Results for instances from collection
`TeamFormation-QKP-1`

File Bibsonomy.txt

Property of graph	Value
Nodes (n)	9,269
Density (Δ)	0.1 %
Edges (m)	30,711

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	673.1	0.07	132.45	inf	inf	**0.00**	3.59	**0.82**	120.2	120.0	120.0	5.9	120.0
5.0	973.0	0.01	94.33	inf	inf	**0.00**	**0.00**	**0.57**	120.0	120.0	120.0	3.1	7.0
10.0	1,407.1	**0.00**	94.53	inf	inf	**0.00**	3.74	**0.56**	120.0	120.0	120.0	6.5	120.0
25.0	2,284.4	**0.00**	56.56	inf	inf	**0.00**	0.32	**0.99**	121.1	120.0	120.0	5.4	120.0
50.0	3,221.1	0.05	38.24	inf	inf	**0.00**	**0.00**	**1.70**	120.9	120.0	120.0	4.8	13.0
75.0	3,780.2	0.01	25.30	inf	inf	**0.00**	0.34	**1.98**	122.7	120.0	120.0	2.8	120.0
90.0	3,957.9	**0.00**	11.23	inf	inf	**0.00**	0.09	2.21	122.0	120.0	120.0	**1.7**	120.0
95.0	3,986.5	**0.00**	3.51	inf	inf	**0.00**	0.02	2.10	124.7	120.0	120.0	**1.4**	120.0
Avg		0.02	57.02	inf	inf	**0.00**	1.01	**1.37**	121.5	120.0	120.0	3.9	92.5
Min		**0.00**	3.51	inf	inf	**0.00**	**0.00**	**0.56**	120.0	120.0	120.0	1.4	7.0
Max		0.07	132.45	inf	inf	**0.00**	3.74	**2.21**	124.7	120.0	120.0	6.5	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	120
Running time in seconds for writing input file (t^{write})	26.9
Running time in seconds for executing parametric cut procedure (t^{cut})	3.0
Running time in seconds for reading result file (t^{read})	0.1

File DBLP.txt

Property of graph	Value
Nodes (n)	7,159
Density (Δ)	0.1 %
Edges (m)	15,281

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	240.5	0.05	138.27	inf	inf	**0.00**	**0.00**	**0.44**	120.0	120.0	120.0	1.1	51.0
5.0	393.1	0.02	111.95	inf	inf	**0.00**	**0.00**	**0.42**	120.1	120.0	120.0	1.3	86.0
10.0	635.7	**0.00**	75.86	inf	inf	**0.00**	**0.00**	**0.34**	120.4	120.0	120.0	1.5	8.0
25.0	1,168.6	**0.00**	46.15	inf	inf	**0.00**	0.01	**0.52**	120.5	120.0	120.0	1.0	6.0
50.0	1,762.3	**0.00**	25.82	inf	inf	**0.00**	**0.00**	**0.93**	121.5	120.0	120.0	1.7	13.0
75.0	2,140.2	**0.00**	21.57	inf	inf	**0.00**	**0.00**	0.86	120.4	120.0	120.0	**0.8**	108.0
90.0	2,270.3	**0.00**	11.62	inf	inf	**0.00**	0.01	1.12	122.0	120.0	120.0	**0.6**	69.0
95.0	2,294.8	**0.00**	5.42	inf	inf	**0.00**	0.04	1.16	122.6	120.0	120.0	**0.5**	120.0
Avg		0.01	54.58	inf	inf	**0.00**	0.01	**0.72**	120.9	120.0	120.0	1.1	57.6
Min		**0.00**	5.42	inf	inf	**0.00**	**0.00**	**0.34**	120.0	120.0	120.0	0.5	6.0
Max		0.05	138.27	inf	inf	**0.00**	0.04	**1.16**	122.6	120.0	120.0	1.7	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	200
Running time in seconds for writing input file (t^{write})	20.5
Running time in seconds for executing parametric cut procedure (t^{cut})	2.3
Running time in seconds for reading result file (t^{read})	0.1

File IMDB.txt

Property of graph	Value
Nodes (n)	1,021
Density (Δ)	2.1 %
Edges (m)	11,224

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	21.6	0.17	0.17	inf	inf	**0.00**	**0.00**	**0.02**	2.4	120.0	120.0	5.2	46.0
5.0	43.4	0.66	5.31	inf	inf	**0.00**	**0.00**	**0.01**	4.4	120.0	120.0	1.7	18.0
10.0	82.4	**0.00**	36.60	inf	inf	**0.00**	**0.00**	**0.00**	9.2	120.0	120.0	1.6	2.0
25.0	169.8	**0.00**	40.31	inf	inf	**0.00**	**0.00**	**0.01**	22.5	120.0	120.0	2.9	29.0
50.0	257.0	0.01	6.45	inf	inf	**0.00**	0.01	**0.01**	45.1	120.0	120.0	1.8	24.0
75.0	292.5	**0.00**	3.07	inf	inf	**0.00**	0.01	**0.01**	64.4	120.0	120.0	0.6	4.0
90.0	296.6	**0.00**	1.79	inf	inf	**0.00**	**0.00**	**0.01**	73.2	120.0	120.0	0.3	1.0
95.0	297.1	**0.00**	1.66	inf	inf	**0.00**	**0.00**	**0.01**	75.1	120.0	120.0	0.3	1.0
Avg		0.11	11.92	inf	inf	**0.00**	0.00	**0.01**	37.0	120.0	120.0	1.8	15.6
Min		**0.00**	0.17	inf	inf	**0.00**	**0.00**	**0.00**	2.4	120.0	120.0	0.3	1.0
Max		0.66	40.31	inf	inf	**0.00**	0.01	**0.02**	75.1	120.0	120.0	5.2	46.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	148
Running time in seconds for writing input file (t^{write})	3.0
Running time in seconds for executing parametric cut procedure (t^{cut})	0.4
Running time in seconds for reading result file (t^{read})	0.0

File StackOverflow.txt

Property of graph	Value
Nodes (n)	8,834
Density (Δ)	0.2 %
Edges (m)	62,277

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	111.4	**0.00**	0.98	inf	inf	1.83	1.23	**0.71**	120.2	120.0	120.0	120.1	120.0
5.0	214.9	0.03	0.59	inf	inf	**0.00**	0.96	**0.44**	120.3	120.0	120.0	15.3	120.0
10.0	384.2	0.04	1.01	inf	inf	**0.00**	0.88	**0.53**	120.7	120.0	120.0	27.6	120.0
25.0	721.5	**0.00**	0.87	inf	inf	**0.00**	**0.00**	**0.78**	120.7	120.0	120.0	9.9	68.0
50.0	1,005.9	0.01	1.46	inf	inf	**0.00**	**0.00**	**1.56**	120.1	120.0	120.0	8.5	34.0
75.0	1,131.1	**0.00**	1.29	inf	inf	**0.00**	0.36	**1.69**	122.3	120.0	120.0	3.5	120.0
90.0	1,158.2	**0.00**	1.27	inf	inf	**0.00**	**0.00**	**2.15**	122.6	120.0	120.0	2.9	5.0
95.0	1,161.7	**0.00**	1.22	inf	inf	**0.00**	0.01	**2.13**	124.0	120.0	120.0	3.0	36.0
Avg		**0.01**	1.09	inf	inf	0.23	0.43	**1.25**	121.4	120.0	120.0	23.9	77.9
Min		**0.00**	0.59	inf	inf	**0.00**	**0.00**	**0.44**	120.1	120.0	120.0	2.9	5.0
Max		**0.04**	1.46	inf	inf	1.83	1.23	**2.15**	124.0	120.0	120.0	120.1	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	87
Running time in seconds for writing input file (t^{write})	25.7
Running time in seconds for executing parametric cut procedure (t^{cut})	2.9
Running time in seconds for reading result file (t^{read})	0.1

File Synthetic_01.txt

Property of graph	Value
Nodes (n)	7,000
Density (Δ)	0.1 %
Edges (m)	37,120

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	251.0	0.07	83.57	inf	inf	**0.00**	0.09	**0.29**	120.1	120.0	120.0	4.9	120.0
5.0	414.5	**0.00**	72.06	inf	inf	**0.00**	6.58	**0.30**	120.1	120.0	120.0	4.5	120.0
10.0	667.6	0.01	62.87	inf	inf	**0.00**	**0.00**	**0.33**	120.3	120.0	120.0	3.4	26.0
25.0	1,205.6	**0.00**	34.44	inf	inf	**0.00**	1.29	**0.56**	120.5	120.0	120.0	8.7	120.0
50.0	1,816.6	0.02	12.71	inf	inf	**0.00**	**0.00**	**0.75**	120.1	120.0	120.0	8.9	34.0
75.0	2,220.2	**0.00**	3.70	inf	inf	0.01	0.01	**0.96**	121.1	120.0	120.0	4.1	19.0
90.0	2,359.3	**0.00**	0.97	inf	inf	**0.00**	0.01	**1.04**	121.4	120.0	120.0	2.0	120.0
95.0	2,383.5	**0.00**	0.58	inf	inf	**0.00**	0.01	**1.06**	120.8	120.0	120.0	1.5	120.0
Avg		0.01	33.86	inf	inf	**0.00**	1.00	**0.66**	120.6	120.0	120.0	4.8	84.9
Min		**0.00**	0.58	inf	inf	**0.00**	**0.00**	**0.29**	120.1	120.0	120.0	1.5	19.0
Max		0.07	83.57	inf	inf	**0.01**	6.58	**1.06**	121.4	120.0	120.0	8.9	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	160
Running time in seconds for writing input file (t^{write})	20.1
Running time in seconds for executing parametric cut procedure (t^{cut})	2.3
Running time in seconds for reading result file (t^{read})	0.1

File Synthetic_02.txt

Property of graph	Value
Nodes (n)	7,000
Density (Δ)	0.1 %
Edges (m)	36,061

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	279.4	**0.00**	113.35	inf	inf	**0.00**	**0.00**	**0.32**	120.0	120.0	120.0	4.8	120.0
5.0	471.4	**0.00**	100.93	inf	inf	**0.00**	6.69	**0.42**	120.1	120.0	120.0	4.6	120.0
10.0	776.2	0.01	78.58	inf	inf	**0.00**	3.00	**0.37**	120.1	120.0	120.0	5.2	120.0
25.0	1,407.8	0.01	43.83	inf	inf	**0.00**	0.01	**0.69**	120.2	120.0	120.0	8.1	39.0
50.0	2,068.3	0.01	16.03	inf	inf	**0.00**	**0.00**	**0.74**	121.1	120.0	120.0	7.0	25.0
75.0	2,482.8	**0.00**	5.21	inf	inf	0.01	0.06	**0.97**	120.1	120.0	120.0	4.2	120.0
90.0	2,628.3	**0.00**	1.98	inf	inf	**0.00**	0.01	**1.02**	120.9	120.0	120.0	2.2	120.0
95.0	2,653.4	**0.00**	1.03	inf	inf	**0.00**	0.01	**1.06**	120.3	120.0	120.0	1.5	13.0
Avg		0.00	45.12	inf	inf	**0.00**	1.22	**0.70**	120.3	120.0	120.0	4.7	84.6
Min		**0.00**	1.03	inf	inf	**0.00**	**0.00**	**0.32**	120.0	120.0	120.0	1.5	13.0
Max		**0.01**	113.35	inf	inf	**0.01**	6.69	**1.06**	121.1	120.0	120.0	8.1	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	160
Running time in seconds for writing input file (t^{write})	20.0
Running time in seconds for executing parametric cut procedure (t^{cut})	2.2
Running time in seconds for reading result file (t^{read})	0.1

File Synthetic_03.txt

Property of graph	Value
Nodes (n)	7,000
Density (Δ)	0.1 %
Edges (m)	35,714

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	278.0	0.01	100.79	inf	inf	**0.00**	**0.00**	**0.41**	120.0	120.0	120.0	2.6	14.0
5.0	457.3	0.02	75.56	inf	inf	**0.00**	**0.00**	**0.26**	120.2	120.0	120.0	5.0	5.0
10.0	735.4	**0.00**	52.95	inf	inf	0.01	**0.00**	**0.40**	120.2	120.0	120.0	5.7	23.0
25.0	1,309.5	**0.00**	32.97	inf	inf	**0.00**	0.01	**0.47**	120.2	120.0	120.0	8.1	32.0
50.0	1,922.7	**0.00**	15.41	inf	inf	0.01	0.01	**0.81**	120.3	120.0	120.0	8.8	28.0
75.0	2,335.4	**0.00**	5.11	inf	inf	**0.00**	**0.00**	**0.98**	121.5	120.0	120.0	3.9	23.0
90.0	2,478.1	**0.00**	2.02	inf	inf	**0.00**	0.02	**1.03**	121.7	120.0	120.0	2.1	120.0
95.0	2,501.3	**0.00**	1.15	inf	inf	0.01	0.01	**1.05**	120.2	120.0	120.0	1.4	11.0
Avg		**0.00**	35.75	inf	inf	**0.00**	0.01	**0.67**	120.5	120.0	120.0	4.7	32.0
Min		**0.00**	1.15	inf	inf	**0.00**	**0.00**	**0.26**	120.0	120.0	120.0	1.4	5.0
Max		0.02	100.79	inf	inf	**0.01**	0.02	**1.05**	121.7	120.0	120.0	8.8	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	197
Running time in seconds for writing input file (t^{write})	20.2
Running time in seconds for executing parametric cut procedure (t^{cut})	2.2
Running time in seconds for reading result file (t^{read})	0.1

File Synthetic_04.txt

Property of graph	Value
Nodes (n)	7,000
Density (Δ)	0.1 %
Edges (m)	35,232

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	239.7	0.03	85.25	inf	inf	**0.00**	0.07	**0.32**	120.0	120.0	120.0	4.6	120.0
5.0	419.4	**0.00**	83.86	inf	inf	**0.00**	**0.00**	**0.01**	120.0	120.0	120.0	3.9	6.0
10.0	695.5	0.01	68.17	inf	inf	**0.00**	4.33	**0.34**	120.2	120.0	120.0	5.5	120.0
25.0	1,264.1	**0.00**	33.95	inf	inf	**0.00**	**0.00**	**0.48**	120.6	120.0	120.0	7.9	27.0
50.0	1,872.0	**0.00**	13.70	inf	inf	**0.00**	0.49	**0.80**	120.8	120.0	120.0	7.9	120.0
75.0	2,266.2	**0.00**	5.61	inf	inf	**0.00**	**0.00**	**0.88**	120.5	120.0	120.0	3.7	21.0
90.0	2,402.1	**0.00**	1.12	inf	inf	**0.00**	0.01	**0.97**	120.7	120.0	120.0	2.2	25.0
95.0	2,423.7	**0.00**	0.33	inf	inf	**0.00**	0.01	**1.01**	120.4	120.0	120.0	1.4	9.0
Avg		0.01	36.50	inf	inf	**0.00**	0.61	**0.60**	120.4	120.0	120.0	4.6	56.0
Min		**0.00**	0.33	inf	inf	**0.00**	**0.00**	**0.01**	120.0	120.0	120.0	1.4	6.0
Max		0.03	85.25	inf	inf	**0.00**	4.33	**1.01**	120.8	120.0	120.0	7.9	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	174
Running time in seconds for writing input file (t^{write})	20.2
Running time in seconds for executing parametric cut procedure (t^{cut})	2.2
Running time in seconds for reading result file (t^{read})	0.1

File Synthetic_05.txt

Property of graph	Value
Nodes (n)	7,000
Density (Δ)	0.1 %
Edges (m)	37,894

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	274.4	0.02	85.24	inf	inf	**0.00**	7.40	**0.14**	120.1	120.0	120.0	3.2	120.0
5.0	457.4	**0.00**	68.77	inf	inf	**0.00**	0.07	**0.30**	120.1	120.0	120.0	5.8	120.0
10.0	728.0	0.01	52.85	inf	inf	**0.00**	**0.00**	**0.38**	120.2	120.0	120.0	4.8	32.0
25.0	1,306.8	**0.00**	26.41	inf	inf	**0.00**	**0.00**	**0.46**	121.0	120.0	120.0	8.8	64.0
50.0	1,915.7	0.01	10.91	inf	inf	**0.00**	0.24	**0.91**	120.4	120.0	120.0	7.8	120.0
75.0	2,315.2	**0.00**	4.42	inf	inf	0.01	**0.00**	**0.97**	121.4	120.0	120.0	3.9	41.0
90.0	2,452.8	**0.00**	1.86	inf	inf	**0.00**	**0.00**	**1.06**	120.4	120.0	120.0	2.0	8.0
95.0	2,475.4	**0.00**	0.16	inf	inf	**0.00**	0.01	**1.07**	122.2	120.0	120.0	1.5	120.0
Avg		0.01	31.33	inf	inf	**0.00**	0.97	**0.66**	120.7	120.0	120.0	4.7	78.1
Min		**0.00**	0.16	inf	inf	**0.00**	**0.00**	**0.14**	120.1	120.0	120.0	1.5	8.0
Max		0.02	85.24	inf	inf	**0.01**	7.40	**1.07**	122.2	120.0	120.0	8.8	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	189
Running time in seconds for writing input file (t^{write})	19.9
Running time in seconds for executing parametric cut procedure (t^{cut})	2.3
Running time in seconds for reading result file (t^{read})	0.1

File Synthetic_06.txt

Property of graph	Value
Nodes (n)	7,000
Density (Δ)	0.1 %
Edges (m)	35,072

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	240.1	0.04	126.27	inf	inf	**0.00**	8.73	**0.35**	120.1	120.0	120.0	2.8	120.0
5.0	409.7	0.01	108.23	inf	inf	**0.00**	7.98	**0.36**	120.1	120.0	120.0	4.4	120.0
10.0	673.7	**0.00**	78.86	inf	inf	**0.00**	**0.00**	**0.50**	120.1	120.0	120.0	4.1	25.0
25.0	1,237.8	**0.00**	43.13	inf	inf	0.01	**0.00**	**0.59**	120.5	120.0	120.0	8.6	72.0
50.0	1,851.3	**0.00**	14.86	inf	inf	**0.00**	0.01	**0.75**	121.2	120.0	120.0	6.6	60.0
75.0	2,242.1	**0.00**	4.75	inf	inf	**0.00**	**0.00**	**0.94**	121.0	120.0	120.0	3.5	21.0
90.0	2,376.1	**0.00**	1.35	inf	inf	**0.00**	0.01	**1.02**	121.1	120.0	120.0	1.8	104.0
95.0	2,397.8	**0.00**	0.09	inf	inf	**0.00**	**0.00**	**1.06**	121.0	120.0	120.0	1.2	3.0
Avg		0.01	47.19	inf	inf	**0.00**	2.09	**0.70**	120.6	120.0	120.0	4.1	65.6
Min		**0.00**	0.09	inf	inf	**0.00**	**0.00**	**0.35**	120.1	120.0	120.0	1.2	3.0
Max		0.04	126.27	inf	inf	**0.01**	8.73	**1.06**	121.2	120.0	120.0	8.6	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	184
Running time in seconds for writing input file (t^{write})	19.8
Running time in seconds for executing parametric cut procedure (t^{cut})	2.2
Running time in seconds for reading result file (t^{read})	0.1

File Synthetic_07.txt

Property of graph	Value
Nodes (n)	7,000
Density (Δ)	0.1 %
Edges (m)	36,840

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	285.5	**0.00**	107.65	inf	inf	**0.00**	0.04	**0.32**	120.0	120.0	120.0	3.2	120.0
5.0	481.0	0.01	103.40	inf	inf	**0.00**	3.82	**0.32**	120.0	120.0	120.0	4.1	120.0
10.0	777.4	0.02	67.03	inf	inf	**0.00**	0.01	**0.34**	120.3	120.0	120.0	4.3	120.0
25.0	1,386.8	**0.00**	38.95	inf	inf	**0.00**	**0.00**	**0.55**	120.2	120.0	120.0	7.1	36.0
50.0	2,022.2	**0.00**	15.48	inf	inf	**0.00**	0.01	**0.73**	121.4	120.0	120.0	10.2	63.0
75.0	2,429.1	**0.00**	5.03	inf	inf	**0.00**	**0.00**	**0.95**	121.3	120.0	120.0	3.9	23.0
90.0	2,571.3	**0.00**	0.49	inf	inf	**0.00**	0.01	**1.02**	120.3	120.0	120.0	2.3	120.0
95.0	2,595.0	**0.00**	0.12	inf	inf	**0.00**	**0.00**	**1.05**	120.6	120.0	120.0	1.4	4.0
Avg		0.00	42.27	inf	inf	**0.00**	0.49	**0.66**	120.5	120.0	120.0	4.6	75.8
Min		**0.00**	0.12	inf	inf	**0.00**	**0.00**	**0.32**	120.0	120.0	120.0	1.4	4.0
Max		0.02	107.65	inf	inf	**0.00**	3.82	**1.05**	121.4	120.0	120.0	10.2	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	173
Running time in seconds for writing input file (t^{write})	19.8
Running time in seconds for executing parametric cut procedure (t^{cut})	2.2
Running time in seconds for reading result file (t^{read})	0.1

File Synthetic_08.txt

Property of graph	Value
Nodes (n)	7,000
Density (Δ)	0.2 %
Edges (m)	38,673

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	272.1	0.01	114.71	inf	inf	**0.00**	0.05	**0.24**	120.1	120.0	120.0	3.9	120.0
5.0	444.2	0.01	91.94	inf	inf	**0.00**	**0.00**	**0.33**	120.1	120.0	120.0	2.9	19.0
10.0	705.7	0.01	65.56	inf	inf	**0.00**	0.01	**0.41**	120.3	120.0	120.0	10.3	120.0
25.0	1,271.7	0.01	31.97	inf	inf	**0.00**	**0.00**	**0.63**	120.7	120.0	120.0	7.4	57.0
50.0	1,885.9	**0.00**	11.56	inf	inf	**0.00**	0.28	**0.78**	121.4	120.0	120.0	8.5	120.0
75.0	2,289.4	**0.00**	3.79	inf	inf	**0.00**	0.01	**1.03**	120.8	120.0	120.0	4.3	21.0
90.0	2,429.8	**0.00**	1.12	inf	inf	**0.00**	0.01	**1.04**	120.5	120.0	120.0	2.3	120.0
95.0	2,453.5	**0.00**	0.68	inf	inf	**0.00**	0.01	**1.06**	121.7	120.0	120.0	1.5	13.0
Avg		0.01	40.17	inf	inf	**0.00**	0.05	**0.69**	120.7	120.0	120.0	5.1	73.8
Min		**0.00**	0.68	inf	inf	**0.00**	**0.00**	**0.24**	120.1	120.0	120.0	1.5	13.0
Max		0.01	114.71	inf	inf	**0.00**	0.28	**1.06**	121.7	120.0	120.0	10.3	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	200
Running time in seconds for writing input file (t^{write})	19.8
Running time in seconds for executing parametric cut procedure (t^{cut})	2.3
Running time in seconds for reading result file (t^{read})	0.1

File Synthetic_09.txt

Property of graph	Value
Nodes (n)	7,000
Density (Δ)	0.1 %
Edges (m)	35,055

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	251.5	**0.00**	112.81	inf	inf	**0.00**	**0.00**	**0.01**	120.1	120.0	120.0	3.0	5.0
5.0	429.6	**0.00**	89.27	inf	inf	**0.00**	0.03	**0.33**	120.1	120.0	120.0	3.7	120.0
10.0	731.4	0.01	68.41	inf	inf	**0.00**	4.08	**0.42**	120.1	120.0	120.0	3.2	120.0
25.0	1,337.4	0.01	36.65	inf	inf	**0.00**	**0.00**	**0.60**	120.4	120.0	120.0	7.4	24.0
50.0	1,981.9	0.01	17.14	inf	inf	**0.00**	**0.00**	**0.97**	121.4	120.0	120.0	9.7	45.0
75.0	2,391.2	**0.00**	6.28	inf	inf	**0.00**	0.04	**0.98**	121.3	120.0	120.0	3.6	120.0
90.0	2,527.0	**0.00**	1.77	inf	inf	0.01	0.01	**1.04**	120.9	120.0	120.0	1.9	120.0
95.0	2,549.7	**0.00**	0.75	inf	inf	**0.00**	0.02	**1.06**	120.7	120.0	120.0	1.2	120.0
Avg		0.00	41.63	inf	inf	**0.00**	0.52	**0.67**	120.6	120.0	120.0	4.2	84.2
Min		**0.00**	0.75	inf	inf	**0.00**	**0.00**	**0.01**	120.1	120.0	120.0	1.2	5.0
Max		**0.01**	112.81	inf	inf	**0.01**	4.08	**1.06**	121.4	120.0	120.0	9.7	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	183
Running time in seconds for writing input file (t^{write})	20.0
Running time in seconds for executing parametric cut procedure (t^{cut})	2.3
Running time in seconds for reading result file (t^{read})	0.1

File Synthetic_10.txt

Property of graph	Value
Nodes (n)	7,000
Density (Δ)	0.1 %
Edges (m)	37,554

		Deviation from best OFV (%)						Running time (s)					
γ	Best OFV	QKBP*	GR	DP	QK	Gurobi	Hexaly	QKBP*	GR	DP	QK	Gurobi	Hexaly
2.5	248.5	0.10	106.01	inf	inf	**0.00**	**0.00**	**0.31**	120.0	120.0	120.0	4.2	35.0
5.0	429.9	**0.00**	92.65	inf	inf	**0.00**	**0.00**	**0.23**	120.1	120.0	120.0	3.8	9.0
10.0	715.5	**0.00**	62.96	inf	inf	**0.00**	0.01	**0.35**	120.3	120.0	120.0	8.2	39.0
25.0	1,306.1	**0.00**	30.61	inf	inf	0.01	1.28	**0.48**	120.5	120.0	120.0	8.4	120.0
50.0	1,940.0	**0.00**	11.19	inf	inf	**0.00**	0.34	**0.75**	121.3	120.0	120.0	7.8	120.0
75.0	2,344.1	**0.00**	3.90	inf	inf	**0.00**	**0.00**	**0.96**	121.7	120.0	120.0	4.2	23.0
90.0	2,485.5	**0.00**	0.98	inf	inf	**0.00**	**0.00**	**1.09**	122.0	120.0	120.0	2.4	9.0
95.0	2,509.4	**0.00**	0.20	inf	inf	0.01	0.01	**1.07**	121.5	120.0	120.0	1.5	11.0
Avg		0.01	38.56	inf	inf	**0.00**	0.21	**0.66**	120.9	120.0	120.0	5.1	45.8
Min		**0.00**	0.20	inf	inf	**0.00**	**0.00**	**0.23**	120.0	120.0	120.0	1.5	9.0
Max		0.10	106.01	inf	inf	**0.01**	1.28	**1.09**	122.0	120.0	120.0	8.4	120.0

*The contribution in this paper

QKBP-specific information	Value
Number of breakpoints	145
Running time in seconds for writing input file (t^{write})	20.4
Running time in seconds for executing parametric cut procedure (t^{cut})	2.3
Running time in seconds for reading result file (t^{read})	0.1