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
1.127760	.031699	.000518	15.849600	1.000000	67.000000
6613.000000	.025627	.304800	.157582	.001720	1.350000
1.186916	2.660000	84.784305	23.600000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.853440	.019202	.000549	15.849600	1.000000	67.000000
6614.000000	.027184	.304800	.156058	.001840	1.350000
1.186916	2.660000	101.785666	23.200000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.883920	.012802	.000671	15.849600	1.000000	67.000000
6615.000000	.027128	.304800	.153010	.002160	1.350000
1.186916	2.660000	119.722533	17.900000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.762000	.019202	.000610	15.849600	1.000000	67.000000
6616.000000	.029733	.304800	.157582	.002160	1.350000
1.186916	2.660000	172.086876	18.700000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.609600	.050902	.002195	15.849600	1.000000	67.000000
6617.000000	.031149	.304800	.153619	.003140	1.350000
1.186916	2.660000	286.880877	20.800000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.670560	.050902	.001920	15.849600	1.000000	67.000000

6618.000000	.037378	.304800	.155448	.004160	1.350000
1.186916	2.660000	404.108893	20.800000	3.000000	1.173913
1.347826	1.440000	1.521739	1.652174	1.804348	.142000
.548640	.050402	.006614	15.849600	1.000000	67.000000

Data of MONDEGO

6619.000000	114.900000	182.401460	.647090	.000910	2.602990
2.300000	2.650000	129.894000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6620.000000	89.000000	173.598850	.597100	.000820	2.602990
2.300000	2.650000	78.903000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6621.000000	88.200000	173.598850	.592230	.000800	2.602990
2.300000	2.650000	59.664000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6622.000000	59.599990	109.999270	.690070	.000690	2.602990
2.300000	2.650000	48.134000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6623.000000	83.299980	102.001330	.930250	.000850	2.602990
2.300000	2.650000	45.004000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6624.000000	104.699990	140.000730	.822350	.000870	2.602990
2.300000	2.650000	72.619000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6625.000000	89.900000	140.000730	.724200	.000770	2.602990
2.300000	2.650000	105.130000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6626.000000	78.399990	114.001300	.791260	.000730	2.602990
2.300000	2.650000	72.735000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6627.000000	121.999930	140.000730	.911350	.000820	2.602990
2.300000	2.650000	148.590000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6628.000000	194.099920	182.901340	1.093620	.000710	2.602990
2.300000	2.650000	89.043000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6629.000000	162.799990	182.998870	.983590	.000730	2.602990
2.300000	2.650000	95.135000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6630.000000	279.799770	183.998630	1.356660	.000750	2.602990
2.300000	2.650000	75.797000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6631.000000	294.999920	183.998630	1.601420	.000610	2.602990
2.300000	2.650000	91.997000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6632.000000	309.999890	184.099210	1.675790	.000650	2.602990
2.300000	2.650000	227.267000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6633.000000	221.799890	183.800510	1.184760	.000780	2.602990
2.300000	2.650000	96.332000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6634.000000	191.199990	183.498750	1.086610	.000800	2.602990
2.300000	2.650000	80.728000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6635.000000	170.899930	183.401210	1.017420	.000820	2.602990
2.300000	2.650000	70.647000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6636.000000	215.599940	183.651150	1.160680	.000800	2.602990
2.300000	2.650000	71.837000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6637.000000	196.999970	183.629820	1.111000	.000810	2.602990
2.300000	2.650000	146.339000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6638.000000	141.999910	182.998870	.853140	.000820	2.602990
2.300000	2.650000	179.842000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6639.000000	152.399940	182.998870	.894890	.000870	2.602990
2.300000	2.650000	68.367000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6640.000000	136.999890	182.800750	.836070	.000860	2.602990
2.300000	2.650000	105.215000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6641.000000	124.499990	182.200290	.788820	.000850	2.602990
2.300000	2.650000	161.439000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6642.000000	357.599870	184.599060	1.738880	.000840	2.602990
2.300000	2.650000	137.660000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6643.000000	305.199850	184.050420	1.493220	.000850	2.602990
2.300000	2.650000	196.991000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6644.000000	259.999960	183.849270	1.359710	.000890	2.602990
2.300000	2.650000	206.461000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6645.000000	477.999950	187.601350	1.848920	.000950	2.602990
2.300000	2.650000	213.372000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6646.000000	320.399780	184.099210	1.549300	.000930	2.602990
2.300000	2.650000	251.915000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6647.000000	254.399990	183.800510	1.351790	.000920	2.602990
2.300000	2.650000	259.780000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6648.000000	218.499980	183.599330	1.223160	.000940	2.602990
2.300000	2.650000	193.398000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6649.000000	192.499920	180.999390	1.143910	.000940	2.602990
2.300000	2.650000	227.748000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6650.000000	432.599790	187.601350	1.759310	.000910	2.602990
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1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6651.000000	350.000000	184.099210	1.727300	.000720	2.602990
2.300000	2.650000	187.264000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6652.000000	574.999920	187.400180	2.152800	.000750	2.602990
2.300000	2.650000	146.616000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6653.000000	299.999960	185.001400	1.650800	.000780	2.602990
2.300000	2.650000	209.792000	10.000000	.000000	.900000
1.700000	2.920000	3.3[illegible]000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6654.000000	297.999950	185.001400	1.630980	.000770	2.602990
2.300000	2.650000	199.211000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6655.000000	269.999920	184.739290	1.502970	.000750	2.602990
2.300000	2.650000	202.074000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6656.000000	252.999950	184.400940	1.425850	.000720	2.602990
2.300000	2.650000	160.904000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6657.000000	545.000000	188.500520	2.130860	.000790	2.602990
2.300000	2.650000	203.094000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6658.000000	613.999940	188.939420	2.315870	.000810	2.602990
2.300000	2.650000	168.920000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6659.000000	660.000000	188.790070	2.426510	.000820	2.602990
2.300000	2.650000	207.973000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6660.000000	370.000000	186.001160	1.833370	.000680	2.602990
2.300000	2.650000	244.212000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6661.000000	317.999950	185.300110	1.699870	.000760	2.602990
2.300000	2.650000	247.175000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6662.000000	261.999970	185.001400	1.517600	.000780	2.602990
2.300000	2.650000	253.924000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6663.000000	211.999930	177.399690	1.212800	.000790	2.602990
2.300000	2.650000	190.694000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6664.000000	202.000010	177.250340	1.183840	.000830	2.602990
2.300000	2.650000	257.204000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6665.000000	196.999970	176.000670	1.157330	.000860	2.602990
2.300000	2.650000	210.932000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6666.000000	177.999920	176.750460	1.077470	.000810	2.602990
2.300000	2.650000	274.876000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6667.000000	169.999960	176.601140	1.038450	.000800	2.602990
2.300000	2.650000	212.235000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6668.000000	159.999920	176.351170	1.000050	.000790	2.602990
2.300000	2.650000	181.720000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6669.000000	136.999890	175.799500	.910130	.000710	2.602990
2.300000	2.650000	168.035000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6670.000000	132.999920	169.398710	.922930	.000710	2.602990
2.300000	2.650000	189.895000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6671.000000	127.999990	168.499540	.902820	.000680	2.602990
2.300000	2.650000	134.888000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6672.000000	119.999940	166.600620	.868070	.000650	2.602990
2.300000	2.650000	133.320000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6673.000000	129.999980	165.149780	.840330	.000620	2.602990
2.300000	2.650000	130.105000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6674.000000	112.000010	164.948610	.821440	.000620	2.602990
2.300000	2.650000	86.743000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6675.000000	97.000010	163.199070	.724510	.000540	2.602990
2.300000	2.650000	94.532000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6676.000000	579.999920	187.900050	2.333550	.000770	2.602990
2.300000	2.650000	54.226000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6677.000000	615.000000	188.000640	2.377440	.000790	2.602990
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1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6678.000000	640.000000	187.698880	2.441450	.000820	2.602990
2.300000	2.650000	109.918000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6679.000000	469.999920	187.601350	2.042160	.000770	2.602990
2.300000	2.650000	183.414000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
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6680.000000	451.999890	187.500760	1.993390	.000740	2.602990
2.300000	2.650000	96.878000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6681.000000	409.999920	187.269130	1.855620	.000740	2.602990
2.300000	2.650000	214.162000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6682.000000	227.999950	183.998630	1.323750	.000730	2.602990
2.300000	2.650000	248.716000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6683.000000	196.999970	183.459110	1.121360	.000810	2.602990
2.300000	2.650000	155.899000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6684.000000	184.999920	183.498750	1.056440	.000870	2.602990
2.300000	2.650000	213.959000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6685.000000	171.999970	183.498750	.996390	.000890	2.602990
2.300000	2.650000	281.498000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6686.000000	166.999930	183.440830	.956460	.000880	2.602990
2.300000	2.650000	204.982000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6687.000000	172.999880	183.349400	.887270	.000870	2.602990
2.300000	2.650000	258.201000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6688.000000	145.999890	183.248810	.837590	.000860	2.602990
2.300000	2.650000	187.331000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6689.000000	124.999960	180.551330	.804670	.000680	2.602990
2.300000	2.650000	120.666000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6690.000000	117.999950	179.600340	.778760	.000810	2.602990
2.300000	2.650000	192.556000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6691.000000	115.000000	178.500030	.758340	.000810	2.602990
2.300000	2.650000	199.415000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6692.000000	102.000010	173.348910	.705000	.000760	2.602990
2.300000	2.650000	181.521000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6693.000000	75.000000	154.999940	.626970	.000670	2.602990
2.300000	2.650000	113.109000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6694.000000	87.000010	161.598850	.676050	.000740	2.602990
2.300000	2.650000	113.287000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6695.000000	85.000000	161.001460	.663240	.000680	2.602990
2.300000	2.650000	114.918000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6696.000000	73.000000	146.950160	.648310	.000770	2.602990
2.300000	2.650000	51.112000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6697.000000	68.000000	145.398740	.603810	.000790	2.602990
2.300000	2.650000	106.635000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6698.000000	71.000000	138.400540	.586130	.000790	2.602990
2.300000	2.650000	48.338000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6699.000000	50.000000	135.998720	.522120	.000730	2.602990
2.300000	2.650000	47.872000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6700.000000	48.000000	134.450320	.512060	.000730	2.602990
2.300000	2.650000	27.133000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6701.000000	41.999990	131.350520	.478540	.000710	2.602990
2.300000	2.650000	48.610000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6702.000000	58.000000	137.251430	.562660	.000810	2.602990
2.300000	2.650000	50.372000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6703.000000	42.500000	130.500120	.479150	.000720	2.602990
2.300000	2.650000	26.504000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6704.000000	40.000000	126.650500	.478840	.000710	2.602990
2.300000	2.650000	27.720000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6705.000000	36.499990	124.248670	.457500	.000700	2.602990
2.300000	2.650000	38.093000	10.000000	.000000	.900000
1.700000	2.920000	3.300000	5.200000	6.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6706.000000	77.049990	70.399660	1.075640	.000770	2.203700
2.120000	2.650000	128.831000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6707.000000	66.399990	70.399660	1.092710	.000740	2.203700
2.120000	2.650000	117.157000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6708.000000	58.299980	70.399660	.879960	.000730	2.203700
2.120000	2.650000	107.170000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6709.000000	86.799980	70.399660	1.200000	.000730	2.203700
2.120000	2.650000	80.903000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6710.000000	82.999990	70.399660	1.150010	.000750	2.203700
2.120000	2.650000	103.480000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6711.000000	77.899990	70.399660	1.100020	.000750	2.203700
2.120000	2.650000	60.775000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6712.000000	65.500000	70.399660	.959820	.000730	2.203700
2.120000	2.650000	68.519000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6713.000000	56.500000	70.399660	.859840	.000720	2.203700
2.120000	2.650000	61.366000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6714.000000	40.000000	70.399660	.667510	.000670	2.203700
2.120000	2.650000	96.360000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6715.000000	36.000000	69.698620	.664160	.000630	2.203700
2.120000	2.650000	101.895000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6716.000000	36.000000	69.698620	.634290	.000620	2.203700
2.120000	2.650000	58.178000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6717.000000	35.000000	69.601070	.625140	.000620	2.203700
2.120000	2.650000	34.697000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6718.000000	78.000000	70.399660	1.160680	.000770	2.203700
2.120000	2.650000	83.036000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6719.000000	96.000000	70.399660	1.350570	.000760	2.203700
2.120000	2.650000	109.267000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6720.000000	94.000000	70.399660	1.330760	.000730	2.203700
2.120000	2.650000	85.566000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6721.000000	75.000000	70.399660	1.130810	.000730	2.203700
2.120000	2.650000	108.885000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6722.000000	102.999990	70.399660	1.420370	.000750	2.203700
2.120000	2.650000	56.730000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6723.000000	165.999980	71.298810	2.028140	.000750	2.203700
2.120000	2.650000	67.537000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6724.000000	133.999960	71.000110	1.876960	.000740	2.203700
2.120000	2.650000	110.722000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6725.000000	137.999940	70.899540	1.819350	.000760	2.203700
2.120000	2.650000	67.084000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6726.000000	155.999950	71.201280	1.976630	.000750	2.203700
2.120000	2.650000	127.487000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6727.000000	175.000000	71.499980	2.147930	.000770	2.203700
2.120000	2.650000	94.437000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6728.000000	189.999960	71.798690	2.288440	.000830	2.203700
2.120000	2.650000	189.895000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6729.000000	178.999980	71.499980	2.187850	.000760	2.203700
2.120000	2.650000	194.780000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6730.000000	153.999960	71.201280	1.917190	.000880	2.203700
2.120000	2.650000	148.914000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6731.000000	148.999940	71.100690	1.859890	.000880	2.203700
2.120000	2.650000	271.442000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6732.000000	142.999950	71.000110	1.782170	.000900	2.203700
2.120000	2.650000	350.892000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6733.000000	139.999920	70.798930	1.737360	.000870	2.203700
2.120000	2.650000	269.908000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6734.000000	136.999890	70.798930	1.694990	.000820	2.203700
2.120000	2.650000	80.806000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6735.000000	134.999900	70.899540	1.938220	.000840	2.203700
2.120000	2.650000	239.099000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6736.000000	157.999940	71.100690	2.132080	.000890	2.203700
2.120000	2.650000	231.696000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6737.000000	142.999950	70.899540	1.947980	.000890	2.203700
2.120000	2.650000	204.184000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6738.000000	196.999970	71.000110	2.164690	.000940	2.203700
2.120000	2.650000	171.712000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6739.000000	160.999980	71.600570	2.097330	.000970	2.203700
2.120000	2.650000	123.637000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6740.000000	152.999900	70.899540	1.907130	.000810	2.203700
2.120000	2.650000	202.918000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6741.000000	156.999990	71.399400	1.938530	.000950	2.203700
2.120000	2.650000	237.992000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6742.000000	152.999900	70.899540	1.907130	.000940	2.203700
2.120000	2.650000	246.515000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6743.000000	149.999980	70.899540	1.867200	.000920	2.203700
2.120000	2.650000	282.304000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6744.000000	152.999900	70.899540	1.907130	.000940	2.203700
2.120000	2.650000	345.673000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6745.000000	143.999900	70.899540	2.034840	.000890	2.203700
2.120000	2.650000	252.267000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6746.000000	136.999890	70.899540	1.969620	.000850	2.203700
2.120000	2.650000	282.242000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6747.000000	130.999930	70.798930	1.912320	.000870	2.203700
2.120000	2.650000	180.837000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6748.000000	141.999910	70.899540	2.014730	.000880	2.203700
2.120000	2.650000	246.400000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6749.000000	137.999940	70.899540	1.979680	.000870	2.203700
2.120000	2.650000	244.997000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6750.000000	120.999980	70.701420	1.558750	.000880	2.203700
2.120000	2.650000	175.709000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6751.000000	122.999970	70.701420	1.573680	.000880	2.203700
2.120000	2.650000	207.766000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6752.000000	119.999940	70.701420	1.503580	.000890	2.203700
2.120000	2.650000	91.960000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6753.000000	116.999890	70.600810	1.470960	.000890	2.203700
2.120000	2.650000	193.449000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6754.000000	165.999980	70.899540	2.162250	.000890	2.203700
2.120000	2.650000	247.566000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6755.000000	161.999890	70.899540	2.102210	.000860	2.203700
2.120000	2.650000	286.815000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6756.000000	158.999980	70.798930	2.075080	.000830	2.203700
2.120000	2.650000	135.930000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6757.000000	159.999920	70.798930	1.872690	.000930	2.203700
2.120000	2.650000	261.360000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6758.000000	150.999930	70.798930	1.827580	.000920	2.203700
2.120000	2.650000	231.714000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6759.000000	140.999980	70.798930	1.702610	.000890	2.203700
2.120000	2.650000	216.318000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6760.000000	150.999930	70.798930	1.800450	.000880	2.203700
2.120000	2.650000	198.728000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6761.000000	161.999890	70.899540	1.947670	.000890	2.203700
2.120000	2.650000	188.385000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6762.000000	178.999980	71.000110	2.134510	.000910	2.203700
2.120000	2.650000	332.433000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6763.000000	149.999980	70.798930	2.056790	.000910	2.203700
2.120000	2.650000	173.653000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6764.000000	175.000000	71.100690	2.347570	.000950	2.203700
2.120000	2.650000	178.414000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6765.000000	157.999940	70.798930	2.176880	.000970	2.203700
2.120000	2.650000	171.099000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6766.000000	158.999980	70.798930	1.804720	.000910	2.203700
2.120000	2.650000	259.793000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6767.000000	151.999970	70.701420	1.802280	.000910	2.203700
2.120000	2.650000	238.989000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6768.000000	150.999930	70.701420	1.792220	.000890	2.203700
2.120000	2.650000	219.942000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6769.000000	151.999970	70.701420	1.802280	.000900	2.203700
2.120000	2.650000	202.284000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6770.000000	149.999980	70.701420	1.787350	.000900	2.203700
2.120000	2.650000	254.848000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6771.000000	149.999980	70.701420	1.777290	.000870	2.203700
2.120000	2.650000	201.344000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6772.000000	140.999980	70.701420	1.815690	.000900	2.203700
2.120000	2.650000	226.803000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6773.000000	147.999990	70.701420	1.880920	.000870	2.203700
2.120000	2.650000	220.951000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6774.000000	140.999980	70.701420	1.835810	.000870	2.203700
2.120000	2.650000	253.140000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6775.000000	146.999930	70.701420	1.911100	.000870	2.203700
2.120000	2.650000	222.574000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6776.000000	159.999920	70.899540	2.045510	.000870	2.203700
2.120000	2.650000	266.530000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6777.000000	160.999980	70.899540	2.024180	.000950	2.203700
2.120000	2.650000	288.487000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6778.000000	156.999990	70.899540	1.994310	.000950	2.203700
2.120000	2.650000	227.230000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6779.000000	150.999930	70.798930	1.926950	.000950	2.203700
2.120000	2.650000	168.424000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6780.000000	147.999990	70.798930	1.897080	.000910	2.203700
2.120000	2.650000	240.097000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6781.000000	145.999890	70.798930	1.876960	.000890	2.203700
2.120000	2.650000	260.263000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6782.000000	146.999930	70.798930	1.887020	.000930	2.203700
2.120000	2.650000	318.955000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6783.000000	150.999930	70.899540	2.054660	.000910	2.203700
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-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6784.000000	150.999930	70.798930	2.012590	.000880	2.203700
2.120000	2.650000	148.493000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6785.000000	145.999890	70.798930	1.987600	.000890	2.203700
2.120000	2.650000	228.077000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6786.000000	140.999980	70.798930	1.972670	.000880	2.203700
2.120000	2.650000	282.848000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000

6787.000000	140.999980	70.798930	1.972670	.000870	2.203700
2.120000	2.650000	212.698000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6788.000000	139.000000	70.798930	1.947670	.000850	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6789.000000	136.999890	70.798930	1.631590	.000870	2.203700
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-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6790.000000	134.999900	70.701420	1.613920	.000880	2.203700
2.120000	2.650000	266.346000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6791.000000	127.999990	70.701420	1.588920	.000880	2.203700
2.120000	2.650000	296.862000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6792.000000	123.999900	70.600810	1.556310	.000890	2.203700
2.120000	2.650000	307.432000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6793.000000	122.999970	70.600810	1.536190	.000870	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6794.000000	119.000000	70.500240	1.513330	.000880	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6795.000000	114.000000	70.500240	1.484380	.000830	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6796.000000	112.000010	70.500240	1.464260	.000830	2.203700
2.120000	2.650000	136.243000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6797.000000	109.000000	70.399660	1.441400	.000830	2.203700
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6798.000000	106.000000	70.399660	1.406350	.000840	2.203700
2.120000	2.650000	177.826000	10.000000	.000000	.800000
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6799.000000	104.000000	70.399660	1.376170	.000790	2.203700
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6800.000000	99.000000	70.399660	1.326180	.000770	2.203700
2.120000	2.650000	202.667000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6801.000000	87.000010	70.299070	1.233830	.000730	2.203700
2.120000	2.650000	161.030000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6802.000000	84.000000	70.198490	1.205480	.000740	2.203700
2.120000	2.650000	155.048000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6803.000000	84.000000	70.198490	1.195430	.000740	2.203700
2.120000	2.650000	128.857000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6804.000000	80.999980	70.100950	1.177140	.000730	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6805.000000	79.000000	70.100950	1.152140	.000730	2.203700
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6806.000000	75.000000	70.500240	1.111000	.000720	2.203700
2.120000	2.650000	50.453000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6807.000000	60.000000	69.899780	.953410	.000780	2.203700
2.120000	2.650000	75.093000	10.000000	.000000	.800000
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6808.000000	74.000000	70.000370	1.092100	.000840	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6809.000000	96.000000	70.399660	1.304850	.000880	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6810.000000	102.000010	70.399660	1.404820	.000860	2.203700
2.120000	2.650000	164.612000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6811.000000	107.000010	70.500240	1.413050	.000250	2.203700
2.120000	2.650000	147.544000	10.000000	.000000	.800000
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6812.000000	157.999940	71.000110	2.097330	.000780	2.203700
2.120000	2.650000	152.051000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6813.000000	173.999940	71.000110	2.207360	.000770	2.203700
2.120000	2.650000	225.159000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6814.000000	180.999950	71.201280	2.261010	.000780	2.203700
2.120000	2.650000	148.093000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6815.000000	169.999960	71.000110	2.207360	.000740	2.203700
2.120000	2.650000	197.534000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6816.000000	151.999970	71.100690	2.140920	.000740	2.203700
2.120000	2.650000	192.674000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6817.000000	151.999970	71.100690	2.140920	.000730	2.203700
2.120000	2.650000	152.958000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6818.000000	150.999930	71.100690	2.130860	.000740	2.203700
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6819.000000	140.999980	70.899540	2.016860	.000760	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6820.000000	133.499980	70.798930	1.725780	.000760	2.203700
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6821.000000	128.499970	70.798930	1.675790	.000760	2.203700
2.120000	2.650000	242.291000	10.000000	.000000	.800000
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6822.000000	123.999900	70.798930	1.620620	.000750	2.203700
2.120000	2.650000	190.761000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6823.000000	121.999930	70.701420	1.608120	.000700	2.203700
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6824.000000	116.499940	70.701420	1.558140	.000680	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6825.000000	113.500000	70.600810	1.530400	.000680	2.203700
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6826.000000	107.000010	70.600810	1.502360	.000700	2.203700
2.120000	2.650000	197.876000	10.000000	.000000	.800000
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6827.000000	102.000010	70.500240	1.459380	.000720	2.203700
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6828.000000	102.000010	70.500240	1.454510	.000710	2.203700
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6829.000000	96.500000	70.500240	1.389580	.000760	2.203700
2.120000	2.650000	197.521000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6830.000000	44.000000	69.698620	.753470	.000720	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6831.000000	40.999990	69.698620	.718410	.000730	2.203700
2.120000	2.650000	62.244000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6832.000000	45.499990	69.698620	.773280	.000750	2.203700
2.120000	2.650000	95.543000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6833.000000	40.000000	69.698620	.703170	.000730	2.203700
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6834.000000	37.499990	69.698620	.673910	.000670	2.203700
2.120000	2.650000	38.955000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6835.000000	32.999990	69.698620	.633980	.000660	2.203700
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1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	68.000000
6836.000000	30.000000	69.649860	.564490	.000660	2.203700
2.120000	2.650000	40.480000	10.000000	.000000	.800000
1.500000	2.610000	3.100000	4.700000	5.300000	-1.000000
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6837.000000	29.000000	69.649860	.549550	.000710	2.203700
2.120000	2.650000	33.986000	10.000000	.000000	.800000
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Data of TEJO, A

6838.000000	6.800000	39.183326	.408337	.000510	.750000
2.214872	2.650000	87.553920	-1.000000	.000000	.390000
.550000	.970000	1.000000	1.880000	2.250000	-1.000000
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6839.000000	16.500000	54.773121	.613440	.000460	.750000
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.550000	.970000	1.000000	1.880000	2.250000	-1.000000
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6840.000000	24.900000	58.565714	.717143	.000440	.750000
2.214872	2.650000	59.527442	-1.000000	.000000	.390000
.550000	.970000	1.000000	1.880000	2.250000	-1.000000
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6841.000000	6.500000	28.747727	.626136	.000410	.750000
2.214872	2.650000	17.123077	-1.000000	.000000	.390000
.550000	.970000	1.000000	1.880000	2.250000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6842.000000	27.500000	40.333908	.833046	.000290	.750000
2.214872	2.650000	19.593939	-1.000000	.000000	.390000
.550000	.970000	1.000000	1.880000	2.250000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6843.000000	259.200000	217.546018	1.726991	.000290	.750000
2.214872	2.650000	7.136188	-1.000000	.000000	.390000
.550000	.970000	1.000000	1.880000	2.250000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6844.000000	14.400000	24.738824	.630588	.000290	.750000
2.214872	2.650000	53.736110	-1.000000	.000000	.390000
.550000	.970000	1.000000	1.880000	2.250000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6845.000000	28.300000	37.328348	.835826	.000290	.750000
2.214872	2.650000	12.422850	-1.000000	.000000	.390000
.550000	.970000	1.000000	1.880000	2.250000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6846.000000	15.300000	36.866169	.566915	.000300	.750000
2.214872	2.650000	6.004357	-1.000000	.000000	.390000
.550000	.970000	1.000000	1.880000	2.250000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6847.000000	107.500000	136.278526	.860737	.000300	.750000
2.214872	2.650000	70.436587	-1.000000	.000000	.390000
.550000	.970000	1.000000	1.880000	2.250000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6848.000000	151.800000	38.386863	3.626241	.000350	.900000
2.730159	2.650000	20.820597	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6849.000000	48.700000	83.118346	.940827	.000340	.900000
2.730159	2.650000	51.621491	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000

6850.000000	17.200000	51.355029	.572485	.000330	.900000
2.730159	2.650000	55.465115	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6851.000000	140.000000	36.095675	3.889663	.000310	.900000
2.730159	2.650000	7.407381	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6852.000000	148.300000	141.351280	1.324360	.000310	.900000
2.730159	2.650000	15.915486	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6853.000000	123.000000	34.438750	3.780625	.000260	.900000
2.730159	2.650000	27.649051	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6854.000000	118.000000	67.974990	2.012505	.000260	.900000
2.730159	2.650000	28.970338	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6855.000000	91.000000	69.081717	1.459141	.000260	.900000
2.730159	2.650000	81.635529	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6856.000000	16.400000	71.024448	.466037	.000260	.900000
2.730159	2.650000	50.199186	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6857.000000	11.200000	68.190503	.404748	.000260	.900000
2.730159	2.650000	99.690474	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6858.000000	135.700000	33.124356	4.437822	.000200	.900000
2.730159	2.650000	12.459101	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6859.000000	140.200000	67.407006	2.296497	.000200	.900000
2.730159	2.650000	9.438183	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6860.000000	89.900000	69.298649	1.350676	.000200	.900000
2.730159	2.650000	78.468296	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6861.000000	66.800000	69.298649	1.350676	.000200	.900000
2.730159	2.650000	38.348302	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000

6862.000000	49.400000	54.405910	1.255378	.000200	.900000
2.730159	2.650000	19.740890	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6863.000000	99.000000	19.582576	5.208712	.000260	.900000
2.730159	2.650000	19.665319	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6864.000000	140.900000	76.780160	2.109920	.000260	.900000
2.730159	2.650000	23.873196	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6865.000000	60.600000	69.834893	1.082553	.000260	.900000
2.730159	2.650000	135.356983	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6866.000000	49.500000	69.941125	1.029437	.000260	.900000
2.730159	2.650000	46.575756	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6867.000000	39.600000	65.062972	.946775	.000260	.900000
2.730159	2.650000	35.377945	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6868.000000	119.600000	29.073401	4.963300	.000170	.900000
2.730159	2.650000	3.382664	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6869.000000	127.800000	67.635423	2.182288	.000170	.900000
2.730159	2.650000	27.910015	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6870.000000	94.000000	69.044384	1.491794	.000170	.900000
2.730159	2.650000	49.804963	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6871.000000	87.900000	69.298649	1.350676	.000170	.900000
2.730159	2.650000	75.691314	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000
6872.000000	72.000000	66.922985	1.298508	.000170	.900000
2.730159	2.650000	40.927777	-1.000000	.000000	.350000
.700000	1.300000	1.500000	2.600000	3.100000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	1.000000	69.000000

6873.000000	790.000000	227.580000	3.100000	.000460	1.200000
2.130000	2.650000	61.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6874.000000	443.000000	226.450000	2.310000	.000370	1.200000
2.130000	2.650000	25.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6875.000000	460.000000	231.960000	2.290000	.000455	1.200000
2.130000	2.650000	35.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6876.000000	338.000000	208.400000	2.250000	.000330	1.200000
2.130000	2.650000	54.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6877.000000	823.000000	233.990000	3.250000	.000530	1.200000
2.130000	2.650000	66.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6878.000000	825.000000	221.860000	3.390000	.000460	1.200000
2.130000	2.650000	89.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6879.000000	577.000000	247.720000	2.610000	.000420	1.200000
2.130000	2.650000	72.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6880.000000	762.000000	229.280000	3.130000	.000490	1.200000
2.130000	2.650000	54.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6881.000000	776.000000	226.450000	3.240000	.000460	1.200000
2.130000	2.650000	66.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6882.000000	748.000000	229.540000	3.200000	.000490	1.200000
2.130000	2.650000	88.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6883.000000	568.000000	236.540000	2.740000	.000450	1.200000
2.130000	2.650000	72.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6884.000000	770.000000	221.550000	3.450000	.000400	1.200000
2.130000	2.650000	106.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

6885.000000	765.000000	221.190000	3.170000	.000400	1.200000
2.130000	2.650000	101.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6886.000000	777.000000	226.520000	3.350000	.000400	1.200000
2.130000	2.650000	23.000000	-1.000000	.000000	.650000
.850000	1.200000	1.400000	2.550000	3.000000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6887.000000	480.000000	251.970000	2.360000	.000070	1.160000
2.320000	2.650000	22.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6888.000000	690.000000	254.970000	3.050000	.000100	1.160000
2.320000	2.650000	29.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6889.000000	682.000000	243.000000	3.080000	.000100	1.160000
2.320000	2.650000	32.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6890.000000	899.000000	261.670000	3.400000	.000110	1.160000
2.320000	2.650000	16.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6891.000000	796.000000	279.630000	3.170000	.000110	1.160000
2.320000	2.650000	15.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6892.000000	798.000000	271.100000	3.240000	.000110	1.160000
2.320000	2.650000	30.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6893.000000	792.000000	286.490000	3.130000	.000110	1.160000
2.320000	2.650000	48.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6894.000000	772.000000	259.790000	3.220000	.000110	1.160000
2.320000	2.650000	49.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6895.000000	871.000000	242.930000	3.750000	.000180	1.160000
2.320000	2.650000	47.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6896.000000	814.000000	241.750000	3.540000	.000150	1.160000
2.320000	2.650000	60.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

6897.000000	783.000000	220.990000	3.620000	.000140	1.160000
2.320000	2.650000	59.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6898.000000	1667.000000	282.320000	4.900000	.000230	1.160000
2.320000	2.650000	37.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6899.000000	1659.000000	271.480000	4.640000	.000240	1.160000
2.320000	2.650000	34.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6900.000000	1457.000000	267.220000	4.600000	.000250	1.160000
2.320000	2.650000	40.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6901.000000	1022.000000	251.010000	3.940000	.000170	1.160000
2.320000	2.650000	54.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6902.000000	1053.000000	248.560000	3.920000	.000120	1.160000
2.320000	2.650000	124.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6903.000000	375.000000	224.070000	2.120000	.000270	1.160000
2.320000	2.650000	108.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6904.000000	793.000000	335.810000	3.180000	.000110	1.160000
2.320000	2.650000	123.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6905.000000	1025.000000	264.040000	3.760000	.000160	1.160000
2.320000	2.650000	69.000000	-1.000000	.000000	.630000
.850000	1.160000	1.600000	2.550000	2.900000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6906.000000	334.000000	284.710000	1.570000	.000210	.730000
2.040000	2.650000	23.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6907.000000	267.000000	335.800000	1.120000	.000235	.730000
2.040000	2.650000	23.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6908.000000	153.000000	294.210000	.910000	.000210	.730000
2.040000	2.650000	9.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

6909.000000	768.000000	325.530000	2.520000	.000225	.730000
2.040000	2.650000	113.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6910.000000	1188.000000	314.320000	3.340000	.000250	.730000
2.040000	2.650000	61.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6911.000000	1537.000000	314.270000	4.110000	.000245	.730000
2.040000	2.650000	113.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6912.000000	1338.000000	307.380000	3.760000	.000220	.730000
2.040000	2.650000	72.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6913.000000	990.000000	306.250000	3.220000	.000250	.730000
2.040000	2.650000	63.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6914.000000	941.000000	309.060000	3.060000	.000245	.730000
2.040000	2.650000	49.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6915.000000	938.000000	309.840000	3.080000	.000250	.730000
2.040000	2.650000	74.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6916.000000	673.000000	306.740000	2.690000	.000260	.730000
2.040000	2.650000	83.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6917.000000	583.000000	304.010000	2.380000	.000215	.730000
2.040000	2.650000	58.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6918.000000	1610.000000	313.180000	4.580000	.000240	.730000
2.040000	2.650000	163.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6919.000000	1673.000000	313.180000	4.580000	.000240	.730000
2.040000	2.650000	95.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6920.000000	1685.000000	313.180000	4.580000	.000240	.730000
2.040000	2.650000	126.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

6921.000000	1607.000000	311.880000	4.320000	.000235	.730000
2.040000	2.650000	80.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6922.000000	1492.000000	311.880000	4.320000	.000235	.730000
2.040000	2.650000	82.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6923.000000	1462.000000	315.300000	4.140000	.000245	.730000
2.040000	2.650000	82.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6924.000000	3400.000000	324.060000	6.150000	.000280	.730000
2.040000	2.650000	66.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6926.000000	2745.000000	308.150000	6.100000	.000235	.730000
2.040000	2.650000	96.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6927.000000	1750.000000	307.840000	4.630000	.000200	.730000
2.040000	2.650000	94.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6928.000000	1607.000000	307.840000	4.630000	.000200	.730000
2.040000	2.650000	90.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6929.000000	1675.000000	309.780000	4.560000	.000175	.730000
2.040000	2.650000	125.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6930.000000	1645.000000	309.920000	4.440000	.000175	.730000
2.040000	2.650000	115.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6931.000000	3150.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	55.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6932.000000	2895.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	7.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6933.000000	3475.000000	360.000000	6.380000	.000205	.730000
2.040000	2.650000	141.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

6934.000000	3506.000000	313.340000	6.620000	.000215	.730000
2.040000	2.650000	80.0000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6935.000000	3495.000000	325.140000	6.660000	.000240	.730000
2.040000	2.650000	74.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6936.000000	2240.000000	316.380000	5.470000	.000160	.730000
2.040000	2.650000	109.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6937.000000	2155.000000	318.200000	5.570000	.000170	.730000
2.040000	2.650000	140.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6938.000000	2236.000000	316.300000	5.510000	.000175	.730000
2.040000	2.650000	97.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6939.000000	2005.000000	315.880000	5.300000	.000155	.730000
2.040000	2.650000	92.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6940.000000	1555.000000	304.510000	4.590000	.000140	.730000
2.040000	2.650000	28.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6941.000000	1200.000000	333.210000	3.230000	.000315	.730000
2.040000	2.650000	146.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6942.000000	855.000000	288.050000	3.160000	.000190	.730000
2.040000	2.650000	74.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6943.000000	760.000000	288.050000	3.160000	.000190	.730000
2.040000	2.650000	67.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6944.000000	660.000000	293.280000	2.540000	.000210	.730000
2.040000	2.650000	89.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6945.000000	.585000	293.280000	2.540000	.000210	.730000
2.040000	2.650000	52.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

6946.000000	815.000000	377.480000	2.330000	.000215	.730000
2.040000	2.650000	140.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6947.000000	1012.000000	324.380000	3.360000	.000210	.730000
2.040000	2.650000	113.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6948.000000	1130.000000	324.380000	3.360000	.000210	.730000
2.040000	2.650000	975.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6949.000000	1090.000000	324.380000	3.360000	.000210	.730000
2.040000	2.650000	106.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6950.000000	1080.000000	324.380000	3.360000	.000210	.730000
2.040000	2.650000	1166.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6951.000000	1084.000000	324.380000	3.360000	.000210	.730000
2.040000	2.650000	914.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6952.000000	1128.000000	324.380000	3.360000	.000210	.730000
2.040000	2.650000	72.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6953.000000	905.000000	338.770000	2.830000	.000210	.730000
2.040000	2.650000	355.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6954.000000	905.000000	338.770000	2.830000	.000210	.730000
2.040000	2.650000	671.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6955.000000	813.000000	338.770000	2.830000	.000210	.730000
2.040000	2.650000	67.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6956.000000	482.000000	322.830000	2.030000	.000210	.730000
2.040000	2.650000	38.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6957.000000	442.000000	303.210000	1.930000	.000170	.730000
2.040000	2.650000	33.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

6958.000000	253.000000	313.320000	1.260000	.000145	.730000
2.040000	2.650000	15.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6959.000000	206.000000	309.500000	1.160000	.000110	.730000
2.040000	2.650000	9.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6960.000000	671.000000	295.030000	2.440000	.000220	.730000
2.040000	2.650000	63.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6961.000000	471.000000	337.340000	1.950000	.000190	.730000
2.040000	2.650000	39.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6962.000000	467.000000	328.320000	1.930000	.000195	.730000
2.040000	2.650000	14.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6963.000000	1300.000000	319.310000	3.730000	.000220	.730000
2.040000	2.650000	78.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6964.000000	1410.000000	302.520000	3.940000	.000240	.730000
2.040000	2.650000	69.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6965.000000	1425.000000	302.400000	4.060000	.000220	.730000
2.040000	2.650000	105.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6966.000000	1487.000000	305.570000	4.160000	.000180	.730000
2.040000	2.650000	124.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6967.000000	1576.000000	318.560000	4.360000	.000225	.730000
2.040000	2.650000	195.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6968.000000	1786.000000	318.560000	4.360000	.000225	.730000
2.040000	2.650000	175.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6969.000000	1947.000000	315.420000	4.950000	.000245	.730000
2.040000	2.650000	72.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

6970.000000	1961.000000	315.420000	4.950000	.000245	.730000
2.040000	2.650000	81.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6971.000000	1924.000000	316.740000	4.910000	.000215	.730000
2.040000	2.650000	275.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6972.000000	2360.000000	328.500000	5.430000	.000245	.730000
2.040000	2.650000	236.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6973.000000	2633.000000	328.500000	5.430000	.000245	.730000
2.040000	2.650000	97.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6974.000000	2660.000000	308.480000	5.880000	.000240	.730000
2.040000	2.650000	305.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6975.000000	2465.000000	308.480000	5.880000	.000240	.730000
2.040000	2.650000	269.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6976.000000	2745.000000	314.600000	5.870000	.000270	.730000
2.040000	2.650000	214.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6977.000000	2515.000000	314.600000	5.870000	.000270	.730000
2.040000	2.650000	250.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6978.000000	2485.000000	318.360000	5.620000	.000250	.730000
2.040000	2.650000	155.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6979.000000	3160.000000	324.060000	6.150000	.000000	0280
2.040000	2.650000	237.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6980.000000	3100.000000	308.150000	6.100000	.000235	.730000
2.040000	2.650000	513.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6981.000000	1595.000000	307.840000	4.630000	.000200	.730000
2.040000	2.650000	278.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

6982.000000	2540.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	227.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6983.000000	2365.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	265.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6984.000000	3150.000000	360.000000	6.380000	.000205	.730000
2.040000	2.650000	153.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6985.000000	1537.000000	314.270000	4.110000	.000245	.730000
2.040000	2.650000	980.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6986.000000	1532.000000	314.270000	4.110000	.000245	.730000
2.040000	2.650000	529.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6987.000000	1515.000000	314.270000	4.110000	.000245	.730000
2.040000	2.650000	396.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6988.000000	1497.000000	314.270000	4.110000	.000245	.730000
2.040000	2.650000	466.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6989.000000	1481.000000	314.270000	4.110000	.000245	.730000
2.040000	2.650000	483.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6990.000000	1366.000000	304.950000	3.760000	.000220	.730000
2.040000	2.650000	412.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6991.000000	943.000000	305.950000	3.220000	.000250	.730000
2.040000	2.650000	74.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6992.000000	951.000000	305.950000	3.220000	.000250	.730000
2.040000	2.650000	91.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6993.000000	975.000000	305.950000	3.220000	.000250	.730000
2.040000	2.650000	78.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

6994.000000	999.000000	305.950000	3.220000	.000250	.730000
2.040000	2.650000	69.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6995.000000	1008.000000	305.950000	3.220000	.000250	.730000
2.040000	2.650000	93.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6996.000000	930.000000	305.950000	3.220000	.000250	.730000
2.040000	2.650000	352.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6997.000000	941.000000	276.220000	3.060000	.000245	.730000
2.040000	2.650000	621.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6998.000000	1631.000000	311.350000	4.320000	.000235	.730000
2.040000	2.650000	66.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
6999.000000	2595.000000	311.350000	4.320000	.000235	.730000
2.040000	2.650000	49.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7000.000000	1571.000000	311.350000	4.320000	.000235	.730000
2.040000	2.650000	69.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7001.000000	1535.000000	311.350000	4.320000	.000235	.730000
2.040000	2.650000	116.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7002.000000	1785.000000	334.420000	4.360000	.000225	.730000
2.040000	2.650000	323.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7003.000000	1810.000000	334.420000	4.360000	.000225	.730000
2.040000	2.650000	185.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7004.000000	1817.000000	334.420000	4.360000	.000225	.730000
2.040000	2.650000	78.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7005.000000	1830.000000	334.420000	4.360000	.000225	.730000
2.040000	2.650000	121.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

7006.000000	1837.000000	334.420000	4.360000	.000225	.730000
2.040000	2.650000	148.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7007.000000	1852.000000	334.420000	4.360000	.000225	.730000
2.040000	2.650000	118.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7008.000000	1867.000000	334.420000	4.360000	.000225	.730000
2.040000	2.650000	72.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7009.000000	1947.000000	315.420000	4.950000	.000245	.730000
2.040000	2.650000	163.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7010.000000	1947.000000	315.420000	4.950000	.000245	.730000
2.040000	2.650000	50.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7011.000000	1947.000000	315.420000	4.950000	.000245	.730000
2.040000	2.650000	34.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7012.000000	1947.000000	315.420000	4.950000	.000245	.730000
2.040000	2.650000	192.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7013.000000	1950.000000	315.420000	4.950000	.000245	.730000
2.040000	2.650000	93.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7014.000000	2000.000000	315.420000	4.950000	.000245	.730000
2.040000	2.650000	62.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7015.000000	2445.000000	328.500000	5.430000	.000245	.730000
2.040000	2.650000	53.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7016.000000	2465.000000	328.500000	5.430000	.000245	.730000
2.040000	2.650000	114.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7017.000000	2485.000000	328.500000	5.430000	.000243	.730000
2.040000	2.650000	39.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

7018.000000	2405.000000	328.500000	5.430000	.000243	.730000
2.040000	2.650000	45.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7019.000000	2425.000000	328.500000	5.430000	.000243	.730000
2.040000	2.650000	73.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7020.000000	2450.000000	328.500000	5.430000	.000243	.730000
2.040000	2.650000	85.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7021.000000	2475.000000	328.500000	5.430000	.000243	.730000
2.040000	2.650000	70.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7022.000000	2495.000000	328.500000	5.430000	.000243	.730000
2.040000	2.650000	44.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7023.000000	2535.000000	328.500000	5.430000	.000243	.730000
2.040000	2.650000	102.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7024.000000	2575.000000	328.500000	5.430000	.000243	.730000
2.040000	2.650000	115.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7025.000000	2595.000000	328.500000	5.430000	.000243	.730000
2.040000	2.650000	91.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7026.000000	2615.000000	328.500000	5.430000	.000243	.730000
2.040000	2.650000	78.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7027.000000	2765.000000	314.600000	5.870000	.000270	.730000
2.040000	2.650000	44.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7028.000000	2720.000000	314.600000	5.870000	.000270	.730000
2.040000	2.650000	36.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7029.000000	2684.000000	314.600000	5.870000	.000270	.730000
2.040000	2.650000	27.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

7030.000000	2660.000000	314.600000	5.870000	.000270	.730000
2.040000	2.650000	112.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7031.000000	2590.000000	314.600000	5.870000	.000270	.730000
2.040000	2.650000	25.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7032.000000	2550.000000	314.600000	5.870000	.000270	.730000
2.040000	2.650000	91.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7033.000000	3070.000000	324.060000	6.150000	.000280	.730000
2.040000	2.650000	25.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7034.000000	3107.000000	324.060000	6.150000	.000280	.730000
2.040000	2.650000	35.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7035.000000	3137.000000	324.060000	6.150000	.000280	.730000
2.040000	2.650000	48.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7036.000000	3200.000000	324.060000	6.150000	.000280	.730000
2.040000	2.650000	39.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7037.000000	3350.000000	324.060000	6.150000	.000280	.730000
2.040000	2.650000	8.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7038.000000	3405.000000	324.060000	6.150000	.000280	.730000
2.040000	2.650000	5.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7039.000000	3460.000000	324.060000	6.150000	.000280	.730000
2.040000	2.650000	20.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7040.000000	3242.000000	324.060000	6.150000	.000280	.730000
2.040000	2.650000	85.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7041.000000	3220.000000	324.060000	6.150000	.000280	.730000
2.040000	2.650000	57.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

7042.000000	3155.000000	308.150000	6.100000	.000235	.730000
2.040000	2.650000	98.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7043.000000	3133.000000	308.150000	6.100000	.000235	.730000
2.040000	2.650000	45.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7044.000000	3112.000000	308.150000	6.100000	.000235	.730000
2.040000	2.650000	106.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7045.000000	3000.000000	308.150000	6.100000	.000235	.730000
2.040000	2.650000	21.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7046.000000	3075.000000	308.150000	6.100000	.000235	.730000
2.040000	2.650000	77.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7047.000000	3050.000000	308.150000	6.100000	.000235	.730000
2.040000	2.650000	57.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7048.000000	3030.000000	308.150000	6.100000	.000235	.730000
2.040000	2.650000	63.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7049.000000	2985.000000	308.150000	6.100000	.000280	.730000
2.040000	2.650000	68.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7050.000000	2517.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	319.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7051.000000	2500.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	123.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7052.000000	2470.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	115.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7053.000000	2430.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	109.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

7054.000000	2375.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	180.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7055.000000	2340.000000	314.560000	5.7200000	.000195	.730000
2.040000	2.650000	82.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7056.000000	2295.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	185.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7057.000000	2255.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	182.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7058.000000	2225.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	72.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7059.000000	2215.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	99.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7060.000000	2215.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	157.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7061.000000	2235.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	299.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7062.000000	2265.000000	314.560000	5.720000	.000195	.730000
2.040000	2.650000	315.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7063.000000	2305.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	155.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7064.000000	2375.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	306.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7065.000000	2440.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	132.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

7066.000000	2517.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	172.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7067.000000	2572.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	320.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7068.000000	2650.000000	316.810000	6.030000	.000215	.730000.
2.040000	2.650000	85.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7069.000000	2710.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	384.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7070.000000	2758.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	157.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7071.000000	2980.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	160.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7072.000000	2986.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	202.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7073.000000	3034.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	88.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7074.000000	3078.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	57.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7075.000000	3130.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	78.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7076.000000	3150.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	246.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7077.000000	3170.000000	316.810000	6.030000	.000215	.730000
2.040000	2.650000	167.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

7078.000000	3160.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	8.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7079.000000	3140.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	57.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7080.000000	3110.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	72.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7081.000000	3078.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	11.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7082.000000	2976.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	62.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7083.000000	2948.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	101.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7084.000000	2938.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	199.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7085.000000	2890.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	124.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7086.000000	2852.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	104.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7087.000000	2832.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	21.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7088.000000	2800.000000	317.520000	6.240000	.000200	.730000
2.040000	2.650000	52.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7089.000000	3150.000000	360.000000	6.380000	.000205	.730000
2.040000	2.650000	47.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

7090.000000	3190.000000	360.000000	6.380000	.000205	.730000
2.040000	2.650000	189.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7091.000000	3260.000000	360.000000	6.380000	.000205	.730000
2.040000	2.650000	57.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7092.000000	3290.000000	360.000000	6.380000	.000205	
2.040000	2.650000	46.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7093.000000	3386.000000	360.000000	6.380000	.000205	.730000
2.040000	2.650000	212.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7094.000000	3434.000000	360.000000	6.380000	.000205	.730000
2.040000	2.650000	44.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7095.000000	3353.000000	313.340000	6.620000	.000215	.730000
2.040000	2.650000	52.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7096.000000	3353.000000	313.340000	6.620000	.000215	.730000
2.040000	2.650000	111.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7097.000000	3353.000000	313.340000	6.620000	.000215	.730000
2.040000	2.650000	132.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7098.000000	3353.000000	313.340000	6.620000	.000215	.730000
2.040000	2.650000	322.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7099.000000	3365.000000	313.340000	6.620000	.000215	.730000
2.040000	2.650000	137.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7100.000000	3506.000000	317.890000	6.660000	.000240	.730000
2.040000	2.650000	120.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7101.000000	3506.000000	317.890000	6.660000	.000240	.730000
2.040000	2.650000	12.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

7102.000000	3506.000000	317.890000	6.660000	.000240	.730000
2.040000	2.650000	19.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7103.000000	3506.000000	317.890000	6.660000	.000240	.730000
2.040000	2.650000	21.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7104.000000	3506.000000	317.890000	6.660000	.000240	.730000
2.040000	2.650000	17.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7105.000000	3506.000000	317.890000	6.660000	.000240	.730000
2.040000	2.650000	65.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000
7106.000000	3506.000000	317.890000	6.660000	.000240	.730000
2.040000	2.650000	20.000000	-1.000000	.000000	.463000
.590000	.730000	.910000	1.489000	1.700000	-1.000000
-1.000000	-1.000000	-1.000000	-1.000000	.000000	70.000000

APPENDIX 4

SUMMARY OF PROCEDURES AND EQUIPMENT USED BY THE AUTHORS OF THE ADDED DATA SETS

SUMMARY OF PROCEDURES AND EQUIPMENT USED BY THE AUTHORS OF THE ADDED DATA SETS

1. ANNAMBHOTLA, SAYRE & LIVESEY

The main objective of the investigation carried out by ANNAMBHOTLA et al. 1972 was to explore various statistical methods for describing bedforms in large rivers with a view towards relating them to the resistance to flow. A reach of Missouri River near Omaha was selected as a study reach for obtaining field data of longitudinal bed profiles.

During the period of this investigation, the river width was approximately 183 m and the average longitudinal water surface slope about 1 m per 6.86 Km. Mean flow depths ranged from about 3.05 m to 4.27 m and mean flow velocities from about 1.07 m/s to 1.59 m/s. The median size of bed material was 0.2 mm. With a few exceptions the discharge of the river ranged from 840 m^3/s to 980 m^3/s. Water temperature ranged from about 4°C to about 27°C.

Bed profiles were obtained along three longitudinal lines that were located at the center and at approximately the quarter points of the cross-sections, about 46 m from either bank. The sensing unit for obtaining the longitudinal river bed profiles was a Model ES-1025 Bludworth Ultrasonic Depth Recorder mounted in a sounding boat. A detailed description of measurements and processing of bed profiles is offered by ANNAMBHOTLA et al. 1972. No reference is made on how discharge, cross section area (i. e. mean flow velocity, which was tabulated by the authors referred to) and slope were measured. So, in this new data set, mean flow depth was calculated assuming a 183 m top width, and the tabulated values of discharge and mean velocity which were presented by ANNAMBHOTLA et al. 1972. No concentration values are

available in this source.

2. HILL, SRINIVASAN & UNNY

In the study carried out by HILL et al. 1969, a method is proposed for predicting the replacement of a bed which is initially flat under high discharge and high sediment transport conditions by either dunes or ripples.

The experiments were conducted in a 37 m long recirculating flume, 0.61 m wide and 0.61 m deep. The flume was of concrete and the flume bed was laid level without any slope. This allowed the sediment bed to find its own equilibrium slope with each discharge. Three different grades of sand: very fine, fine, and medium, were used. The viscosity of the water was varied over a wide range by controlling the temperature between 21°C and 66°C.

The discharge was measured with a calibrated orifice meter located in the vertical portion of a delivery pipe directly connected to the flume. The water temperature was controlled by the provision of four immersion heaters. The water surface slope was measured as a drop in static head between two sections 9.8 m apart by means of Equibar pressure meter. The water surface and bed levels were recorded to obtain the average depth of flow.

The first three records of this data set are the mean values of the groups defined by narrow depth ranges, corresponding to the preliminary experiments carried out by HILL et al. 1969. The remaining 31 records correspond to the summary of experimental data for runs at different temperatures measured by the authors referred to. Bedforms were all classified as transition (BF=4).

3. KENNEDY & BROOKS

The main point to be solved by the study of KENNEDY and BROOKS 1965 was whether two or more different depths of flow are possible for a given discharge and slope.

Complete details and thorough discussions of apparatus, the techniques used in measuring the various quantities, and the procedures used in reducing the data were given by BROOKS 1958. The experiments were performed in a 0.85 m wide, 18.3 m long recirculating tilting flume. The mean depth of flow in the open channel was controlled by the amount of water in the system. The flume slope could be set at any desired value and easily adjusted during the course of a run. A point gage mounted on a carriage that moved along rails on the flume was used to measure the elevations of the water surface and sand bed relative to the flume. Water surface elevations were measured during the run at 1.22 m intervals along the flume, and bed elevations were measured after the pump had been stopped and the bed levelled in 1.22 m reaches with a special leveller. The discharge was measured with the Venturi meter located in the return pipe. To determine the total sediment transport rate, 12 or more samples of 1 liter each were siphoned through special samplers from the vertical section of the pipe above the pump in the flow circuit. The individual 1-liter samples were then passed through filter paper, and the sediment retained was dried and weighed. A sieve analysis was performed on the composite of all samples for each run. These analyses showed that the geometric mean sieve diameter, DM, was 0.142 mm, and the gradation coeficient was 1.38.

4. NORDIN, A

The study performed by NORDIN 1964 was based principally upon data from a reach of the Rio Grande near Bernalillo, New Mexico.

Measurements were carried out in two sections of the river, where permanent cables were installed. The observations were approximately concurrent, except for a few dates, when water discharge was measured only at the upstream section. For these dates, the cross-sectional area of the downstream section was determined by sounding, and the area so determined was used with discharge from the upstream section to obtain mean velocity.

Water-surface elevations were obtained from staff gages referred to a datum of mean sea level. Slopes of the energy gradients were determined as the drop in elevation of the energy gradients divided by the distance, 2511 m, between observation sections, and were assumed applicable to both of them. Suspended--sediment samples were collected with a US D-49 sampler, which collects samples from the water surface to about 0.1 m above stream bed. Usually, 3 to 15 samples of bed material were collected from the upper 2 to 5 cm of the bed; no reference is made to the sampler. The samples were analysed separately by sieves to define the median diameter and the gradation coeficient of bed material.

Bed-load transport was not measured. Sediment transport rates were computed by the modified Einstein method and by the method proposed by LAURSEN 1958; for several observations, transport rates were estimated using the Einstein bed-load function. As a consequence of these procedures, concentration of transported sediment was not included in LNEC's compilation.

5. NORDIN, B

In broad terms, the study by NORDIN 1971 was designed to investigate the statistical properties of stream bed profiles. Profiles from four different channels were selected for these analyses. Three of the channels were recirculating laboratory flumes. The other channel was Atrisco Lateral near Bernalillo, New Mexico.

The dimensions of the flumes were: 0.20 m wide by 9.15 m long, 0.61 m wide by 18.3 m long, and 2.44 m wide by 61 m long. Atrisco Lateral was approximately 16.75 m wide, and the profiles were obtained about midway in a straight reach 3657.6 m long. The median diameters of bed material ranged from 0.23 mm to 0.35 mm.

Values of flow parameters (mean depth, mean velocity, slope, water temperature) were tabulated in NORDIN 1971, no reference being made on the measuring equipment; six different discharges were selected for analysis.

Profiles of the bed elevations were obtained with a sonic depth sounder except for the smallest flume, where the profiles were traced on a stripchart from the plastic side-walls of the flume. Only longitudinal profiles were available for Atrisco Lateral and the smallest flume; for the other flumes, time records of bottom level at a section were available with the longitudinal profiles. The bedform dimensions were obtained by averaging the corresponding values of each group of bed profiles associated with different flow conditions.

This data set consists of eleven records with different values of discharge, depth, slope, and temperature, and the mean values of statistical data for heights and lenghts of bedforms.

6. WILLIAMS, B

WILLIAMS 1967 presented a study where a laboratory flume was used to analyse sediment transport phenomena in a series of runs with a coarse (1.35 mm) sand bed for three flow depths.

The test section of the flume was 15.85 m long and 0.305 m wide. Its slope was adjustable from horizontal to about 0.02 using chain hoists.

The discharge was read by a bend meter. This was a common pipe elbow with holes drilled through the wall at the inner and outer vertices of the pipe curvature. These holes were connected by tubing to a manometer, and the difference in pressure between the inside and the outside parts of the bend was a direct indication of discharge flowing through the elbow. The slope of the flume was determined by setting up a surveyor's level independent of the flume stucture and measuring the vertical drop in a known distance downstream. The slope of the bed (and water surface) relative to the flume rails was taken from the plotted profiles. Slope relative to flume rails and slope of flume rails themselves were combined to give the actual bed (and water surface) slope. Flow depths were obtained from these profiles. Sediment transport rate was measured by means of a collection box located downstream of the flume. To ensure representative samples, the collection period was allways long enough to allow at least several bedforms to move out of the flume and into the collection box. Bedform characteristics (type of bedform, wave-lengths, waveheights and celerities) were measured. Two or three small pieces of wood were individually timed for rate of movement as they floated along the water surface. This surface velocity was multiplied by 0.80 to provide a rough estimate of the mean flow velocity. The actual value of mean velocity was obtained by

dividing the discharge by cross-sectional area, based on depth as given in profiles. Material in the collection box and material left on the bed were sampled after the completion of each run. The samples were dried and sieved, providing the sediment-size characteristics.

7. MONDEGO

These data correspond to PORTUGAL file from DHL's compendium with discharge entries corrected and characteristic diameters added. So, in fact it does not correspond to the addition of new data.

The data presented in CUNHA 1969 for the period from October 1965 through June 1966 were collected as part of Baixo Mondego Programme dedicated to quantify the sediment transport and to analyse the relationships between this quantity and the parameters which characterize flow and bed material.

Two measuring stations were used, the main one in Coimbra at the upstream end of the stretch to be studied, i.e. about 40 Km from the river mouth, and the other at Vila Pouca, about 10 Km downstream.

Whereas data on the bed-load in the whole cross section of the river are obtained at Coimbra station, the other station at Vila Pouca covers one of the river branches alone.

At Coimbra the river has a width of about 185 m, which changes comparatively little with the water level, and the river bed has a slope of about 0.0008. The maximum river flow recorded during the observations was about 1200 m^3/s, which corresponds to a frequency of little less than once every two years.

At Vila Pouca station the river is about 70 m wide, the banks are almost vertical and the bed slope is about 0.00075. The

maximum recorded flow of about 200 m^3/s is practically the one that cannot be exceeded in this river branch without flooding the marginal fields.

The bed material granulometry was established by collecting a series of 65 samples along the river bed and its affluents. The two granulometric curves were obtained by taking the characteristic diameters of the samples collected in the neighbourhood of Coimbra and Vila Pouca sections. At Coimbra, D50 is 2.6 mm, and at Vila Pouca, D50 is 2.2 mm. For both sections the specific gravity is 2.64.

Limnographs were mounted in both stations and the flow was frequently measured with current meters. The longitudinal slope of the free surface was measured by means of two scales about 500 m apart that were read simultaneously. Once or twice a week, the cross-sectional profiles were traced by sounding.

The bed load was measured with an "Arnhem" (BTMA) instrument, developed at the Delft Hydraulic Laboratory, the calibration curve presented by VAN TIL 1956 having been used. Velocities were measured in points distributed in the river cross section, in five verticals at Coimbra and three at Vila Pouca. Ten measurements were successively carried out at each point and a mean was calculated in order to compensate the fluctuations of bed load, due to the bedforms in the river bed.

The suspended load was also measured at some points with US D-49 and US P-50 suspended-sediment samples developed in the United States by the Federal Inter-Agency Committee on Water Resources. According to these measurements the suspended load in Mondego River is comparatively small with respect to the bed load.

8. TEJO, A

Two cross sections were selected by FONSECA 1971 to measure hydraulic characteristics of flow, including sediment transport, in river Tagus near Santarém. One of them was Santarém itself, situated 350 m downstream of Ponte D. Luís, and the other, Porto de Courela, situated 2750 m upstream of Ponte D. Luís.

The observation periods for each cross section were not absolutely concurrent; in fact, at Santarém it went from March 1970 to January 1971, while at Porto de Courela it went from July 1970 to January 1971.

The first 10 records of this data set were measured at Porto de Courela and the remaining 25 at Santarém.

85 samples of bed material collected by tubular samplers along a 180 km long reach, allowed a complete characterization of the river bed material. Specific gravity was about 2.65. At Santarém the D50 is 0.9 mm, and at Porto de Courela it is 0.75 mm.

In each cross-section, the following routine observations were performed: water temperature, cross-section topography, point velocities, water surface slope, bed-load transport, and suspended sediment load. The adopted procedures were approximately the same as described previously about MONDEGO data.

9. TEJO, B

From 1971 to 1977, the hydraulic parameters of three coss--sections were measured (HENRIQUES 1982). These cross-sections were Omnias (near Santarém), Almourol (45 km upstream of Santarém), and Tramagal (15 km upstream of Almourol).

At Omnias the observation period went from February 1971 to

March 1977. 794 values of discharge, 685 values of bedload discharge, and 268 values of suspended load were measured. Only 200 observations were concurrent and were included in this data set. The value of D50 corresponding to the bed material was 0.73 mm.

Almourol section was studied from October 1972 to May 1977. The number of observations of discharge, bedload discharge, and suspended load were respectively 226, 150, and 58, 19 being concurrent. The median diameter of bed material was 1.16 mm.

Finally, in Tramagal section, the observations lasted from October 1972 to April 1977. 169 records of discharge were obtained along with 117 of bedload discharge and 35 of suspended load. Only 14 records were included for concurrency reasons. D50 of bed material was 1.2 mm.

The specific gravity of the bed material was about 2.65 for the three coss-sections. The river widths were basically the same and hardly changed with discharge, except at Omnias for values of discharge greater than about 4000 m^3/s.

The measuring equipment was the same as the equipment used in Mondego at Coimbra and Vila Pouca.

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