Results for instances from collection
`TeamFormation-QKP-2`

File Synthetic_TF_01000.txt

Property of graph	Value
Nodes (n)	1,000
Density (Δ)	13.4 %
Edges (m)	67,159

		Deviation from best OFV (%)								Running time (s)							
γ	Best OFV	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
2.5	31.9	**0.00**	32.21	5.14	5.40	7.01	—	**0.00**	**0.00**	**0.00**	2.1	5.5	2,291.0	220.0	3,600.0	7.3	182.0
5.0	57.6	**0.00**	36.14	9.26	—	9.23	—	**0.00**	**0.00**	**0.00**	4.5	5.3	3,600.0	459.8	3,600.0	10.2	325.0
10.0	104.5	0.05	23.69	9.58	—	4.40	—	**0.00**	**0.00**	**0.01**	8.8	8.1	3,600.0	784.6	3,600.0	11.1	506.0
25.0	229.6	0.07	10.29	4.78	—	0.53	—	**0.00**	0.10	**0.01**	19.9	8.8	3,600.0	1,206.4	3,600.0	32.8	3,600.0
50.0	418.1	0.02	1.91	0.69	—	0.24	—	**0.00**	0.03	**0.01**	32.4	11.2	3,600.0	1,229.8	3,600.0	26.5	3,600.0
75.0	573.0	**0.00**	1.02	0.17	—	0.01	—	**0.00**	**0.00**	**0.01**	40.9	9.5	3,600.0	819.8	3,600.0	19.6	1,295.0
Avg		0.02	17.54	4.94	—	3.57	—	**0.00**	0.02	**0.01**	18.1	8.1	3,381.8	786.7	3,600.0	17.9	1,584.7
Min		**0.00**	1.02	0.17	5.40	0.01	—	**0.00**	**0.00**	**0.00**	2.1	5.3	2,291.0	220.0	3,600.0	7.3	182.0
Max		0.07	36.14	9.58	—	9.23	—	**0.00**	0.10	**0.01**	40.9	11.2	3,600.0	1,229.8	3,600.0	32.8	3,600.0

QKBP is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	105
Running time in seconds for writing input file (t^{write})	0.1221
Running time in seconds for executing parametric cut procedure (t^{cut})	0.0940
Running time in seconds for reading result file (t^{read})	0.0107

File Synthetic_TF_02000.txt

Property of graph	Value
Nodes (n)	2,000
Density (Δ)	12.4 %
Edges (m)	247,696

		Deviation from best OFV (%)								Running time (s)							
γ	Best OFV	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
2.5	116.5	0.50	33.47	14.67	—	10.82	—	**0.00**	0.57	**0.03**	11.7	14.2	3,600.0	3,053.0	3,600.0	130.8	3,600.0
5.0	208.6	0.02	20.98	12.84	—	—	—	**0.00**	6.57	**0.03**	25.0	18.6	3,600.0	3,600.0	3,600.0	160.6	3,600.0
10.0	373.5	0.32	14.50	7.89	—	—	—	**0.00**	3.66	**0.03**	56.6	38.7	3,600.0	3,600.0	3,600.0	294.2	3,600.0
25.0	841.0	0.32	4.58	5.09	—	—	—	**0.00**	0.65	**0.06**	134.0	32.2	3,600.0	3,600.0	3,600.0	1,077.8	3,600.0
50.0	1,598.6	0.01	1.89	0.56	—	—	—	**0.00**	0.05	**0.04**	224.4	35.8	3,600.0	3,600.0	3,600.0	181.3	3,600.0
75.0	2,236.5	**0.00**	0.19	**0.00**	—	—	—	0.01	0.01	**0.06**	284.0	33.2	3,600.0	3,600.0	3,600.0	125.4	3,600.0
Avg		0.20	12.60	6.84	—	—	—	**0.00**	1.92	**0.04**	122.6	28.8	3,600.0	3,508.8	3,600.0	328.4	3,600.0
Min		**0.00**	0.19	**0.00**	—	10.82	—	**0.00**	0.01	**0.03**	11.7	14.2	3,600.0	3,053.0	3,600.0	125.4	3,600.0
Max		0.50	33.47	14.67	—	—	—	**0.01**	6.57	**0.06**	284.0	38.7	3,600.0	3,600.0	3,600.0	1,077.8	3,600.0

QKBP is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	85
Running time in seconds for writing input file (t^{write})	0.4466
Running time in seconds for executing parametric cut procedure (t^{cut})	0.2180
Running time in seconds for reading result file (t^{read})	0.0127

File Synthetic_TF_04000.txt

Property of graph	Value
Nodes (n)	4,000
Density (Δ)	12.7 %
Edges (m)	1,014,045

		Deviation from best OFV (%)								Running time (s)							
γ	Best OFV	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
2.5	391.5	0.03	46.81	39.31	—	—	—	**0.00**	3.14	**0.08**	106.7	78.0	3,600.0	3,600.0	3,600.0	1,118.1	3,602.0
5.0	702.4	**0.00**	28.31	16.59	—	—	—	65.26	2.08	**0.10**	231.1	101.3	3,600.0	3,600.0	3,600.0	3,600.7	3,602.0
10.0	1,285.4	**0.00**	10.73	2.26	—	—	—	94.74	0.03	**0.24**	510.4	149.2	3,600.0	3,600.0	3,600.0	3,601.9	3,602.0
25.0	3,149.7	**0.00**	2.06	0.71	—	—	—	85.76	0.41	**0.25**	1,170.5	224.9	3,600.0	3,600.0	3,600.0	3,602.0	3,602.0
50.0	6,177.8	**0.00**	0.48	0.21	—	—	—	**0.00**	0.07	**0.23**	1,921.0	216.2	3,600.0	3,600.0	3,600.0	2,994.2	3,602.0
75.0	8,717.6	**0.00**	0.09	0.07	—	—	—	0.01	0.01	**0.27**	2,389.0	189.0	3,600.0	3,600.0	3,600.0	1,647.9	3,602.0
Avg		**0.01**	14.75	9.86	—	—	—	40.96	0.96	**0.19**	1,054.8	159.8	3,600.0	3,600.0	3,600.0	2,760.8	3,602.0
Min		**0.00**	0.09	0.07	—	—	—	**0.00**	0.01	**0.08**	106.7	78.0	3,600.0	3,600.0	3,600.0	1,118.1	3,602.0
Max		**0.03**	46.81	39.31	—	—	—	94.74	3.14	**0.27**	2,389.0	224.9	3,600.0	3,600.0	3,600.0	3,602.0	3,602.0

QKBP is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	119
Running time in seconds for writing input file (t^{write})	1.6386
Running time in seconds for executing parametric cut procedure (t^{cut})	0.5620
Running time in seconds for reading result file (t^{read})	0.0186

File Synthetic_TF_06000.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	12.5 %
Edges (m)	2,257,990

		Deviation from best OFV (%)								Running time (s)							
γ	Best OFV	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
2.5	655.8	**0.00**	28.88	17.88	—	—	—	721.50	10.26	**0.20**	318.4	197.2	3,600.0	3,600.0	3,600.0	3,602.1	3,600.0
5.0	1,284.3	**0.00**	13.75	7.99	—	—	—	475.95	1.08	**0.19**	815.0	300.0	3,600.0	3,600.0	3,600.0	3,601.3	3,600.0
10.0	2,666.5	**0.00**	6.91	3.20	—	—	—	255.96	1.72	**0.39**	1,872.3	413.6	3,600.0	3,600.0	3,600.0	3,601.9	3,600.0
25.0	6,877.4	0.16	1.44	0.84	—	—	—	99.59	**0.00**	**0.55**	3,600.7	534.8	3,600.0	3,600.0	3,600.0	3,601.9	3,600.0
50.0	13,690.7	**0.00**	0.47	0.35	—	—	—	42.19	0.07	**0.53**	3,600.3	509.6	3,600.0	3,600.0	3,600.0	3,601.3	3,600.0
75.0	19,597.2	**0.00**	0.01	**0.00**	—	—	—	17.78	0.05	**0.64**	3,600.4	446.4	3,600.0	3,600.0	3,600.0	3,601.3	3,600.0
Avg		**0.03**	8.58	5.04	—	—	—	268.83	2.20	**0.42**	2,301.2	400.3	3,600.0	3,600.0	3,600.0	3,601.6	3,600.0
Min		**0.00**	0.01	**0.00**	—	—	—	17.78	**0.00**	**0.19**	318.4	197.2	3,600.0	3,600.0	3,600.0	3,601.3	3,600.0
Max		**0.16**	28.88	17.88	—	—	—	721.50	10.26	**0.64**	3,600.7	534.8	3,600.0	3,600.0	3,600.0	3,602.1	3,600.0

QKBP is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	97
Running time in seconds for writing input file (t^{write})	3.8608
Running time in seconds for executing parametric cut procedure (t^{cut})	1.0780
Running time in seconds for reading result file (t^{read})	0.0250

File Synthetic_TF_08000.txt

Property of graph	Value
Nodes (n)	8,000
Density (Δ)	12.6 %
Edges (m)	4,023,218

		Deviation from best OFV (%)								Running time (s)							
γ	Best OFV	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
2.5	1,228.3	**0.00**	33.13	33.86	—	—	—	604.32	3.15	**0.31**	755.6	382.0	3,600.0	3,600.0	3,600.0	3,604.3	3,600.0
5.0	2,327.9	**0.00**	20.79	7.89	—	—	—	446.50	1.92	**0.28**	1,826.8	493.5	3,600.0	3,600.0	3,600.0	3,602.2	3,600.0
10.0	4,702.1	**0.00**	7.76	3.05	—	—	—	290.23	0.31	**0.86**	3,600.4	724.8	3,600.0	3,600.0	3,600.0	3,602.2	3,600.0
25.0	12,082.6	**0.00**	1.72	0.58	—	—	—	119.78	0.11	**1.19**	3,600.0	930.5	3,600.0	3,600.0	3,600.0	3,603.2	3,600.0
50.0	24,278.8	**0.00**	0.24	0.07	—	—	—	45.40	0.12	**1.06**	3,600.3	945.6	3,600.0	3,600.0	3,600.0	3,602.8	3,600.0
75.0	34,905.1	**0.00**	0.04	0.03	—	—	—	18.93	0.07	**1.18**	3,600.5	829.8	3,600.0	3,600.0	3,600.0	3,602.0	3,600.0
Avg		**0.00**	10.61	7.58	—	—	—	254.19	0.95	**0.81**	2,830.6	717.7	3,600.0	3,600.0	3,600.0	3,602.8	3,600.0
Min		**0.00**	0.04	0.03	—	—	—	18.93	0.07	**0.28**	755.6	382.0	3,600.0	3,600.0	3,600.0	3,602.0	3,600.0
Max		**0.00**	33.13	33.86	—	—	—	604.32	3.15	**1.19**	3,600.5	945.6	3,600.0	3,600.0	3,600.0	3,604.3	3,600.0

QKBP is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	103
Running time in seconds for writing input file (t^{write})	7.1875
Running time in seconds for executing parametric cut procedure (t^{cut})	1.7650
Running time in seconds for reading result file (t^{read})	0.0310

File Synthetic_TF_10000.txt

Property of graph	Value
Nodes (n)	10,000
Density (Δ)	12.8 %
Edges (m)	6,383,021

		Deviation from best OFV (%)								Running time (s)							
γ	Best OFV	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	**QKBP**	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
2.5	1,827.9	**0.00**	33.38	29.30	—	—	—	1,058.22	10.15	**0.62**	1,581.0	716.9	3,600.0	3,600.0	3,600.0	3,603.5	3,600.0
5.0	3,518.4	**0.00**	16.48	9.23	—	—	—	435.64	3.96	**0.45**	3,600.1	877.6	3,600.0	3,600.0	3,600.0	3,603.5	3,600.0
10.0	7,107.6	**0.00**	5.22	1.01	—	—	—	245.85	0.46	**1.15**	3,600.6	1,082.8	3,600.0	3,600.0	3,600.0	3,603.5	3,600.0
25.0	18,590.7	**0.00**	0.89	0.04	—	—	—	113.32	0.26	**1.80**	3,600.5	1,448.8	3,600.0	3,600.0	3,600.0	3,606.7	3,600.0
50.0	37,621.3	**0.00**	0.19	0.04	—	—	—	43.85	0.30	**1.62**	3,600.9	1,559.1	3,600.0	3,600.0	3,600.0	3,603.5	3,600.0
75.0	54,050.1	**0.00**	0.01	0.01	—	—	—	17.58	0.11	**2.10**	3,600.1	1,339.4	3,600.0	3,600.0	3,600.0	3,603.6	3,600.0
Avg		**0.00**	9.36	6.60	—	—	—	319.08	2.54	**1.29**	3,263.9	1,170.8	3,600.0	3,600.0	3,600.0	3,604.0	3,600.0
Min		**0.00**	0.01	0.01	—	—	—	17.58	0.11	**0.45**	1,581.0	716.9	3,600.0	3,600.0	3,600.0	3,603.5	3,600.0
Max		**0.00**	33.38	29.30	—	—	—	1,058.22	10.15	**2.10**	3,600.9	1,559.1	3,600.0	3,600.0	3,600.0	3,606.7	3,600.0

QKBP is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	103
Running time in seconds for writing input file (t^{write})	11.1795
Running time in seconds for executing parametric cut procedure (t^{cut})	2.8900
Running time in seconds for reading result file (t^{read})	0.0373