Results for instances from collection ${\tt QKPGroupIII}$

File $5000_{-}100_{-}1.txt$

Property of graph	Value
Nodes (n) Density (Δ)	5,000 100.0 %
Edges (m)	12,502,500

				В	unning	g time ((s)										
γ	Best OFV QKE	ВP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
34.6	214,425,886.0 0.	.02	0.02	0.00	_	_	_	_	28.45	2.42	120.5	161.8	120.0	120.0	120.0	122.5	120.0
Avg	0.	.02	0.02	0.00	_	_	_	_	28.45	2.42	120.5	161.8	120.0	120.0	120.0	122.5	120.0
Min			0.02	0.00	_	_	_	_	28.45			161.8				122.5	120.0
Max	0.	.02	0.02	0.00	_	_	_	_	28.45	2.42	120.5	161.8	120.0	120.0	120.0	122.5	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	21.3783
Running time in seconds for executing parametric cut procedure (t^{cut})	3.8750
Running time in seconds for reading result file (t^{read})	0.0220

File 5000_100_2.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	100.0 %
Edges (m)	12,502,500

		Running time (s)														
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
3.3	18,783,132.0 0.05	0.03	0.00	_	_	_	_	20.97	1.79	120.2	161.5	120.0	120.0	120.0	122.5	120.0
Avg		0.03	0.00	_	_	_	_	20.97			161.5				122.5	
Min Max		$0.03 \\ 0.03$	$0.00 \\ 0.00$	_	_	_	_	$20.97 \\ 20.97$			$161.5 \\ 161.5$					$120.0 \\ 120.0$

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	23.5301
Running time in seconds for executing parametric cut procedure (t^{cut})	4.9370
Running time in seconds for reading result file (t^{read})	0.0234

File 5000_100_3.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	100.0 %
Edges (m)	12,502,500

Deviation from best OFV (%)												R	tunning	g time ((s)		
γ	Best OFV QF	KBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
2.0	10,784,650.0	0.00	0.00	0.00	_	_	_	_	21.98	1.81	120.1	161.1	120.0	120.0	120.0	122.5	120.0
Avg		0.00	0.00	0.00	_	_	_	_	21.98	1.81	120.1	161.1	120.0	120.0	120.0	122.5	120.0
Min Max			0.00 0.00	0.00	_	_	_	_	$21.98 \\ 21.98$			$161.1 \\ 161.1$				122.5 122.5	120.0 120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	22.5997
Running time in seconds for executing parametric cut procedure (t^{cut})	4.0630
Running time in seconds for reading result file (t^{read})	0.0227
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File 5000_100_4.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	100.0 %
Edges (m)	12,502,500

				В	unning	g time ((s)									
γ	Best OFV QKBF	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
25.3	160,539,947.0 0.02	0.01	0.00	_	_	_	_	27.84	2.03	120.2	161.5	120.0	120.0	120.0	122.5	125.0
Avg	0.02	0.01	0.00	_	_	_	_	27.84	2.03	120.2	161.5	120.0	120.0	120.0	122.5	125.0
Min		0.01	0.00	_	_	_	_	27.84			161.5				122.5	125.0
Max	0.02	0.01	0.00	_	_	_	_	27.84	2.03	120.2	161.5	120.0	120.0	120.0	122.5	125.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	21.8441
Running time in seconds for executing parametric cut procedure (t^{cut})	3.8910
Running time in seconds for reading result file (t^{read})	0.0229

File 5000_100_5.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	100.0 %
Edges (m)	12,502,500

				R	unning	time ((s)									
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
5.8	33,166,430.0 0.04	0.03	0.00	_	_	_	_	23.48	1.82	120.3	160.9	120.0	120.0	120.0	122.2	120.0
Avg	0.04	0.03	0.00	_	_	_	_	23.48	1.82	120.3	160.9	120.0	120.0	120.0	122.2	120.0
Min	0.04	0.03	0.00		_	_	_	23.48	1.82	120.3	160.9	120.0	120.0	120.0	122.2	120.0
Max	0.04	0.03	0.00	_	_	_	_	23.48	1.82	120.3	160.9	120.0	120.0	120.0	122.2	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	22.5170
Running time in seconds for executing parametric cut procedure (t^{cut})	3.7810
Running time in seconds for reading result file (t^{read})	0.0221

File 5000_25_1.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	25.0 %
Edges (m)	3,125,543

				R	tunning	time ((s)									
γ	Best OFV QKB	P RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
15.4	23,667,450.0 0.	0.00	0.00	_	_	_	_	9.45	1.98	120.4	144.3	120.0	120.0	120.0	120.5	120.0
Avg	0.	0.00	0.00	_	_	_	_	9.45	1.98	120.4	144.3	120.0	120.0	120.0	120.5	120.0
Min	0.	0.00	0.00	_	_	_	_	9.45	1.98	120.4	144.3	120.0	120.0	120.0	120.5	120.0
Max	0.	0.00	0.00	_	_	_	_	9.45	1.98	120.4	144.3	120.0	120.0	120.0	120.5	120.0

QKBP-specific information	Value
Number of breakpoints	3
Running time in seconds for writing input file (t^{write})	5.5710
Running time in seconds for executing parametric cut procedure (t^{cut})	1.2810
Running time in seconds for reading result file (t^{read})	0.0236

$File~5000_25_2.txt$

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	25.0 %
Edges (m)	3,125,009

				F	unning	g time ((s)									
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
24.8	37,914,560.0 0.03	0.02	0.00	_	_	_	_	9.76	2.02	120.6	144.6	120.0	120.0	120.0	120.5	120.0
Avg	0.03	0.02	0.00	_	_	_	_	9.76	2.02	120.6	144.6	120.0	120.0	120.0	120.5	120.0
Min	0.03	0.02	0.00	_	_	_	_	9.76	2.02	120.6	144.6	120.0	120.0	120.0	120.5	120.0
Max	0.03	0.02	0.00	_	_	_	_	9.76	2.02	120.6	144.6	120.0	120.0	120.0	120.5	120.0

QKBP-specific information	Value
Number of breakpoints	3
Running time in seconds for writing input file (t^{write})	5.3461
Running time in seconds for executing parametric cut procedure (t^{cut})	1.2820
Running time in seconds for reading result file (t^{read})	0.0244

File 5000_25_3.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	25.0 %
Edges (m)	3,124,942

				R	tunning	time ((s)									
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
44.0	68,295,820.0 0.00	0.00	0.00	_	_	_	_	8.75	2.05	120.8	147.6	120.0	120.0	120.0	120.5	120.0
Avg	0.00	0.00	0.00		_	_	_	8.75	2.05	120.8	147.6	120.0	120.0	120.0	120.5	120.0
Min Max	0.00	0.00	0.00	_	_	_	_	8.75 8.75			147.6 147.6				120.5 120.5	$120.0 \\ 120.0$

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	5.2438
Running time in seconds for executing parametric cut procedure (t^{cut})	1.2190
Running time in seconds for reading result file (t^{read})	0.0220

File 5000_25_4.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	25.0 %
Edges (m)	3,122,245

Deviation from best OFV (%)											F	unning	time ((s)		
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
22.0	33,866,053.0 0.02	0.01	0.00	_	_	_	_	9.97	1.97	120.3	146.1	120.0	120.0	120.0	120.5	120.0
Avg	0.02	0.01	0.00	_	_	_	_	9.97	1.97	120.3	146.1	120.0	120.0	120.0	120.5	120.0
Min	0.02	0.01	0.00	_	_	_	_	9.97	1.97	120.3	146.1	120.0	120.0	120.0	120.5	120.0
Max	0.02	0.01	0.00	_	_	_	_	9.97	1.97	120.3	146.1	120.0	120.0	120.0	120.5	120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	6.1559
Running time in seconds for executing parametric cut procedure (t^{cut})	1.2650
Running time in seconds for reading result file (t^{read})	0.0255

File 5000_25_5.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	25.0 %
Edges (m)	3,123,843

Deviation from best OFV (%)												Б	tunning	time (s)		
γ	Best OFV \mid	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
6.4	9,533,115.0	0.08	0.05	0.00	_	_	_	_	8.72	1.91	120.3	144.8	120.0	120.0	120.0	120.5	120.0
Avg		0.08	0.05	0.00	_	_	_		8.72	1.91	120.3	144.8	120.0	120.0	120.0	120.5	120.0
Min		0.08	0.05	0.00	_	_	_	_	8.72	1.91	120.3	144.8	120.0	120.0	120.0	120.5	120.0
Max		0.08	0.05	0.00	_	_	_	_	8.72	1.91	120.3	144.8	120.0	120.0	120.0	120.5	120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	5.3498
Running time in seconds for executing parametric cut procedure (t^{cut})	1.2820
Running time in seconds for reading result file (t^{read})	0.0240

File 5000_50_1.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	50.0 %
Edges (m)	6,250,303

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
15.0	45,194,685.0 0.03	0.02	0.00	_	_	_	_	12.69	1.89	120.5	150.9	120.0	120.0	120.0	121.0	120.0
Avg	0.03	0.02	0.00	_	_	_	_	12.69	1.89	120.5	150.9	120.0	120.0	120.0	121.0	120.0
Min	0.03	0.02	0.00	_	_	_	_	12.69	1.89	120.5	150.9	120.0	120.0	120.0	121.0	120.0
Max	0.03	0.02	0.00	_	_	_	_	12.69	1.89	120.5	150.9	120.0	120.0	120.0	121.0	120.0

Value
1
10.6583
(t^{cut}) 2.0940
0.0221

File 5000_50_2.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	50.0 %
Edges (m)	6,252,576

		Running time (s)														
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
28.4	88,355,678.0 0.01	0.01	0.00	_	_	_	_	14.74	2.06	120.1	151.6	120.0	120.0	120.0	121.0	120.0
Avg	0.01	0.01	0.00		_	_	_	14.74	2.06	120.1	151.6	120.0	120.0	120.0	121.0	120.0
Min	0.01	0.01	0.00	_	_	_	_	14.74	2.06	120.1	151.6	120.0	120.0	120.0	121.0	120.0
Max	0.01	0.01	0.00	_	_	_	_	14.74	2.06	120.1	151.6	120.0	120.0	120.0	121.0	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	10.7666
Running time in seconds for executing parametric cut procedure (t^{cut})	2.1880
Running time in seconds for reading result file (t^{read})	0.0223

File 5000_50_3.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	50.0 %
Edges (m)	6,251,983

Deviation from best OFV (%)											В	tunning	g time ((s)		
γ	Best OFV $\mid \mathbf{QKBP} \mid$	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
48.3	152,447,303.0 0.02	0.01	0.00	_	_	_	_	12.42	2.02	121.0	152.0	120.0	120.0	120.0	121.0	120.0
Avg	0.02	0.01	0.00	_	_	_	_	12.42	2.02	121.0	152.0	120.0	120.0	120.0	121.0	120.0
Min	0.02	0.01	0.00	_	_	_	_	12.42	2.02	121.0	152.0	120.0	120.0	120.0	121.0	120.0
Max	0.02	0.01	0.00	_	_	_	_	12.42	2.02	121.0	152.0	120.0	120.0	120.0	121.0	120.0

QKBP-specific information	Value
Number of breakpoints	3
Running time in seconds for writing input file (t^{write})	11.4350
Running time in seconds for executing parametric cut procedure (t^{cut})	2.1090
Running time in seconds for reading result file (t^{read})	0.0234

File 5000_50_4.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	50.0 %
Edges (m)	6,251,140

Deviation from best OFV (%)											В	unning	g time ((s)		
γ	Best OFV $\mid \overline{\mathbf{QKBP}}$	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
54.7	171,000,228.0 0.02	0.02	0.00	_	_	_	_	11.63	2.08	120.6	152.5	120.0	120.0	120.0	121.0	120.0
Avg Min		$0.02 \\ 0.02$	0.00			_	_	11.63 11.63		120.6 120.6	152.5 152.5				121.0 121.0	120.0 120.0
Max		0.02	0.00	_	_	_	_	11.63		120.6						120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	10.5055
Running time in seconds for executing parametric cut procedure (t	cut) 2.2030
Running time in seconds for reading result file (t^{read})	0.0224

File 5000_50_5.txt

Property of graph	Valu
Nodes (n)	5,000
Density (Δ)	50.0 %
Edges (m)	6,251,33

Deviation from best OFV (%)												F	tunning	g time ((s)		
γ	Best OFV \mid	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
0.5	1,187,339.0	0.00	0.00	0.00	_	_	_	_	13.47	1.92	120.0	151.1	120.0	120.0	120.0	121.0	120.0
Avg		0.00	0.00	0.00	_	_	_	_	13.47	1.92	120.0	151.1	120.0	120.0	120.0	121.0	120.0
Min Max			0.00 0.00		_	_	_	_	13.47 13.47		120.0	$151.1 \\ 151.1$		120.0		121.0 121.0	120.0 120.0

Value
2
11.9541
2.0780
0.0265

File 5000_75_1.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	75.0 %
Edges (m)	9,380,302

Deviation from best OFV (%)											F	unning	time ((s)		
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
6.2	28,170,819.0 0.07	0.06	0.00	_	_	_	_	16.62	2.33	120.0	156.6	120.0	120.0	120.0	121.8	120.0
Avg Min	0.07 0.07	0.06 0.06	0.00	_	_	_	_	16.62 16.62		120.0 120.0			120.0 120.0		121.8 121.8	120.0 120.0
Max	0.07	0.06	0.00	_	_	_	_	16.62	2.33	120.0	156.6	120.0	120.0	120.0	121.8	120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	17.1091
Running time in seconds for executing parametric cut procedure (t	^{cut}) 3.0630
Running time in seconds for reading result file (t^{read})	0.0234

File 5000_75_2.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	75.0 %
Edges (m)	9,374,347

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
41.7	195,434,758.0 0.01	0.01	0.00	_	_	_	_	19.74	2.08	120.2	157.2	120.0	120.0	120.0	121.6	120.0
Avg	0.01	0.01	0.00		_	_	_	19.74	2.08	120.2	157.2	120.0	120.0	120.0	121.6	120.0
Min Max		$0.01 \\ 0.01$	0.00 0.00	_	_	_	_	19.74 19.74			157.2 157.2				121.6 121.6	

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	17.2032
Running time in seconds for executing parametric cut procedure (t^{cut})	2.9530
Running time in seconds for reading result file (t^{read})	0.0233

File 5000_75_3.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	75.0 %
Edges (m)	9,378,119

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
14.1	64,324,704.0 0.04	0.03	0.00	_	_	_	_	18.51	2.17	120.2	156.8	120.0	120.0	120.0	121.6	120.0
Avg Min Max	0.04	$0.03 \\ 0.03 \\ 0.03$	0.00 0.00 0.00	_	_	_	_	18.51 18.51 18.51	2.17	120.2	156.8 156.8 156.8	120.0	120.0	120.0	121.6 121.6 121.6	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	16.8487
Running time in seconds for executing parametric cut procedure (t^{cut})	3.0780
Running time in seconds for reading result file (t^{read})	0.0231
	<u> </u>

File 5000_75_4.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	75.0 %
Edges (m)	9,374,448

	Running time (s)
γ Best OFV $\overline{\mathbf{QKBP}}$ RG IHEA LDP DP QK Gurob	$\overline{\mathbf{QKBP}}$ RG IHEA LDP DP QK Gurobi Hexaly
53.0 247,348,595.0 0.00 0.01 0.00 — — —	- 17.98 2.14 120.4 156.6 120.0 120.0 120.0 121.9 120.0
Avg 0.00 0.01 0.00	- 17.98 2.14 120.4 156.6 120.0 120.0 120.0 121.9 120.0
Min 0.00 0.01 0.00	- 17.98 2.14 120.4 156.6 120.0 120.0 120.0 121.9 120.0 - 17.98 2.14 120.4 156.6 120.0 120.0 120.0 121.9 120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	17.3749
Running time in seconds for executing parametric cut procedure (t^{cut})	3.1880
Running time in seconds for reading result file (t^{read})	0.0222

File 5000_75_5.txt

Property of graph	Value
Nodes (n)	5,000
Density (Δ)	75.0 %
Edges (m)	9,376,079

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
10.0	46,462,740.0 0.07	0.07	0.00	_	_	_	_	19.07	2.06	120.3	157.9	120.0	120.0	120.0	121.9	120.0
Avg	0.07	0.07	0.00	_	_	_	_	19.07	2.06	120.3	157.9	120.0	120.0	120.0	121.9	120.0
Min	0.07	0.07	0.00	_	_	_	_	19.07	2.06	120.3	157.9	120.0	120.0	120.0	121.9	120.0
Max	0.07	0.07	0.00	_	_	_	_	19.07	2.06	120.3	157.9	120.0	120.0	120.0	121.9	120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	17.1617
Running time in seconds for executing parametric cut procedure (t^{cl}	^{1t}) 3.5310
Running time in seconds for reading result file (t^{read})	0.0221

File 6000_100_1.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	100.0 %
Edges (m)	18,003,000

				В	tunning	g time ((s)									
γ	Best OFV QKB	P RO	HEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
32.3	292,257,056.0 0.0	1 0.0	0.00	_	_	_	_	43.65	3.23	120.4	181.0	120.0	120.0	120.0	123.4	120.0
Avg	0.0	1 0.0	0.00	_	_	_	_	43.65	3.23	120.4	181.0	120.0	120.0	120.0	123.4	120.0
Min	0.0	1 0.0	0.00	_	_	_	_	43.65	3.23	120.4	181.0	120.0	120.0	120.0	123.4	120.0
Max	0.0	1 0.0	0.00	_	_	_	_	43.65	3.23	120.4	181.0	120.0	120.0	120.0	123.4	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	33.8271
Running time in seconds for executing parametric cut procedure ((t^{cut}) 5.5470
Running time in seconds for reading result file (t^{read})	0.0261

File 6000_100_2.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	100.0 %
Edges (m)	18,003,000

				В	unning	g time (s)									
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
24.9	219,787,724.0 0.03	0.03	0.00	_	_	_	_	40.86	2.89	120.7	178.0	120.0	120.0	120.0	123.1	120.0
Avg	0.03	0.03	0.00	_	_	_	_	40.86	2.89	120.7	178.0	120.0	120.0	120.0	123.1	120.0
Min	0.03	0.03	0.00	_	_	_	_	40.86	2.89	120.7	178.0	120.0	120.0	120.0	123.1	120.0
Max	0.03	0.03	0.00	_	_	_	_	40.86	2.89	120.7	178.0	120.0	120.0	120.0	123.1	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	34.3525
Running time in seconds for executing parametric cut procedure (t^{cut})	5.4380
Running time in seconds for reading result file (t^{read})	0.0261

File 6000_100_3.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	100.0 %
Edges (m)	18,003,000

Deviation from best OFV (%)												В	unning	g time ((s)		
γ	Best OFV QKE	ВP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
41.8	376,967,122.0 0.	.02	0.02	0.00	_	_	_	_	42.15	2.78	121.1	179.5	120.0	120.0	120.0	123.7	120.0
Avg	0.	.02	0.02	0.00	_	_	_	_	42.15	2.78	121.1	179.5	120.0	120.0	120.0	123.7	120.0
Min	0.	.02	0.02	0.00	_	_	_	_	42.15	2.78	121.1	179.5	120.0	120.0	120.0	123.7	120.0
Max	0.	.02	0.02	0.00	_	_	_	_	42.15	2.78	121.1	179.5	120.0	120.0	120.0	123.7	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	35.8545
Running time in seconds for executing parametric cut procedure (t ^{cut})	5.6720
Running time in seconds for reading result file (t^{read})	0.0248

File 6000_100_4.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	100.0 %
Edges (m)	18,003,000

Deviation from best OFV (%)											R	unning	g time ((s)		
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
39.6	355,609,720.0 0.00	0.00	0.00	_	_	_	_	41.77	2.90	120.5	183.7	120.0	120.0	120.0	123.2	120.0
Avg	0.00	0.00	0.00	_	_	_	_	41.77	2.90	120.5	183.7	120.0	120.0	120.0	123.2	120.0
Min		0.00		_	_	_	_	41.77			183.7				123.2	120.0
Min Max		$0.00 \\ 0.00$			_	_	_	$41.77 \ 41.77$			183.7 183.7				123.2 123.2	12 12

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	33.9983
Running time in seconds for executing parametric cut procedure (t^{cut})	7.8910
Running time in seconds for reading result file (t^{read})	0.0250

File 6000_100_5.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	100.0 %
Edges (m)	18,003,000

				В	unning	g time ((s)									
γ	Best OFV $\mid \mathbf{QKBP} \mid$	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
75.8	686,364,195.0 0.01	0.01	0.00	_	_	_	_	30.08	2.75	121.5	180.0	120.0	120.0	120.0	123.1	120.0
Avg	0.01	0.01	0.00	_	_	_	_	30.08	2.75	121.5	180.0	120.0	120.0	120.0	123.1	120.0
Min	0.01	0.01	0.00	_	_		_	30.08	2.75	121.5	180.0	120.0	120.0	120.0	123.1	120.0
Max	0.01	0.01	0.00	_	_	_	_	30.08	2.75	121.5	180.0	120.0	120.0	120.0	123.1	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	32.9167
Running time in seconds for executing parametric cut procedure (t^{cut})	7.1100
Running time in seconds for reading result file (t^{read})	0.0245

$File~6000_25_1.txt$

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	25.0 %
Edges (m)	4,499,169

				R	tunning	time ((s)									
γ	Best OFV $ \overline{\mathbf{QKBP}} $	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
31.3	69,832,542.0 0.00	0.00	0.00	_	_	_	_	12.21	2.74	120.8	156.5	120.0	120.0	120.0	120.8	120.0
Avg	0.00	0.00	0.00	_	_	_	_	12.21	2.74	120.8	156.5	120.0	120.0	120.0	120.8	120.0
Min Max		0.00 0.00		_	_	_	_	$12.21 \\ 12.21$		120.8	$156.5 \\ 156.5$				120.8 120.8	$120.0 \\ 120.0$

QKBP-specific information	Value
Number of breakpoints	3
Running time in seconds for writing input file (t^{write})	7.7736
Running time in seconds for executing parametric cut procedure (t ^{cut})	1.7660
Running time in seconds for reading result file (t^{read})	0.0237
	<u> </u>

File 6000_25_2.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	25.0 %
Edges (m)	4,500,583

Deviation from best OFV (%)												В	tunning	time ((s)		
γ	Best OFV \mid	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
1.8	3,697,236.0	0.20	0.10	0.00	_	_	_	_	10.66	2.87	120.0	157.5	120.0	120.0	120.0	120.8	120.0
Avg Min		0.20	0.10	0.00	_		_	_	10.66	2.87	120.0	157.5	120.0	120.0	120.0	120.8	120.0
Min		0.20	0.10	0.00	_	_	_	_	10.66	2.87	120.0	157.5	120.0	120.0	120.0	120.8	120.0
Max		0.20	0.10	0.00	_	_	_	_	10.66	2.87	120.0	157.5	120.0	120.0	120.0	120.8	120.0

QKBP-specific information	Value
Number of breakpoints	3
Running time in seconds for writing input file (t^{write})	8.0732
Running time in seconds for executing parametric cut procedure (t^{cut})	1.7190
Running time in seconds for reading result file (t^{read})	0.0245

File 6000_25_3.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	25.0 %
Edges (m)	4,499,027

				R	unning	time ((s)									
γ	Best OFV $\mid \mathbf{QKBP} \mid$	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
35.6	79,300,092.0 0.00	0.00	0.00	_	_	_	_	12.32	3.29	120.3	158.3	120.0	120.0	120.0	120.8	120.0
Avg Min Max	0.00	0.00 0.00 0.00	0.00 0.00 0.00	_	_	_	_	12.32 12.32 12.32	3.29	120.3	158.3 158.3 158.3	120.0	120.0	120.0	120.8 120.8 120.8	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	8.0256
Running time in seconds for executing parametric cut procedure (t^{cut})	1.7500
Running time in seconds for reading result file (t^{read})	0.0244

File 6000_25_4.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	25.0 %
Edges (m)	4,498,972

				В	unning	g time ((s)									
γ	Best OFV QKBF	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
84.4	191,531,304.0 0.02	0.02	0.00	_	_	_	_	2.83	2.98	121.2	157.0	120.0	120.0	120.0	120.8	120.0
Avg	0.02	0.02	0.00	_	_	_	_	2.83	2.98	121.2	157.0	120.0	120.0	120.0	120.8	120.0
Min	0.02	0.02	0.00	_	_	_	_	2.83	2.98	121.2	157.0	120.0	120.0	120.0	120.8	120.0
Max	0.02	0.02	0.00	_	_	_	_	2.83	2.98	121.2	157.0	120.0	120.0	120.0	120.8	120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	8.0331
Running time in seconds for executing parametric cut procedure (t^{cut})	1.7660
Running time in seconds for reading result file (t^{read})	0.0242

File 6000_25_5.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	25.0 %
Edges (m)	4,498,349

				R	unning	time ((s)									
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
16.1	36,121,510.0 0.03	0.02	0.00	_	_	_	_	10.67	3.07	120.7	159.7	120.0	120.0	120.0	120.7	120.0
Avg	0.03	0.02	0.00	_	_	_	_	10.67	3.07	120.7	159.7	120.0	120.0	120.0	120.7	120.0
Min	0.03	0.02	0.00	_	_	_	_	10.67	3.07	120.7	159.7	120.0	120.0	120.0	120.7	120.0
Max	0.03	0.02	0.00	_	_	_	_	10.67	3.07	120.7	159.7	120.0	120.0	120.0	120.7	120.0

Qk	XBP-specific information	Value
	mber of breakpoints	2
Ru	nning time in seconds for writing input file (t^{write})	8.0049
Ru	nning time in seconds for executing parametric cut procedure (t^{cut})	1.7030
Ru	nning time in seconds for reading result file (t^{read})	0.0252

File 6000_50_1.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	50.0 %
Edges (m)	9,001,343

				В	unning	g time ((s)									
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
43.5	194,344,567.0 0.00	0.00	0.00	_	_	_	_	17.18	3.78	121.5	168.8	120.0	120.0	120.0	121.5	120.0
Avg	0.00	0.00	0.00	_	_	_	_	17.18	3.78	121.5	168.8	120.0	120.0	120.0	121.5	120.0
Min		0.00			_	_	_	17.18			168.8					120.0
Max	0.00	0.00	0.00	_	_	_	_	17.18	3.78	121.5	168.8	120.0	120.0	120.0	121.5	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	15.7912
Running time in seconds for executing parametric cut procedure (t^{cut})	2.9540
Running time in seconds for reading result file (t^{read})	0.0250

File 6000_50_2.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	50.0 %
Edges (m)	9,003,22

Deviation from best OFV (%)											В	tunning	g time ((s)		
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
71.4	323,753,804.0 0.02	0.02	0.00	_	_	_	_	10.44	3.06	121.1	165.0	120.0	120.0	120.0	121.5	120.0
Avg	0.02	0.02	0.00	_	_	_	_	10.44	3.06	121.1	165.0	120.0	120.0	120.0	121.5	120.0
Min	0.02	0.02	0.00	_	_	_	_	10.44	3.06	121.1	165.0	120.0	120.0	120.0	121.5	120.0
Max	0.02	0.02	0.00	_	_	_	_	10.44	3.06	121.1	165.0	120.0	120.0	120.0	121.5	120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	17.7437
Running time in seconds for executing parametric cut procedure (t ^{cut})	3.2030
Running time in seconds for reading result file (t^{read})	0.0265
	<u> </u>

File 6000_50_3.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	50.0 %
Edges (m)	9,000,496

				R	unning	time ((s)									
γ	Best OFV QKE	BP RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
7.3	31,913,824.0	11 0.10	0.00	_	_	_	_	17.18	2.94	120.5	167.9	120.0	120.0	120.0	121.6	120.0
Avg	0.	11 0.10	0.00		_	_	_	17.18	2.94	120.5	167.9	120.0	120.0	120.0	121.6	120.0
Min	0.	11 0.10	0.00	_	_	_	_	17.18	2.94	120.5	167.9	120.0	120.0	120.0	121.6	120.0
Max	0.	11 0.10	0.00	_	_	_	_	17.18	2.94	120.5	167.9	120.0	120.0	120.0	121.6	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	17.0649
Running time in seconds for executing parametric cut procedure (t^{cut})	3.2190
Running time in seconds for reading result file (t^{read})	0.0249

File 6000_50_4.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	50.0 %
Edges (m)	9,001,014

				В	unning	g time ((s)									
γ	Best OFV $\mid \mathbf{QKBP} \mid$	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
50.1	225,556,641.0 0.00	0.00	0.00	_	_	_	_	16.72	3.21	121.3	165.5	120.0	120.0	120.0	121.5	120.0
Avg	0.00	0.00	0.00	_	_	_	_	16.72	3.21	121.3	165.5	120.0	120.0	120.0	121.5	120.0
Min		0.00		_	_	_	_	16.72			165.5					120.0
Max	0.00	0.00	0.00	_	_	_	_	16.72	3.21	121.3	165.5	120.0	120.0	120.0	121.5	120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	17.0315
Running time in seconds for executing parametric cut procedure (t^{cut})	3.1720
Running time in seconds for reading result file (t^{read})	0.0251

File 6000_50_5.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	50.0 %
Edges (m)	9,000,064

Deviation from best OFV (%)											R	unning	time ((s)		
γ	Best OFV QKBF	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly QK	KBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
9.2	40,931,924.0 0.05	0.05	0.00	_	_	_	_	16.14	3.17	120.2	163.5	120.0	120.0	120.0	121.5	120.0
Avg Min Max	0.05	0.05 0.05 0.05	0.00 0.00 0.00	_	_	_		16.14	3.17	120.2	163.5 163.5	120.0	120.0	120.0	121.5 121.5 121.5	120.0 120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	15.9288
Running time in seconds for executing parametric cut procedure (t	t^{cut}) 4.2810
Running time in seconds for reading result file (t^{read})	0.0250

File 6000_75_1.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	75.0 %
Edges (m)	13,501,777

				В	tunning	g time ((s)									
γ	Best OFV QKBF	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
31.0	204,512,250.0 0.03	0.03	0.00	_	_	_	_	26.64	3.06	120.2	171.8	120.0	120.0	120.0	122.3	120.0
Avg	0.03	0.03	0.00	_	_	_	_	26.64	3.06	120.2	171.8	120.0	120.0	120.0	122.3	120.0
Min	0.03	0.03	0.00	_	_	_	_	26.64	3.06	120.2	171.8	120.0	120.0	120.0	122.3	120.0
Max	0.03	0.03	0.00	_	_	_	_	26.64	3.06	120.2	171.8	120.0	120.0	120.0	122.3	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	25.3094
Running time in seconds for executing parametric cut procedure (t^{cut})	6.0780
Running time in seconds for reading result file (t^{read})	0.0251

File 6000_75_2.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	75.0 %
Edges (m)	13,502,598

				F	unning	g time ((s)									
γ	Best OFV QKBI	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
6.6	42,422,207.0 0.0	7 0.06	0.00	_	_	_	_	21.59	2.59	120.4	171.6	120.0	120.0	120.0	122.3	120.0
Avg	0.0	7 0.06	0.00	_	_	_	_	21.59	2.59	120.4	171.6	120.0	120.0	120.0	122.3	120.0
Min	0.0	7 0.06	0.00	_	_	_		21.59	2.59	120.4	171.6	120.0	120.0	120.0	122.3	120.0
Max	0.0	7 0.06	0.00	_	_	_	_	21.59	2.59	120.4	171.6	120.0	120.0	120.0	122.3	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	23.3063
Running time in seconds for executing parametric cut procedure (t^{cut})	5.8750
Running time in seconds for reading result file (t^{read})	0.0252

File 6000_75_3.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	75.0 %
Edges (m)	13,503,777

Deviation from best OFV (%)												B	unning	g time ((s)		
γ	Best OFV $\mid \mathbf{QK} \mid$	BP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
77.3	524,508,156.0	0.03	0.03	0.00	_	_	_	_	18.12	2.69	121.4	171.1	120.0	120.0	120.0	122.3	120.0
Avg	(0.03	0.03	0.00	_	_	_	_	18.12			171.1					120.0
Min Max			$0.03 \\ 0.03$	0.00	_	_	_	_	18.12 18.12			171.1 171.1					$120.0 \\ 120.0$

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	25.2999
Running time in seconds for executing parametric cut procedure (t^{cut})	4.5470
Running time in seconds for reading result file (t^{read})	0.0241

File 6000_75_4.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	75.0 %
Edges (m)	13,499,481

				В	unning	g time ((s)									
γ	Best OFV $\mid \overline{\mathbf{QKBP}}$	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
29.9	197,004,931.0 0.01	0.01	0.00	_	_	_	_	29.67	2.77	120.2	171.8	120.0	120.0	120.0	122.3	120.0
Avg	0.01	0.01	0.00	_	_	_	_	29.67	2.77	120.2	171.8	120.0	120.0	120.0	122.3	120.0
Min	0.01	0.01	0.00	_	_	_	_	29.67	2.77	120.2	171.8	120.0	120.0	120.0	122.3	120.0
Max	0.01	0.01	0.00	_	_	_	_	29.67	2.77	120.2	171.8	120.0	120.0	120.0	122.3	120.0

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file (t^{write})	25.0858
Running time in seconds for executing parametric cut procedure (t^{cut})	4.5780
Running time in seconds for reading result file (t^{read})	0.0239

File 6000_75_5.txt

Property of graph	Value
Nodes (n)	6,000
Density (Δ)	75.0 %
Edges (m)	13,498,901

				R	unning	time ((s)									
γ	Best OFV QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
10.9	74,350,712.0 0.08	0.08	0.00	_	_	_	_	25.03	3.05	120.5	176.1	120.0	120.0	120.0	122.3	120.0
Avg	0.08	0.08	0.00	_	_	_	_	25.03			176.1				122.3	120.0
Min	0.08	0.08	0.00	_	_	_	_	25.03			176.1				122.3	120.0
Max	0.08	0.08	0.00	_	_	_	_	25.03	3.05	120.5	176.1	120.0	120.0	120.0	122.3	120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file (t^{write})	24.4713
Running time in seconds for executing parametric cut procedure (t^{cut}) 4.5160
Running time in seconds for reading result file (t^{read})	0.0257