

• Supplementary File •

On the neutrality of two symmetric TSP solvers toward instance specification

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Appendix A Descriptive characterization

The following Tables present in a structured fashion the results obtained from solving 492 files with Concorde and Lin-Kernighan implementation from NEOS. These files are in fact five sTSP instances: romania2950, dsj1000, att532, rbu737 and E1k1. Each instance derived the same number of rotated files and reverted files, according to its dimension.

For example, the construction of the first files which derive from the sTSP instance dsj100 is described in Figure A1. The vertices are numbered from 1 in the initial list. Blocks with 25 vertices are iteratively moved at the end of the previous file.

Deriving the first two rotational files

vertices in initial file	1-25	26-50	51-75	76-100	...	951-975	976-1000
vertices in first file	26-50	51-75	76-100	...	951-975	976-1000	1-25
vertices in second file	51-75	76-100	...	951-975	976-1000	1-25	26-50

Deriving the first two reflectional-rotational files

vertices in initial file	1-25	26-50	51-75	76-100	...	951-975	976-1000
reflected file	1, 1000-977	976-952	951-927	926-902	...	51-27	26-2
vertices in first file	976-952	951-927	926-902	...	51-27	26-2	1, 1000-977
vertices in second file	951-927	926-902	...	51-27	26-2	1, 1000-977	976-952

Figure A1 Construction of the first files which derive from the sTSP instance dsj100

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Table A1 Descriptive characterization for the rotational files.

Instance	Characteristic	Concorde			Lin-Kernighan	
		Time(s)	Initial solution length(m)	Number of <i>bbodes</i>	Initial solution length(m)	Solution length(m)
romania2950	mean	2942	20366539	278	24704320	20373562
	standard dev	1338	13847	92	332381	10581
	range	6522	58791	506	1789062	59088
	min	987	20344125	103	23889114	20347630
	max	7509	20402916	609	25678176	20406718
dsj1000	mean	50	18671355	10	22700675	18718658
	standard dev	20	15031	5	0	15717
	range	90	74035	26	0	88371
	min	26	18660436	5	22700675	18663467
	max	115	18734471	31	22700675	18751838
att532	mean	15	27699	6	35725	27708
	standard dev	3	8	2	1325	13
	range	10	26	10	4304	53
	min	10	27686	3	34225	27686
	max	20	27712	13	38529	27739
rbu737	mean	22	3318	5	3892	3317
	standard dev	7	3	2	68	3
	range	31	11	8	258	12
	min	11	3314	3	3771	3314
	max	42	3325	11	4029	3326
E1k1	mean	234	23006766	75	26875598	23012687
	standard dev	47	12390	17	0	15675
	range	225	53343	64	0	60467
	min	132	22985695	45	26875598	22987959
	max	358	23039038	109	26875598	23048426

Table A2 Descriptive characterization for the reflected rotational files.

Instance	Characteristic	Concorde			Lin-Kernighan	
		Time(s)	Initial solution length(m)	Number of <i>bbodes</i>	Initial solution length(m)	Solution length(m)
romania2950	mean	2341	20370074	283	24706754	20375172
	standard dev	734	13404	97	289033	11221
	range	4149	63170	664	1870389	54657
	min	1215	20341940	125	23792033	20351691
	max	5364	20405110	789	25662422	20406348
dsj1000	mean	45	18669519	9	22700675	18718635
	standard dev	23	8987	4	0	16971
	range	102	42781	18	0	88205
	min	21	18660188	3	22700675	18661118
	max	123	18702969	21	22700675	18749323
att532	mean	15	27701	7	34988	27717
	standard dev	5	8	3	1025	21
	range	18	39	10	4174	95
	min	8	27686	3	33145	27693
	max	26	27725	13	37319	27788
rbu737	mean	20	3317	4.6	3887	3319
	standard dev	7	2	2	52	4
	range	30	8	6	192	13
	min	8	3314	3	3791	3316
	max	38	3322	9	3983	3329
E1k1	mean	227	23006359	73	26875598	23009172
	standard dev	51	11150	18	0	14673
	range	200	43268	88	0	61088
	min	140	22987848	41	26875598	22988954
	max	340	23031116	129	26875598	23050042