# Results for instances from collection Standard-QKP

### $File jeu\_100\_025\_01.txt$

Property of graph	Value
Nodes $(n)$	100
Density $(\Delta)$	25.0 %
Edges $(m)$	1,308

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
25.9	18,558.0	0.25	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	2.1	11.2	0.3	0.4	0.6	8.0
Avg Min Max		0.25	$0.06 \\ 0.06 \\ 0.06$	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.1 0.1 0.1	2.1	11.2 11.2 11.2	0.3	0.4	0.6 0.6 0.6	8.0 8.0 8.0

QKBP-specific information	Value
Number of breakpoints	18
Running time in seconds for writing input file $(t^{\text{write}})$	0.0025
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0006

# $File jeu\_100\_025\_02.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	25.0 %
Edges $(m)$	1,268

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
85.5	56,525.0	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	0.5	39.7	0.4	0.2	0.1	1.0
Avg Min Max		0.09	$0.00 \\ 0.00 \\ 0.00$	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.2	0.5	39.7 39.7 39.7	0.4	0.2	0.1 0.1 0.1	1.0 1.0 1.0

QKBP-specific information	Value
Number of breakpoints	11
Running time in seconds for writing input file $(t^{\text{write}})$	0.0024
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0006

# $File jeu\_100\_025\_03.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	25.0 %
Edges $(m)$	1,277

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
6.3	3,752.0	1.35	0.94	0.00	0.00	1.43	0.00	0.00	0.00	0.00	0.0	1.5	2.6	0.2	0.3	0.3	2.0
Avg			0.94					0.00	0.00	0.00	0.0	1.5	2.6			0.3	2.0
Min Max			$0.94 \\ 0.94$		$0.00 \\ 0.00$			$0.00 \\ 0.00$	$\begin{array}{c} 0.00 \\ 0.00 \end{array}$	$0.00 \\ 0.00$	$0.0 \\ 0.0$	$1.5 \\ 1.5$	$\frac{2.6}{2.6}$		$0.3 \\ 0.3$	$0.3 \\ 0.3$	$\frac{2.0}{2.0}$

QKBP-specific information	Value
Number of breakpoints	8
Running time in seconds for writing input file $(t^{\text{write}})$	0.0025
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0006

# $File jeu\_100\_025\_04.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	25.0 %
Edges $(m)$	1,311

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
76.2	50,382.0	0.00	0.00	0.00	0.17	0.45	0.00	0.00	0.00	0.00	0.2	0.6	39.7	0.4	0.2	1.2	3.0
Avg Min Max		0.00	0.00 0.00 0.00	0.00	0.17 $0.17$ $0.17$	0.45	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	$0.2 \\ 0.2 \\ 0.2$	0.6	39.7 39.7 39.7	0.4	$0.2 \\ 0.2 \\ 0.2$	1.2 1.2 1.2	3.0 3.0 3.0

 $\mathbf{QKBP}$  is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	7
Running time in seconds for writing input file $(t^{\text{write}})$	0.0025
Running time in seconds for executing parametric cut procedur	$e(t^{cut})$ 0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0050

# $File jeu\_100\_025\_05.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	25.0 %
Edges $(m)$	1,276

	Deviation from best OFV (%)											Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
93.4	61,494.0	0.00	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.2	0.3	42.4	0.4	0.1	0.1	2.0
Avg		0.00	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.2	0.3	42.4	0.4	0.1	0.1	2.0
Min			0.00	0.00		0.00		0.00	0.00		0.2	0.3	42.4			0.1	2.0
Max		0.00	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.2	0.3	42.4	0.4	0.1	0.1	2.0

QKBP-specific information	Value
Number of breakpoints	10
Running time in seconds for writing input file $(t^{\text{write}})$	0.0024
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File jeu\_100\_025\_06.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	25.0 %
Edges $(m)$	1,274

	Deviation from best OFV (%)											Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
54.0	36,360.0	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	1.2	21.5	0.3	0.9	0.4	2.0
Avg Min Max		0.62	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.2	1.2	21.5 21.5 21.5	0.3	0.9	0.4 0.4 0.4	2.0 2.0 2.0

QKBP-specific information	Value
Number of breakpoints	18
Running time in seconds for writing input file $(t^{\text{write}})$	0.0024
Running time in seconds for executing parametric cut procedure (t <sup>cut</sup> )	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0006

# $File jeu\_100\_025\_07.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	25.0 %
Edges $(m)$	1,287

	Deviation from best OFV (%)											Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
19.0	14,657.0	1.56	0.77	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.1	1.9	7.8	0.3	0.4	0.2	4.0
Avg Min Max		1.56 1.56 1.56	0.77	0.00	0.00 0.00 0.00	0.54	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.1 0.1 0.1	1.9 1.9 1.9		0.3	$0.4 \\ 0.4 \\ 0.4$	0.2 0.2 0.2	4.0 4.0 4.0

QKBP-specific information	Value
Number of breakpoints	19
Running time in seconds for writing input file $(t^{\text{write}})$	0.0024
Running time in seconds for executing parametric cut pro	ocedure $(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File jeu\_100\_025\_08.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	25.0 %
Edges $(m)$	1,268

	Deviation from best OFV (%)											Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
26.2	20,452.0	1.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	2.5	10.4	0.3	0.2	0.1	1.0
Avg Min Max		1.49	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.1 0.1 0.1	2.5	10.4 10.4 10.4	0.3	0.2	0.1 0.1 0.1	1.0 1.0 1.0

QKBP is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	30
Running time in seconds for writing input file $(t^{\text{write}})$	0.0024
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0055

# $File jeu\_100\_025\_09.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	25.0 %
Edges $(m)$	1,228

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
56.8	35,438.0	0.19	0.19	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.1	1.0	27.3	0.4	0.2	0.2	2.0
Avg Min Max		0.19	0.19 0.19 0.19	0.00	0.00 0.00 0.00	0.19	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.1 0.1 0.1	1.0 1.0 1.0	27.3 27.3 27.3	0.4	0.2	0.2 0.2 0.2	2.0 2.0 2.0

QKBP-specific information	Value
Number of breakpoints	10
Running time in seconds for writing input file $(t^{\text{write}})$	0.0023
Running time in seconds for executing parametric cut procedure (t	$^{\rm cut}$ ) 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File jeu\_100\_025\_10.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	25.0 %
Edges $(m)$	1,240

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
39.9	24,930.0	0.74	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.4	17.3	0.3	0.3	1.3	8.0
Avg Min Max		0.74	0.02 $0.02$ $0.02$	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.1 0.1 0.1	1.4	17.3 17.3 17.3	0.3	0.3	1.3 1.3 1.3	8.0 8.0 8.0

QKBP-specific information	Value
Number of breakpoints	7
Running time in seconds for writing input file $(t^{\text{write}})$	0.0024
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File \ jeu\_100\_050\_01.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	50.0 %
Edges $(m)$	2,569

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
62.1	83,742.0	1.21	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.0	26.0	0.4	0.2	1.1	11.0
Avg		1.21	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.0	26.0	0.4	0.2	1.1	11.0
Min		1.21	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.0	26.0	0.4	0.2	1.1	11.0
Max		1.21	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.0	26.0	0.4	0.2	1.1	11.0

QKBP-specif	ic information	Value
Number of b		8
Running time	e in seconds for writing input file $(t^{\text{write}})$	0.0041
Running time	e in seconds for executing parametric cut procedure (t <sup>cut</sup> )	0.0160
Running time	e in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File jeu\_100\_050\_02.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	50.0 %
Edges $(m)$	2,599

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
78.9	104,856.0	0.45	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	0.7	33.3	0.4	0.3	2.6	27.0
Avg		0	0.20		0.00			0.00	0.00	0.00		0.7	33.3			2.6	27.0
Min Max		0.20	$0.20 \\ 0.20$		$0.00 \\ 0.00$			$0.00 \\ 0.00$	$\begin{array}{c} 0.00 \\ 0.00 \end{array}$	$0.00 \\ 0.00$	$0.2 \\ 0.2$	$0.7 \\ 0.7$	33.3 33.3			$\frac{2.6}{2.6}$	$27.0 \\ 27.0$

QKBP-specific information		Value
Number of breakpoints		6
Running time in seconds for	writing input file $(t^{\text{write}})$	0.0043
Running time in seconds for	executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for	reading result file $(t^{\text{read}})$	0.0052

# $File jeu\_100\_050\_03.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	50.0 %
Edges $(m)$	2,568

Deviation from best OFV (%)												Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
24.1	34,006.0	0.31	0.20	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.1	2.0	8.9	0.3	0.4	2.2	9.0
Avg Min		0.0-	0.20		0.00			0.00	0.00	0.00	0.1	2.0		0.3	0.4	2.2 2.2	9.0 9.0
Max		0.0-	0.20		0.00			0.00	0.00	0.00	0.1	2.0			0.4	2.2	9.0

QKBP-specific information	Value
Number of breakpoints	14
Running time in seconds for writing input file $(t^{\text{write}})$	0.0043
Running time in seconds for executing parametric cut procedure (t	cut) 0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0055

# $File jeu\_100\_050\_04.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	50.0 %
Edges $(m)$	2,541

Deviation from best OFV (%)												Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
82.8	105,996.0	0.11	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.2	0.5	34.9	0.4	0.2	0.9	5.0
Avg Min			0.11		0.00			0.00 0.00	0.00	0.01 0.01	0.2		34.9 34.9			0.9 0.9	5.0 5.0
Max		0	0.11						0.00	0.01			34.9			0.9	5.0

QKBP-specific information	Value
Number of breakpoints	7
Running time in seconds for writing input file $(t^{\text{write}})$	0.0042
Running time in seconds for executing parametric cut procedure	$e(t^{cut}) 0.0000$
Running time in seconds for reading result file $(t^{\text{read}})$	0.0048

# $File jeu\_100\_050\_05.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	50.0 %
Edges $(m)$	2,532

Deviation from best OFV (%)												Ru	nning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
42.0	56,464.0	0.13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.8	16.1	0.3	0.8	3.5	10.0
Avg Min Max		0.13	0.02 $0.02$ $0.02$	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.1 0.1 0.1	1.8	16.1 16.1 16.1	0.3	0.8 0.8 0.8	3.5 3.5 3.5	10.0 10.0 10.0

QKBP-specific information	Value
Number of breakpoints	14
Running time in seconds for writing input file $(t^{\text{write}})$	0.0042
Running time in seconds for executing parametric cut procedure (t	cut) 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0056

# $File jeu\_100\_050\_06.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	50.0 %
Edges $(m)$	2,523

Deviation from best OFV (%)												Ru	nning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
13.5	16,083.0	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.9	5.3	0.2	0.3	1.2	7.0
Avg		0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.9	5.3	0.2	0.3	1.2	7.0
Min Max		0.0-	0.00 $0.00$		0.00 $0.00$			$0.00 \\ 0.00$	$\begin{array}{c} 0.00 \\ 0.00 \end{array}$	$0.00 \\ 0.00$	$0.1 \\ 0.1$	1.9 1.9	5.3 5.3	$0.2 \\ 0.2$		1.2 1.2	7.0 7.0

QKBP-specific information	Value
Number of breakpoints	7
Running time in seconds for writing input file $(t^{\text{write}})$	0.0042
Running time in seconds for executing parametric cut procedur	$e(t^{cut})$ 0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0055

# $File jeu\_100\_050\_07.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	50.0 %
Edges $(m)$	2,555

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
40.7	52,819.0	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.9	17.5	0.3	0.4	0.7	6.0	
Avg Min		0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.9	17.5	0.3	0.4	0.7	6.0	
Min		0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.9	17.5	0.3	0.4	0.7	6.0	
Max		0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.9	17.5	0.3	0.4	0.7	6.0	

QKBP-specific information	Value
Number of breakpoints	3
Running time in seconds for writing input file $(t^{\text{write}})$	0.0042
Running time in seconds for executing parametric cut procedure	$e(t^{cut}) 0.0150$
Running time in seconds for reading result file $(t^{\text{read}})$	0.0049

### $File \ jeu\_100\_050\_08.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	50.0 %
Edges $(m)$	2,517

	Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly		
41.6	54,246.0	0.85	0.42	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.1	1.3	18.1	0.3	0.3	2.3	12.0		
Avg		0.85	0.42	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.1	1.3	18.1	0.3	0.3	2.3	12.0		
Min		0.85	0.42	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.1	1.3	18.1	0.3	0.3	2.3	12.0		
Max		0.85	0.42	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.1	1.3	18.1	0.3	0.3	2.3	12.0		

QKBP-specific information	Value
Number of breakpoints	12
Running time in seconds for writing input file $(t^{\text{write}})$	0.0041
Running time in seconds for executing parametric cut processing	edure $(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0047

# $File jeu\_100\_050\_09.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	50.0 %
Edges $(m)$	2,502

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
55.0	68,974.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.1	1.1	23.4	0.3	0.3	4.0	7.0	
Avg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.1	1.1	23.4	0.3	0.3	4.0	7.0	
Min			0.00		0.00			0.00	0.00	0.01	0.1	1.1	23.4			4.0	7.0	
Max		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.1	1.1	23.4	0.3	0.3	4.0	7.0	

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0043
Running time in seconds for executing parametric cut procedure (t <sup>cut</sup> )	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0054

# $File \ jeu\_100\_050\_10.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	50.0 %
Edges $(m)$	2,514

Deviation from best OFV (%)												Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
70.2	88,634.0	0.59	0.45	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.2	0.7	32.5	0.4	0.3	18.6	120.0
Avg Min Max		0.59	$0.45 \\ 0.45 \\ 0.45$	0.00	0.03	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	$0.2 \\ 0.2 \\ 0.2$	0.7	32.5 $32.5$ $32.5$	0.4	0.3	18.6 18.6 18.6	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0042
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0053

# $File jeu\_100\_075\_01.txt$

Property of graph	Value
Nodes $(n)$	100
Density $(\Delta)$	75.0 %
Edges $(m)$	3.821

			Running time (s)														
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
98.3	189,137.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	0.1	39.6	0.4	0.1	0.2	2.0
Avg Min Max		0.00	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.2	0.1 0.1 0.1	39.6 39.6 39.6	0.4	0.1	0.2 0.2 0.2	2.0 2.0 2.0

QKBP-specific information	Value
Number of breakpoints	8
Running time in seconds for writing input file $(t^{\text{write}})$	0.0059
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{read})$	0.0005

# $File jeu\_100\_075\_02.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	75.0 %
Edges $(m)$	3,812

		Running time (s)															
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
50.2	95,074.0	1.51	0.84	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.1	1.1	22.8	0.3	0.2	27.2	120.0
Avg		1.51	0.84	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.1	1.1	22.8	0.3	0.2	27.2	120.0
Min		1.51	0.84	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.1	1.1	22.8	0.3	0.2	27.2	120.0
Max		1.51	0.84	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.1	1.1	22.8	0.3	0.2	27.2	120.0

QKBP-specific information	Value
Number of breakpoints	7
Running time in seconds for writing input file $(t^{\text{write}})$	0.0060
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File jeu\_100\_075\_03.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	75.0 %
Edges $(m)$	3,836

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
32.9	62,098.0	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.8	13.8	0.3	0.3	3.5	14.0	
Avg Min Max		0.08	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.1 0.1 0.1	1.8 1.8 1.8	13.8 13.8 13.8	0.3	0.3 0.3 0.3	3.5 3.5 3.5	14.0 14.0 14.0	

QKBP-specific information	Value
Number of breakpoints	6
8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.0060
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

### $File jeu\_100\_075\_04.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	75.0 %
Edges $(m)$	3,776

			Running time (s)														
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
38.1	72,245.0	1.43	0.84	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.1	1.5	16.6	0.3	0.5	18.2	120.0
Avg		1.43	0.84	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.1	1.5	16.6	0.3	0.5	18.2	120.0
Min		1.43	0.84	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.1	1.5	16.6	0.3	0.5	18.2	120.0
Max		1.43	0.84	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.1	1.5	16.6	0.3	0.5	18.2	120.0

QKBP-specific information	Value
Number of breakpoints	10
Running time in seconds for writing input file $(t^{\text{write}})$	0.0059
Running time in seconds for executing parametric cut procedure ( $t^{\text{cut}}$	t) 0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File jeu\_100\_075\_05.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	75.0 %
Edges $(m)$	3,805

			Running time (s)														
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
14.8	27,616.0	1.41	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	2.3	5.7	0.2	0.2	2.6	35.0
Avg Min Max		1.41	0.21 $0.21$ $0.21$	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.1 0.1 0.1	2.3 2.3 2.3	5.7	0.2	0.2 0.2 0.2	2.6 2.6 2.6	35.0 35.0 35.0

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0060
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File jeu\_100\_075\_06.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	75.0 %
Edges $(m)$	3,824

Deviation from best OFV (%)												Ru	nning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
74.0	145,273.0	0.42	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	0.8	31.8	0.4	0.2	1.0	9.0
Avg Min Max		0.42 0.42 0.42		0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00	0.2 0.2 0.2	0.8	31.8 31.8 31.8	0.4		1.0 1.0 1.0	9.0 9.0 9.0

QKBP-specific information	Value
Number of breakpoints	10
Running time in seconds for writing input file $(t^{\text{write}})$	0.0059
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

### $File jeu\_100\_075\_07.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	75.0 %
Edges $(m)$	3,852

Deviation from best OFV (%)												Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
56.8	110,979.0	0.65	0.35	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.1	1.1	23.4	0.3	0.6	13.6	120.0
Avg	1	0.65	0.35	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.1	1.1	23.4	0.3	0.6	13.6	120.0
Min		0.65	0.35	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.1	1.1	23.4	0.3	0.6	13.6	120.0
Max		0.65	0.35	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.1	1.1	23.4	0.3	0.6	13.6	120.0

QKBP-specific information	Value
Number of breakpoints	6
Running time in seconds for writing input file $(t^{\text{write}})$	0.0060
Running time in seconds for executing parametric cut procedure ( $t^{cu}$	t) 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

### $File jeu\_100\_075\_08.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	75.0 %
Edges $(m)$	3,793

		Running time (s)															
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
13.2	19,570.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	2.0	5.9	0.2	0.3	6.2	120.0
Avg	I	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	2.0	5.9	0.2	0.3	6.2	120.0
Min		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	2.0	5.9	0.2	0.3	6.2	120.0
Max		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	2.0	5.9	0.2	0.3	6.2	120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file $(t^{\text{write}})$	0.0062
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File jeu\_100\_075\_09.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	75.0 %
Edges $(m)$	3,795

Deviation from best OFV (%)												Ru	ınning	$_{ m time}$	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
56.6	104,341.0	1.63	1.08	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.1	1.1	26.7	0.4	0.3	69.1	120.0
Avg		1.63	1.08	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.1	1.1	26.7	0.4	0.3	69.1	120.0
Min		1.63	1.08	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.1	1.1	26.7	0.4	0.3	69.1	120.0
Max		1.63	1.08	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.1	1.1	26.7	0.4	0.3	69.1	120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file $(t^{\text{write}})$	0.0060
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{read})$	0.0005

# $File jeu\_100\_075\_10.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	75.0 %
Edges $(m)$	3,759

Deviation from best OFV (%)												Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
75.4	143,740.0	0.50	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	0.7	32.3	0.4	0.2	4.2	15.0
Avg Min Max		0.50	0.09 0.09 0.09	0.00	$0.00 \\ 0.00 \\ 0.00$	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	$0.2 \\ 0.2 \\ 0.2$	0.7	32.3 32.3 32.3	0.4	0.2	4.2 4.2 4.2	15.0 15.0 15.0

QKBP-specific information	Value
Number of breakpoints	10
Running time in seconds for writing input file $(t^{\text{write}})$	0.0059
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0006

### $File \ jeu\_100\_100\_01.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	100.0 %
Edges $(m)$	5,050

	Deviation from best OFV (%)											Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
28.3	81,978.0	0.27	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.1	1.9	10.0	0.3	0.2	3.8	75.0
Avg		0.27	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.1	1.9	10.0	0.3	0.2	3.8	75.0
Min		0.27	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.1	1.9	10.0	0.3	0.2	3.8	75.0
Max		0.27	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.1	1.9	10.0	0.3	0.2	3.8	75.0

QKBP-specific information	Value
Number of breakpoints	18
Running time in seconds for writing input file $(t^{\text{write}})$	0.0075
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0055

# $File \ jeu\_100\_100\_02.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	100.0 %
Edges $(m)$	5,050

	Deviation from best OFV (%)											Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
75.7	190,424.0	0.62	0.30	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.2	0.7	30.6	0.4	0.2	28.8	120.0
Avg Min Max		0.62	$0.30 \\ 0.30 \\ 0.30$	0.00	0.00 0.00 0.00	0.03	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00	$0.2 \\ 0.2 \\ 0.2$	0.7	30.6 30.6 30.6	0.4	0.2	28.8 28.8 28.8	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	3
Running time in seconds for writing input file $(t^{\text{write}})$	0.0074
Running time in seconds for executing parametric cut procedure ( $t^{cu}$	t) 0.0000
Running time in seconds for reading result file $(t^{read})$	0.0005

# $File \ jeu\_100\_100\_03.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	100.0 %
Edges $(m)$	5,050

	Deviation from best OFV (%)											Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
88.9	225,434.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	0.5	36.9	0.4	0.2	1.8	13.0
Avg Min			0.00		0.00			0.00	0.00	0.00	0.2		36.9			1.8	13.0
Max			0.00		$0.00 \\ 0.00$			$0.00 \\ 0.00$	0.00	0.00			$36.9 \\ 36.9$			1.8 1.8	$13.0 \\ 13.0$

QKBP-specific information	Value
Number of breakpoints	5
Running time in seconds for writing input file $(t^{\text{write}})$	0.0081
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File \ jeu\_100\_100\_04.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	100.0 %
Edges $(m)$	5,050

Deviation from best OFV (%)												Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
23.3	63,028.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	2.2	9.0	0.3	0.2	1.5	29.0
Avg			0.00		0.00			0.00	0.00	0.00	0.1	2.2				1.5	29.0
Min Max			$0.00 \\ 0.00$		$0.00 \\ 0.00$			$0.00 \\ 0.00$	$\begin{array}{c} 0.00 \\ 0.00 \end{array}$	$0.00 \\ 0.00$	$0.1 \\ 0.1$	$\frac{2.2}{2.2}$		$0.3 \\ 0.3$	$0.2 \\ 0.2$	1.5 1.5	$\frac{29.0}{29.0}$

QKBP-specific information	Value
Number of breakpoints	6
Running time in seconds for writing input file $(t^{\text{write}})$	0.0073
Running time in seconds for executing parametric cut procedure (t	cut) 0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File \ jeu\_100\_100\_05.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	100.0 %
Edges $(m)$	5,050

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
89.0	230,076.0	0.18	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	0.4	37.1	0.4	0.2	1.8	18.0
Avg Min Max		0.18 0.18 0.18	0.03	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.2 0.2 0.2	0.4	37.1 37.1 37.1	0.4	0.2	1.8 1.8 1.8	18.0 18.0 18.0

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0074
Running time in seconds for executing parametric cut procedure (t	cut) 0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File \ jeu\_100\_100\_06.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	100.0 %
Edges $(m)$	5,050

	Deviation from best OFV (%)											Running time (s)						
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
29.6	74,358.0	0.38	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.9	11.8	0.3	0.2	6.9	64.0	
Avg Min Max		0.38	0.22 $0.22$ $0.22$		0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.1 0.1 0.1	1.9	11.8 11.8 11.8	0.3	0.2	6.9 6.9 6.9	64.0 64.0 64.0	

QKBP-specific information	Value
Number of breakpoints	6
Running time in seconds for writing input file $(t^{\text{write}})$	0.0076
Running time in seconds for executing parametric cut procedure ( $t^{C}$	o.0000
Running time in seconds for reading result file $(t^{read})$	0.0005

# $File \ jeu\_100\_100\_07.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	100.0 %
Edges $(m)$	5,050

Deviation from best OFV (%)												Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
4.1	10,330.0	2.20	2.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	1.6	1.6	0.2	0.2	1.5	6.0
Avg			2.20		0.00			0.00	0.00	0.00	0.0	1.6	1.6			1.5	6.0
Min Max			$\frac{2.20}{2.20}$		$0.00 \\ 0.00$			$0.00 \\ 0.00$	$\begin{array}{c} 0.00 \\ 0.00 \end{array}$	$0.00 \\ 0.00$	$0.0 \\ 0.0$	$\frac{1.6}{1.6}$	1.6 1.6			1.5 1.5	$6.0 \\ 6.0$

QKBP-specific information	Value
Number of breakpoints	3
Running time in seconds for writing input file $(t^{\text{write}})$	0.0078
Running time in seconds for executing parametric cut procedur	re $(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0006

# $File \ jeu\_100\_100\_08.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	100.0 %
Edges $(m)$	5,050

	Deviation from best OFV (%)											Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
24.5	62,582.0	0.53	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1	1.7	10.2	0.3	0.2	3.3	21.0
Avg Min Max		0.53	0.20 $0.20$ $0.20$	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.1 0.1 0.1	1.7	10.2 10.2 10.2	0.3	0.2	3.3 3.3 3.3	21.0 21.0 21.0

QKBP-specific information	Value
Number of breakpoints	5
Running time in seconds for writing input file $(t^{\text{write}})$	0.0073
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File \ jeu\_100\_100\_09.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	100.0 %
Edges $(m)$	5,050

Deviation from best OFV (%)											Running time (s)						
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
91.7	232,754.0	0.58	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	0.3	35.7	0.4	0.2	89.0	120.0
Avg Min Max		0.58	0.34 $0.34$ $0.34$	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	$0.2 \\ 0.2 \\ 0.2$	0.3	35.7 35.7 35.7	0.4	0.2	89.0 89.0 89.0	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	5
Running time in seconds for writing input file $(t^{\text{write}})$	0.0075
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File \ jeu\_100\_100\_10.txt$

Property of graph	Value
Nodes (n)	100
Density $(\Delta)$	100.0 %
Edges $(m)$	5,050

	Deviation from best OFV (%)											Ru	ınning	time	(s)		
$\gamma$	Best OFV	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
74.8	193,262.0	0.88	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	0.6	29.5	0.3	0.2	120.1	120.0
Avg Min Max		0.88	0.49 $0.49$ $0.49$	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00	$0.2 \\ 0.2 \\ 0.2$	0.6	29.5 29.5 29.5	0.3	0.2	120.1 120.1 120.1	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	6
Running time in seconds for writing input file $(t^{\text{write}})$	0.0073
Running time in seconds for executing parametric cut procedure (	$t^{\text{cut}}$ ) 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0005

# $File \ jeu\_200\_025\_01.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	25.0 %
Edges $(m)$	5.195

	Deviation from best OFV (%)											Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
77.7	204,441.0	0.07	0.06	0.00	_	0.00	0.00	0.00	0.00	0.01	0.8	1.5	120.0	2.8	1.1	11.0	83.0
Avg Min Max		0.07	0.06 0.06 0.06	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	0.8 0.8 0.8	1.5	120.0 120.0 120.0	2.8	1.1 1.1 1.1	11.0 11.0 11.0	83.0 83.0 83.0

QKBP-specific information	Value
Number of breakpoints	5
Running time in seconds for writing input file $(t^{\text{write}})$	0.0082
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0009

# $File jeu\_200\_025\_02.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	25.0 %
Edges $(m)$	5,069

		OFV (%) Running time (s)															
$\gamma$	Best OFV   C	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
91.4	239,573.0	0.01	0.01	0.00	_	0.00	0.00	0.00	0.00	0.00	0.9	1.0	120.0	2.8	0.8	0.8	44.0
Avg Min Max		0.01 0.01 0.01	0.01	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.9 0.9 0.9	1.0	120.0 120.0 120.0	2.8	0.8	0.8 0.8 0.8	44.0 44.0 44.0

QKBP-specific information	Value
Number of breakpoints	16
Running time in seconds for writing input file $(t^{\text{write}})$	0.0080
Running time in seconds for executing parametric cut procedure ( $t^{C}$	o.0150 (cut)
Running time in seconds for reading result file $(t^{read})$	0.0010

## $File \ jeu\_200\_025\_03.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	25.0 %
Edges $(m)$	5,038

	Deviation from best OFV (%)											Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
95.1	245,463.0	0.61	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.9	0.7	120.0	2.7	0.6	0.8	22.0
Avg		0.61	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.9	0.7	120.0	2.7	0.6	0.8	22.0
Min		0.61	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.9	0.7	120.0	2.7	0.6	0.8	22.0
Max		0.61	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.9	0.7	120.0	2.7	0.6	0.8	22.0

QKBP-specific information	Value
Number of breakpoints	17
Running time in seconds for writing input file $(t^{\text{write}})$	0.0080
Running time in seconds for executing parametric cut procedure ( $t^{\text{cut}}$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0010

# $File jeu\_200\_025\_04.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	25.0 %
Edges $(m)$	5,153

Deviation from best OFV (%)												Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
85.2	222,361.0	0.00	0.00	0.00	_	0.00	0.00	0.00	0.00	0.01	0.8	1.4	120.0	2.9	1.8	7.1	34.0
Avg Min Max		0.00	0.00 0.00 0.00	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	$0.01 \\ 0.01 \\ 0.01$	0.8 0.8 0.8	1.4	120.0 120.0 120.0		1.8	7.1 7.1 7.1	34.0 34.0 34.0

QKBP-specific information	Value
Number of breakpoints	6
Running time in seconds for writing input file $(t^{\text{write}})$	0.0083
Running time in seconds for executing parametric cut procedure ( $t^{cu}$	t) 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0008

# $File \ jeu\_200\_025\_05.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	25.0 %
Edges $(m)$	5,024

	Deviation from best OFV (%)											Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
72.4	187,324.0	0.25	0.07	0.00	_	0.00	0.00	0.00	0.00	0.01	0.7	1.6	120.0	2.8	2.6	4.0	41.0
Avg Min Max		0.25	0.07 $0.07$ $0.07$	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	0.7 0.7 0.7	1.6	120.0 120.0 120.0	2.8	2.6	4.0 4.0 4.0	41.0 41.0 41.0

QKBP-specific information	Value
Number of breakpoints	13
Running time in seconds for writing input file $(t^{\text{write}})$	0.0079
Running time in seconds for executing parametric cut procedure ( $t^{cut}$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0009

# $File jeu\_200\_025\_06.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$ Edges $(m)$	25.0 % 5.111

Deviation from best OFV (%)											Running time (s)						
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
32.7	80,351.0	0.46	0.24	0.00	_	0.11	_	0.00	0.00	0.01	0.5	4.6	120.0	3.1	120.0	33.7	120.0
Avg Min Max		0.46	0.24 $0.24$ $0.24$		_	0.11 $0.11$ $0.11$	_	0.00	0.00 0.00 0.00	0.01	0.5	4.6	120.0 120.0 120.0	3.1	120.0	33.7 33.7 33.7	120.0 120.0 120.0

QKBP-specific information		Value
Number of breakpoints		9
Running time in seconds for wr	iting input file $(t^{\text{write}})$	0.0081
Running time in seconds for exe	ecuting parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for rea	ading result file $(t^{\text{read}})$	0.0008

## $File jeu\_200\_025\_07.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	25.0 %
Edges $(m)$	4,981

Deviation from best OFV (%)												R	unning	time	e (s)		
$\gamma$	Best OFV	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
23.4	59,036.0	0.30	0.06	0.00	_	0.00	_	0.00	0.00	0.01	0.4	4.8	120.0	2.8	120.0	8.1	87.0
Avg Min Max		0.30	$0.06 \\ 0.06 \\ 0.06$	0.00	_	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	0.4	4.8	120.0	2.8	120.0 120.0 120.0	8.1 8.1 8.1	87.0 87.0 87.0

QKBP-specific information	Value
Number of breakpoints	13
Running time in seconds for writing input file $(t^{\text{write}})$	0.0080
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0010

## $File \ jeu\_200\_025\_08.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	25.0 %
Edges $(m)$	4,933

	Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly		
56.9	149,433.0	0.11	0.10	0.00	_	0.03	0.00	0.00	0.00	0.00	0.7	3.0	120.0	3.1	0.9	3.8	120.0		
Avg		0.11	0.10	0.00	_	0.03	0.00	0.00	0.00	0.00	0.7	3.0	120.0	3.1	0.9	3.8	120.0		
Min		0.11	0.10	0.00	_	0.03	0.00	0.00	0.00	0.00	0.7	3.0	120.0	3.1	0.9	3.8	120.0		
Max		0.11	0.10	0.00	_	0.03	0.00	0.00	0.00	0.00	0.7	3.0	120.0	3.1	0.9	3.8	120.0		

QKBP-specific information	Value
Number of breakpoints	19
Running time in seconds for writing input file $(t^{\text{write}})$	0.0079
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0008

# $File \ jeu\_200\_025\_09.txt$

Property of graph	Value
Nodes $(n)$	200
Density $(\Delta)$	25.0 %
Edges $(m)$	4.905

		Running time (s)															
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
19.5	49,366.0	0.15	0.15	0.00	_	0.08	0.00	0.00	0.00	0.00	0.4	5.4	120.0	2.7	31.1	7.0	80.0
Avg Min Max		0.15	$0.15 \\ 0.15 \\ 0.15$		_	0.08	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00	0.4	5.4	120.0 120.0 120.0	2.7	31.1	7.0 7.0 7.0	80.0 80.0 80.0

QKBP-specific information	Value
Number of breakpoints	15
Running time in seconds for writing input	file $(t^{\text{write}})$ 0.0079
Running time in seconds for executing para	ametric cut procedure $(t^{\text{cut}})$ 0.0160
Running time in seconds for reading result	file $(t^{\text{read}})$ 0.0009

## $File \ jeu\_200\_025\_10.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	25.0 %
Edges $(m)$	4,927

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
18.6	48,459.0	0.45	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.4	3.9	120.0	2.5	1.8	1.3	15.0	
Avg	- 1	0.45	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.4	3.9	120.0	2.5	1.8	1.3	15.0	
Min		0.45	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.4	3.9	120.0	2.5	1.8	1.3	15.0	
Max		0.45	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.4	3.9	120.0	2.5	1.8	1.3	15.0	

QKBP-specific information	Value
Number of breakpoints	8
Running time in seconds for writing input file $(t^{\text{write}})$	0.0078
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0010

# $File \ jeu\_200\_050\_01.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	50.0 %
Edges $(m)$	10,121

	Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly		
71.6	372,097.0	0.00	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.7	2.2	120.0	2.9	1.1	1.3	39.0		
Avg Min Max		0.00	0.00 0.00 0.00	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.7 0.7 0.7	2.2	120.0 120.0 120.0	2.9 2.9 2.9	1.1 1.1 1.1	1.3 1.3 1.3	39.0 39.0 39.0		

QKBP-specific information	Value
Number of breakpoints	9
Running time in seconds for writing input file $(t^{\text{write}})$	0.0153
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0008

# $File \ jeu\_200\_050\_02.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	50.0 %
Edges $(m)$	10,146

		Running time (s)															
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
42.8	211,130.0	0.73	0.07	0.00	_	0.01	_	0.00	0.01	0.01	0.6	4.8	120.0	3.2	120.0	120.3	120.0
Avg Min			0.07 0.07	0.00		0.01 0.01		0.00	0.01 0.01	0.01 0.01	0.6 0.6		120.0 120.0		120.0 120.0	120.3 120.3	120.0 120.0
Max			0.07	0.00		0.01	_	0.00	0.01				120.0			120.3	120.0

QKBP-specific information	Value
Number of breakpoints	5
Running time in seconds for writing input file $(t^{\text{write}})$	0.0153
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0150
Running time in seconds for reading result file $(t^{read})$	0.0009

# $File \ jeu\_200\_050\_03.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	50.0 %
Edges $(m)$	10,000

			Running time (s)														
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
43.2	227,185.0	0.39	0.12	0.00	_	0.01	0.00	0.00	0.00	0.00	0.6	3.4	120.0	2.9	1.7	23.0	120.0
Avg Min Max		0.39	0.12 $0.12$ $0.12$	0.00	_	0.01	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.6 0.6 0.6	3.4	120.0 120.0 120.0	2.9	1.7	23.0 23.0 23.0	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	5
Running time in seconds for writing input file $(t^{\text{write}})$	0.0152
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0069

## $File \ jeu\_200\_050\_04.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	50.0 %
Edges $(m)$	10,096

			Running time (s)														
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
43.1	228,572.0	0.00	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.6	3.5	120.0	2.9	1.0	1.6	38.0
Avg	- 1	0.00	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.6	3.5	120.0	2.9	1.0	1.6	38.0
Min		0.00	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.6	3.5	120.0	2.9	1.0	1.6	38.0
Max		0.00	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.6	3.5	120.0	2.9	1.0	1.6	38.0

QKBP-specific information	Value
Number of breakpoints	11
Running time in seconds for writing input file $(t^{\text{write}})$	0.0152
Running time in seconds for executing parametric cut procedure (t	cut) 0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0010

# $File \ jeu\_200\_050\_05.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	50.0 %
Edges $(m)$	10,017

			Running time (s)														
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
94.0	479,651.0	0.14	0.11	0.00	_	0.00	0.00	0.00	0.00	0.01	0.9	0.8	120.0	2.5	0.8	49.2	120.0
Avg Min Max		0.14 0.14 0.14	0.11	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	0.9 0.9 0.9	0.8	120.0 120.0 120.0	2.5	0.8 0.8 0.8	49.2 49.2 49.2	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	12
Running time in seconds for writing input file $(t^{\text{write}})$	0.0154
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0009

# $File \ jeu\_200\_050\_06.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	50.0 %
Edges $(m)$	10,034

Deviation from best OFV (%)												Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
85.2	426,777.0	0.22	0.21	0.00	_	0.01	0.00	0.00	0.01	0.01	0.9	1.1	120.0	2.8	1.8	120.4	120.0
Avg Min Max		0.22	0.21 $0.21$ $0.21$	0.00 0.00 0.00	_	0.01	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	0.01 0.01 0.01	0.9	1.1	120.0 120.0 120.0	2.8	1.8	120.4 120.4 120.4	120.0 120.0 120.0

 $\mathbf{QKBP}$  is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	11
Running time in seconds for writing input file $(t^{\text{write}})$	0.0153
Running time in seconds for executing parametric cut procedure (	$t^{\text{cut}}$ ) 0.0000
Running time in seconds for reading result file $(t^{read})$	0.0072

# $File \ jeu\_200\_050\_07.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	50.0 %
Edges $(m)$	10,092

Deviation from best OFV (%)											Running time (s)						
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
44.9	220,890.0	0.08	0.05	0.00	_	0.07	_	0.00	0.03	0.01	0.6	3.5	120.0	3.2	120.0	120.3	120.0
Avg Min Max		0.08	$0.05 \\ 0.05 \\ 0.05$	0.00 0.00 0.00	_	0.07 $0.07$ $0.07$	_	0.00 0.00 0.00	0.03 0.03 0.03	0.01	0.6	3.5	120.0 120.0 120.0	3.2	120.0	120.3 120.3 120.3	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	5
Running time in seconds for writing input file $(t^{\text{write}})$	0.0152
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0009

## $File \ jeu\_200\_050\_08.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	50.0 %
Edges $(m)$	9,977

Deviation from best OFV (%)												Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
61.9	317,952.0	0.12	0.00	0.00	_	0.00	0.00	0.00	0.00	0.00	0.7	2.9	120.0	3.0	2.1	5.0	66.0
Avg Min Max		0.12	0.00 0.00 0.00	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00	0.7 0.7 0.7	2.9	120.0 120.0 120.0	3.0 3.0 3.0	2.1	5.0 5.0 5.0	66.0 66.0 66.0

QKBP-specific information	Value
Number of breakpoints	14
Running time in seconds for writing input file $(t^{\text{write}})$	0.0151
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{read})$	0.0009

# $File \ jeu\_200\_050\_09.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	50.0 %
Edges $(m)$	9,955

	Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly		
21.9	104,936.0	0.06	0.18	0.00	_	0.00	0.00	0.00	0.46	0.01	0.4	4.9	120.0	2.6	1.9	45.7	120.0		
Avg Min Max		0.06	0.18 0.18 0.18	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.46 0.46 0.46	0.01 0.01 0.01	$0.4 \\ 0.4 \\ 0.4$	4.9	120.0 120.0 120.0	2.6	1.9	45.7 45.7 45.7	120.0 120.0 120.0		

QKBP-specific information	Value
Number of breakpoints	6
Running time in seconds for writing input file $(t^{\text{write}})$	0.0149
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0009

## $File \ jeu\_200\_050\_10.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	50.0 %
Edges $(m)$	9,967

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
54.8	284,751.0	0.01	0.01	0.00	_	0.00	0.00	0.00	0.00	0.00	0.7	2.9	120.0	3.1	4.7	19.0	120.0
Avg Min Max		0.01 0.01 0.01	0.01	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.7 0.7 0.7	2.9	120.0 120.0 120.0	3.1	4.7 4.7 4.7	19.0 19.0 19.0	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	14
Running time in seconds for writing input file $(t^{\text{write}})$	0.0153
Running time in seconds for executing parametric cut procedure ( $t^{cu}$	t) 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0066

## $File jeu\_200\_075\_01.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	75.0 %
Edges $(m)$	15,043

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
58.3	442,894.0	0.58	0.37	0.00	_	0.03	0.00	0.00	0.05	0.00	0.7	3.5	120.0	2.8	1.9	61.1	120.0	
Avg		0.58		0.00			0.00	0.00	0.05	0.00	0.7		120.0		1.9	61.1	120.0	
$_{ m Min}$		$0.58 \\ 0.58$		$0.00 \\ 0.00$			0.00 $0.00$	$0.00 \\ 0.00$	$0.05 \\ 0.05$	$0.00 \\ 0.00$	$0.7 \\ 0.7$		120.0 $120.0$		1.9 1.9	$61.1 \\ 61.1$	120.0 $120.0$	

 $\mathbf{QKBP}$  is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	5
Running time in seconds for writing input file $(t^{\text{write}})$	0.0222
Running time in seconds for executing parametric cut procedur	$e(t^{cut})$ 0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0067

## $File jeu\_200\_075\_02.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	75.0 %
Edges $(m)$	15,092

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV   C	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
40.3	286,643.0	0.89	0.29	0.00	_	0.00	0.00	0.02	0.00	0.01	0.6	3.5	120.0	3.0	2.0	120.1	120.0
Avg Min Max		0.89	0.29 $0.29$ $0.29$	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.02 0.02 0.02	0.00 0.00 0.00	0.01 0.01 0.01	0.6 0.6 0.6	3.5	120.0 120.0 120.0	3.0	2.0 2.0 2.0	120.1 120.1 120.1	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file $(t^{\text{write}})$	0.0228
Running time in seconds for executing parametric cut procedure	$e(t^{\text{cut}})$ 0.0160
Running time in seconds for reading result file $(t^{read})$	0.0066

## $File jeu\_200\_075\_03.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	75.0 %
Edges $(m)$	15,025

Deviation from best OFV (%)												Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
8.1	61,924.0	2.02	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.3	3.6	54.1	2.1	0.7	52.5	120.0
Avg Min Max		2.02	1.03 1.03 1.03	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	0.3	3.6	54.1 54.1 54.1	2.1	0.7	52.5 52.5 52.5	120.0 120.0 120.0

 $\mathbf{QKBP}$  is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	6
Running time in seconds for writing input file $(t^{\text{write}})$	0.0261
Running time in seconds for executing parametric cut procedure ( $t^{c}$	cut) 0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0070

# $File jeu\_200\_075\_04.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	75.0 %
Edges $(m)$	14,988

	Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly		
20.8	128,351.0	0.39	0.22	0.00	_	0.00	0.00	0.00	0.00	0.01	0.4	3.6	120.0	2.6	1.3	120.3	120.0		
Avg Min Max		0.39	0.22 $0.22$ $0.22$	0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	$0.4 \\ 0.4 \\ 0.4$	3.6	120.0 120.0 120.0	2.6	1.3	120.3 120.3 120.3	120.0 120.0 120.0		

QKBP-specific information	Value
Number of breakpoints	1
Running time in seconds for writing input file $(t^{\text{write}})$	0.0224
Running time in seconds for executing parametric cut procedure ( $t^{cu}$	<sup>1t</sup> ) 0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0064

# $File jeu\_200\_075\_05.txt$

Property of graph	Value
Nodes $(n)$	200
Density $(\Delta)$	75.0 %
Edges $(m)$	15.069

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
17.1	137,885.0	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.4	4.1	110.1	2.7	1.5	43.1	120.0	
Avg Min Max		0.14	0.14 $0.14$ $0.14$	0.00	0.00	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	$0.4 \\ 0.4 \\ 0.4$	4.1	110.1 110.1 110.1	2.7		43.1 43.1 43.1	120.0 120.0 120.0	

QKBP-specific information	Value
Number of breakpoints	9
Running time in seconds for writing input file $(t^{\text{write}})$	0.0225
Running time in seconds for executing parametric cut proc	cedure $(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0068

## $File \ jeu\_200\_075\_06.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	75.0 %
Edges $(m)$	15,050

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
29.0	229,631.0	0.07	0.03	0.00	_	0.00	0.00	0.00	0.00	0.00	0.5	5.4	120.0	2.9	1.3	14.8	120.0	
Avg Min Max		0.07	$0.03 \\ 0.03 \\ 0.03$	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.5 0.5 0.5	5.4	120.0 120.0 120.0	2.9	1.3 1.3 1.3	14.8 14.8 14.8	120.0 120.0 120.0	

QKBP is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	12
Running time in seconds for writing input file $(t^{\text{write}})$	0.0222
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0064

## $File \ jeu\_200\_075\_07.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	75.0 %
Edges $(m)$	15,182

			Running time (s)														
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
34.2	269,887.0	0.21	0.04	0.00	_	0.03	0.00	0.00	0.00	0.00	0.5	4.3	120.0	2.8	0.8	21.5	120.0
Avg Min Max		0.21	$0.04 \\ 0.04 \\ 0.04$	0.00 0.00 0.00	_		0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	$0.5 \\ 0.5 \\ 0.5$	4.3	120.0 120.0 120.0	2.8	0.8	21.5 21.5 21.5	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	3
Running time in seconds for writing input file $(t^{\text{write}})$	0.0227
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0076

## $File \ jeu\_200\_075\_08.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	75.0 %
Edges $(m)$	14,985

			Running time (s)														
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
77.8	600,858.0	0.03	0.00	0.00	_	0.00	0.00	0.00	0.02	0.00	0.8	1.7	120.0	2.4	0.8	6.1	120.0
Avg	- 1	0.03	0.00	0.00	_	0.00	0.00	0.00	0.02	0.00	0.8	1.7	120.0	2.4	0.8	6.1	120.0
Min		0.03	0.00	0.00	_	0.00	0.00	0.00	0.02	0.00	0.8	1.7	120.0	$^{2.4}$	0.8	6.1	120.0
Max		0.03	0.00	0.00	_	0.00	0.00	0.00	0.02	0.00	0.8	1.7	120.0	2.4	0.8	6.1	120.0

QKBP-specific information	Value
Number of breakpoints	11
Running time in seconds for writing input file $(t^{\text{write}})$	0.0228
Running time in seconds for executing parametric cut procedure (	$(t^{\text{cut}})$ 0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0063

## $File \ jeu\_200\_075\_09.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	75.0 %
Edges $(m)$	15,036

			Running time (s)														
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
67.8	516,771.0	0.36	0.28	0.00	_	0.01	0.00	0.00	0.01	0.00	0.8	2.0	120.0	3.1	1.9	120.4	120.0
Avg Min Max		0.36	0.28 0.28 0.28		_	0.01	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	0.00 0.00 0.00	0.8 0.8 0.8	2.0	120.0 120.0 120.0	3.1	1.9 1.9 1.9	120.4 120.4 120.4	120.0 120.0 120.0

 $\mathbf{QKBP}$  is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	6
Running time in seconds for writing input file $(t^{\text{write}})$	0.0227
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0071

## $File \ jeu\_200\_075\_10.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	75.0 %
Edges $(m)$	15,015

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
18.5	142,694.0	0.89	0.08	0.00	_	0.00	0.00	0.00	0.00	0.00	0.4	4.2	120.0	2.7	0.8	10.4	120.0	
Avg			0.08	0.00		0.00		0.00	0.00	0.00	0.4		120.0			10.4	120.0	
Min		0.89	0.08	0.00	_	0.00	0.00	0.00	0.00	0.00	0.4	4.2	120.0	2.7	0.8	10.4	120.0	
Max		0.89	0.08	0.00	_	0.00	0.00	0.00	0.00	0.00	0.4	4.2	120.0	2.7	0.8	10.4	120.0	

QKBP-specific informa	tion	Value
Number of breakpoints		5
Running time in second	Is for writing input file $(t^{\text{write}})$	0.0223
Running time in second	ds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in second	ls for reading result file $(t^{\text{read}})$	0.0063

## $File \ jeu\_200\_100\_01.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	100.0 %
Edges $(m)$	20,100

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
93.2	937,149.0	0.15	0.15	0.00	_	0.00	0.00	0.05	0.00	0.01	0.9	0.6	120.0	3.0	1.7	120.2	120.0	
Avg Min Max		0.15	$0.15 \\ 0.15 \\ 0.15$	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.05 0.05 0.05	0.00 0.00 0.00	0.01 0.01 0.01	0.9 0.9 0.9	0.6	120.0 120.0 120.0	3.0 3.0 3.0	1.7 1.7 1.7	120.2 120.2 120.2	120.0 120.0 120.0	

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0294
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0009

# File jeu\_200\_100\_02.txt

Property of graph	Value
Nodes $(n)$ Density $(\Delta)$	200 100.0 %
Edges $(m)$	20,100

Deviation from best OFV (%)											Running time (s)						
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
26.8	303,058.0	0.43	0.14	0.00	_	0.00	0.00	0.00	0.00	0.00	0.5	4.3	120.0	2.9	0.8	120.7	120.0
Avg		0.43	0.14	0.00	_	0.00	0.00	0.00	0.00	0.00	0.5	4.3	120.0	2.9	0.8	120.7	120.0
Min		0.43	0.14	0.00	_	0.00	0.00	0.00	0.00	0.00	0.5	4.3	120.0	2.9	0.8	120.7	120.0
Max		0.43	0.14	0.00	_	0.00	0.00	0.00	0.00	0.00	0.5	4.3	120.0	2.9	0.8	120.7	120.0

QKBP-specific information	Value
Number of breakpoints	12
Running time in seconds for writing input file $(t^{\text{write}})$	0.0296
Running time in seconds for executing parametric cut procedure ( $t^{\text{cut}}$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0009

### $File \ jeu\_200\_100\_03.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	100.0 %
Edges $(m)$	20,100

Deviation from best OFV (%)												Ru	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
3.5	29,367.0	1.73	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.1	3.1	20.8	1.4	0.6	22.8	120.0
Avg Min Max		1.73	$0.50 \\ 0.50 \\ 0.50$	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	0.1 0.1 0.1	3.1 3.1 3.1	20.8 20.8 20.8	1.4	0.0	22.8 22.8 22.8	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0292
Running time in seconds for executing parametric cut procedure (	$(t^{\text{cut}})$ 0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0009

### $File \ jeu\_200\_100\_04.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	100.0 %
Edges $(m)$	20,100

		Running time (s)															
$\gamma$	Best OFV	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
9.6	100,838.0	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.3	4.5	66.0	2.2	0.6	19.8	120.0
Avg Min Max		0.37	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.3	4.5	66.0 66.0 66.0	2.2	0.6	19.8 19.8 19.8	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0299
Running time in seconds for executing parametric cut procedure ( $t^{\text{cut}}$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0009

### $File \ jeu\_200\_100\_05.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	100.0 %
Edges $(m)$	20,100

	Deviation from best OFV (%)											Running time (s)						
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
77.8	786,635.0	0.15	0.07	0.00	_	0.00	0.00	0.06	1.61	0.01	0.8	1.5	120.0	3.0	1.0	120.4	120.0	
Avg Min Max		0.15 0.15 0.15	0.07	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.06 0.06 0.06	1.61 1.61 1.61	0.01 0.01 0.01	0.8 0.8 0.8	1.5	120.0 120.0 120.0	3.0	1.0 1.0 1.0	120.4 120.4 120.4	120.0 120.0 120.0	

QKBP is the contribution in this paper

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file $(t^{\text{write}})$	0.0296
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0000
Running time in seconds for reading result file $(t^{\text{read}})$	0.0009

### $File \ jeu\_200\_100\_06.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	100.0 %
Edges $(m)$	20,100

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
4.0	41,171.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.2	4.6	22.3	1.5	0.6	11.2	120.0	
Avg Min	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.2	4.6	22.3	1.5	0.6	11.2	120.0	
Min		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.2	4.6	22.3	1.5	0.6	11.2	120.0	
Max		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.2	4.6	22.3	1.5	0.6	11.2	120.0	

QKBP-specific information	Value
Number of breakpoints	13
Running time in seconds for writing input file $(t^{\text{write}})$	0.0298
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0160
Running time in seconds for reading result file $(t^{read})$	0.0010

### $File \ jeu\_200\_100\_07.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	100.0 %
Edges $(m)$	20,100

	Deviation from best OFV (%)											Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
69.1	701,094.0	0.34	0.19	0.00	_	0.00	0.00	0.00	1.62	0.01	0.8	2.0	120.0	2.8	1.0	120.2	120.0
Avg Min Max		0.34	0.19 $0.19$ $0.19$	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	1.62 1.62 1.62	0.01 0.01 0.01	0.8 0.8 0.8	2.0	120.0 120.0 120.0	2.8	1.0	120.2 120.2 120.2	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0298
Running time in seconds for executing parametric cut procedure ( $t^{cut}$	0.0150
Running time in seconds for reading result file $(t^{read})$	0.0009

### $File \ jeu\_200\_100\_08.txt$

Property of graph	Value
Nodes $(n)$ Density $(\Delta)$	200 100.0 %
Edges $(m)$	20,100

Deviation from best OFV (%)												Rı	ınning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
76.4	782,443.0	0.34	0.30	0.00	_	0.01	0.00	0.00	0.00	0.00	0.8	1.7	120.0	2.6	2.5	120.4	120.0
Avg Min Max		0.34	0.30 $0.30$ $0.30$	0.00	_	0.01	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00	0.8 0.8 0.8	1.7	120.0 120.0 120.0	2.6	2.5	120.4 120.4 120.4	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	7
Running time in seconds for writing input file $(t^{\text{write}})$	0.0299
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{read})$	0.0009

### $File \ jeu\_200\_100\_09.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	100.0 %
Edges $(m)$	20,100

	Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly		
62.8	628,992.0	0.30	0.16	0.00	_	0.01	0.00	0.00	0.00	0.01	0.7	2.3	120.0	2.9	1.2	120.4	120.0		
Avg Min Max		0.30	0.16 $0.16$ $0.16$	0.00 0.00 0.00	_		0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	0.7	2.3	120.0 120.0 120.0	2.9	1.2	120.4 120.4 120.4	120.0 120.0 120.0		

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0292
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0010

### $File \ jeu\_200\_100\_10.txt$

Property of graph	Value
Nodes (n)	200
Density $(\Delta)$	100.0 %
Edges $(m)$	20,100

	Deviation from best OFV (%)											Running time (s)						
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
36.5	378,442.0	0.45	0.35	0.00	_	0.04	0.00	0.00	1.12	0.00	0.5	3.7	120.0	3.1	1.0	120.4	120.0	
Avg Min Max		0.45	0.35 $0.35$ $0.35$	0.00 0.00 0.00	_		0.00 0.00 0.00	0.00 0.00 0.00	1.12 1.12 1.12	0.00 0.00 0.00	$0.5 \\ 0.5 \\ 0.5$	3.7	120.0 120.0 120.0	3.1	1.0	120.4 120.4 120.4	120.0 120.0 120.0	

QKBP-specific information	Value
Number of breakpoints	7
Running time in seconds for writing input file $(t^{\text{write}})$	0.0292
Running time in seconds for executing parametric cut procedure ( $t^{c}$	<sup>ut</sup> ) 0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0008

#### $File jeu\_300\_025\_01.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	25.0%
Edges $(m)$	11,417

			Running time (s)														
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
5.0	29,140.0	0.12	0.29	0.00	_	0.36	0.00	0.00	0.00	0.01	0.4	3.2	120.0	7.6	7.9	9.9	72.0
Avg Min Max		0.12	0.29 0.29 0.29	0.00	_	$0.36 \\ 0.36 \\ 0.36$	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.01	$0.4 \\ 0.4 \\ 0.4$	3.2		7.6	7.9	9.9 9.9 9.9	72.0 72.0 72.0

QKBP-specific information	Value
Number of breakpoints	10
Running time in seconds for writing input file $(t^{\text{write}})$	0.0179
Running time in seconds for executing parametric cut procedure ( $t^{\text{cut}}$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0083

## $File jeu\_300\_025\_02.txt$

Property of graph	Value
Nodes $(n)$	300
Density $(\Delta)$	25.0 %
Edges $(m)$	11.277

Deviation from best OFV (%)											Running time (s)						
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
49.6	281,990.0	0.19	0.03	0.00	_	0.00	_	0.00	0.00	0.01	1.6	3.5	120.0	13.8	120.0	56.4	120.0
Avg Min Max		0.19 0.19 0.19		0.00 0.00 0.00	_	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00 0.00 0.00	0.01	1.6	3.5	120.0 120.0 120.0	13.8	120.0	56.4 56.4 56.4	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	6
Running time in seconds for writing input file $(t^{\text{write}})$	0.0178
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0083

#### $File jeu\_300\_025\_03.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	25.0 %
Edges $(m)$	11,228

Deviation from best OFV (%)											Running time (s)						
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
40.3	231,075.0	0.16	0.13	0.00	_	0.00	_	0.00	0.05	0.01	1.4	4.0	120.0	13.0	120.0	32.6	120.0
Avg Min			0.13 0.13	0.00	_	0.00	_	0.00 0.00	0.05 0.05	0.01 0.01			120.0 120.0			32.6 32.6	120.0 120.0
Max		0.16	0.13	0.00	_	0.00	_	0.00	0.05	0.01	1.4	4.0	120.0	13.0	120.0	32.6	120.0

QKBP-specific information	Value
Number of breakpoints	11
Running time in seconds for writing input file $(t^{\text{write}})$	0.0175
Running time in seconds for executing parametric cut procedure ( $t^{cu}$	<sup>it</sup> ) 0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0085

#### $File jeu\_300\_025\_04.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	25.0%
Edges $(m)$	11,322

Deviation from best OFV (%)												R	unning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
75.9	444,759.0	0.19	0.02	0.00	_	0.00	0.00	0.00	0.01	0.01	1.9	2.1	120.0	10.9	4.8	14.5	120.0
Avg Min Max		0.19	$0.02 \\ 0.02 \\ 0.02$	0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.01 0.01 0.01	0.01 0.01 0.01	1.9 1.9 1.9	2.1	120.0 120.0 120.0	10.9	4.8	14.5 14.5 14.5	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	13
Running time in seconds for writing input file $(t^{\text{write}})$	0.0174
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0084

### $File jeu\_300\_025\_05.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	25.0 %
Edges $(m)$	11,495

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
2.6	14,988.0	1.49	0.35	0.00	0.20	0.38	0.00	0.00	0.00	0.01	0.3	2.8	79.3	6.0	4.5	9.3	25.0
Avg Min Max		1.49	0.35 $0.35$ $0.35$	0.00	0.20 0.20 0.20	0.38	0.00	0.00 0.00 0.00	0.00 0.00 0.00		0.3 0.3 0.3	2.8	79.3 79.3 79.3	6.0	4.5	9.3 9.3 9.3	25.0 25.0 25.0

QKBP-specific information	Value
Number of breakpoints	12
Running time in seconds for writing input file $(t^{\text{write}})$	0.0177
Running time in seconds for executing parametric cut procedure (	$t^{\text{cut}}$ ) 0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0083

### $File jeu\_300\_025\_06.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	25.0 %
Edges $(m)$	11,476

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
45.0	269,782.0	0.04	0.02	0.00	_	0.00	0.00	0.00	0.00	0.01	1.5	4.4	120.0	13.4	3.7	21.1	95.0
Avg Min Max		0.04	$0.02 \\ 0.02 \\ 0.02$	0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	1.5 1.5 1.5	4.4	120.0 120.0 120.0	13.4	3.7	21.1 21.1 21.1	95.0 95.0 95.0

QKBP-specific information	Value
Number of breakpoints	12
Running time in seconds for writing input file $(t^{\text{write}})$	0.0174
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0084

### $File jeu\_300\_025\_07.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	25.0 %
Edges $(m)$	11,279

Deviation from best OFV (%)												R	unning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
84.0	485,263.0	0.45	0.05	0.00	_	0.02	0.00	0.00	0.07	0.00	1.9	1.3	120.0	10.4	4.4	20.3	120.0
Avg Min Max		0.45	$0.05 \\ 0.05 \\ 0.05$	0.00 0.00 0.00	_	0.02 $0.02$ $0.02$	0.00	0.00 0.00 0.00	0.07 0.07 0.07	0.00 0.00 0.00	1.9	1.3	120.0 120.0 120.0	10.4	4.4	20.3 20.3 20.3	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	15
Running time in seconds for writing input file $(t^{\text{write}})$	0.0171
Running time in seconds for executing parametric cut procedu	re $(t^{\text{cut}})$ 0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0079

#### $File jeu\_300\_025\_08.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	25.0 %
Edges $(m)$	11,230

				Ru	ınning	time	(s)										
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
1.5	9,343.0	0.67	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.2	2.1	42.3	4.8	1.7	2.3	27.0
Avg Min Max		0.67 0.67 0.67	0.67	0.00	0.00 0.00 0.00	0.00	0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	$0.2 \\ 0.2 \\ 0.2$	2.1 2.1 2.1	42.3 42.3 42.3	4.8	1.7 1.7 1.7	2.3 2.3 2.3	27.0 27.0 27.0

QKBP-specific information	Value
Number of breakpoints	12
Running time in seconds for writing input file $(t^{\text{write}})$	0.0175
Running time in seconds for executing parametric cut procedu	re $(t^{\text{cut}})$ 0.0150
Running time in seconds for reading result file $(t^{read})$	0.0081

#### $File jeu\_300\_025\_09.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	25.0 %
Edges $(m)$	11,282

				R	unning	time	(s)										
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
43.3	250,761.0	0.41	0.01	0.00	_	0.01	0.00	0.00	0.00	0.01	1.6	3.5	120.0	13.5	13.5	17.7	117.0
Avg Min Max		0.41 0.41 0.41	0.01	0.00 0.00 0.00	_	0.01	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.01 0.01 0.01	1.6	3.5	120.0 120.0 120.0	13.5	13.5	17.7 17.7 17.7	117.0 117.0 117.0

QKBP-specific information	Value
Number of breakpoints	11
Running time in seconds for writing input file $(t^{\text{write}})$	0.0171
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0087

#### $File jeu\_300\_025\_10.txt$

]	Property of graph	Value
]	Nodes (n)	300
]	Density $(\Delta)$	25.0 %
]	Edges $(m)$	11,422

		Running time (s)															
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
65.9	383,377.0	0.25	0.00	0.00	_	0.00	0.00	0.00	0.00	0.01	1.9	2.4	120.0	20.1	14.4	39.5	120.0
Avg Min		0.25	0.00	0.00	_	0.00	0.00	0.00 0.00	0.00 0.00	0.01	1.9	2.4	120.0 120.0	20.1	14.4	39.5 39.5	120.0 120.0
Max		0.25	0.00	0.00	_	0.00	0.00	0.00	0.00	0.01	1.9	2.4	120.0	20.1	14.4	39.5	120.0

QKBP-specific information	Value
Number of breakpoints	8
Running time in seconds for writing input file $(t^{\text{write}})$	0.0178
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0078

### $File jeu\_300\_050\_01.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	50.0 %
Edges $(m)$	22,680

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
45.7	513,379.0	0.19	0.08	0.00	_	0.00	_	0.50	1.40	0.01	1.5	3.2	120.0	13.8	120.0	120.1	120.0	
Avg Min Max		0.19 0.19 0.19	0.08	0.00 0.00 0.00	_	0.00 0.00 0.00	_	0.50 0.50 0.50	1.40 1.40 1.40	0.01		3.2	120.0 120.0 120.0	13.8	120.0 120.0 120.0	120.1 120.1 120.1	120.0 120.0 120.0	

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0338
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0081

#### $File jeu\_300\_050\_02.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	50.0 %
Edges $(m)$	22,591

		Running time (s)															
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
10.1	105,543.0	0.00	0.00	0.00	_	0.00	0.00	0.00	1.34	0.01	0.7	8.6	120.0	9.6	6.7	116.8	120.0
Avg		0.00	0.00	0.00	_	0.00	0.00	0.00	1.34	0.01	0.7	8.6	120.0	9.6	6.7	116.8	120.0
Min		0.00	0.00	0.00	_	0.00	0.00	0.00	1.34	0.01	0.7	8.6	120.0	9.6	6.7	116.8	120.0
Max		0.00	0.00	0.00	_	0.00	0.00	0.00	1.34	0.01	0.7	8.6	120.0	9.6	6.7	116.8	120.0

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0334
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0085

#### $File jeu\_300\_050\_03.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	50.0 %
Edges $(m)$	22,505

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
76.8	875,788.0	0.50	0.03	0.00	_	0.00	0.00	0.00	0.84	0.01	1.9	2.0	120.0	11.0	7.1	120.4	120.0	
Avg Min Max		0.50 0.50 0.50	0.03	0.00 0.00 0.00	_	0.00	0.00	0.00 0.00 0.00	0.84 0.84 0.84	0.01 0.01 0.01	1.9 1.9 1.9	2.0	120.0 120.0 120.0	11.0	7.1 7.1 7.1	120.4 120.4 120.4	120.0 120.0 120.0	

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0332
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0160
Running time in seconds for reading result file $(t^{read})$	0.0079

### $File jeu\_300\_050\_04.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	50.0 %
Edges $(m)$	22,556

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
26.8	307,124.0	0.06	0.00	0.00	_	0.00	0.00	0.00	0.37	0.01	1.1	4.2	120.0	12.8	6.6	108.1	120.0	
Avg Min Max		0.06	0.00 0.00 0.00	0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.37 0.37 0.37	0.01 0.01 0.01	1.1	4.2	120.0 120.0 120.0	12.8	6.6	108.1 108.1 108.1	120.0 120.0 120.0	

QKBP-specific information	Value
Number of breakpoints	7
Running time in seconds for writing input file $(t^{\text{write}})$	0.0344
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0150
Running time in seconds for reading result file $(t^{read})$	0.0090

### $File jeu\_300\_050\_05.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	50.0 %
Edges $(m)$	22,561

Deviation from best OFV (%)											Running time (s)						
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
64.1	727,820.0	0.22	0.02	0.00	_	0.00	0.00	0.17	0.72	0.01	1.8	2.6	120.0	12.3	46.7	120.4	120.0
Avg Min Max		0.22	$0.02 \\ 0.02 \\ 0.02$	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.17 0.17 0.17	0.72 0.72 0.72	0.01 0.01 0.01	1.8	2.6	120.0 120.0 120.0	12.3	46.7	120.4 120.4 120.4	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	9
Running time in seconds for writing input file $(t^{\text{write}})$	0.0343
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0080

#### $File jeu\_300\_050\_06.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	50.0 %
Edges $(m)$	22,598

Deviation from best OFV (%)										Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
65.7	734,053.0	0.07	0.02	0.00	_	0.00	_	0.80	0.83	0.02	1.7	2.5	120.0	12.2	120.0	120.1	120.0
Avg Min Max		0.07	0.02 $0.02$ $0.02$	0.00 0.00 0.00	_	0.00 0.00 0.00	_	0.80 0.80 0.80	0.83 0.83 0.83	$0.02 \\ 0.02 \\ 0.02$	1.7	2.5	120.0 120.0 120.0	12.2	120.0	120.1 120.1 120.1	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	4
Running time in seconds for writing input file $(t^{\text{write}})$	0.0335
Running time in seconds for executing parametric cut procedure ( $t^{\text{cut}}$ )	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0087

### $File jeu\_300\_050\_07.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	50.0 %
Edges $(m)$	22,729

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
4.2	43,595.0	0.32	0.00	0.00	_	0.00	0.00	0.00	0.16	0.01	0.4	2.9	120.0	6.9	2.4	40.8	120.0	
Avg Min Max		0.32	0.00 0.00 0.00	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	0.16 0.16 0.16	$0.01 \\ 0.01 \\ 0.01$	$0.4 \\ 0.4 \\ 0.4$	2.9	120.0 120.0 120.0	6.9	2.4 2.4 2.4	40.8 40.8 40.8	120.0 120.0 120.0	

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file $(t^{\text{write}})$	0.0335
Running time in seconds for executing parametric cut procedure $(t^{\text{cut}})$	0.0160
Running time in seconds for reading result file $(t^{\text{read}})$	0.0081

#### $File jeu\_300\_050\_08.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	50.0 %
Edges $(m)$	22,411

Deviation from best OFV (%)											Running time (s)							
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	
67.8	767,977.0	0.31	0.13	0.00	_	0.00	0.00	0.00	1.16	0.01	1.8	2.3	120.0	16.8	6.2	120.4	120.0	
Avg Min		0.31	0.13 0.13	0.00 0.00	_	0.00	0.00	0.00 0.00	1.16 1.16	0.01 0.01	1.8 1.8	2.3	120.0	16.8 16.8	6.2 6.2	120.4 120.4	120.0 120.0	
Max		0.31	0.13	0.00	_	0.00	0.00	0.00	1.16	0.01	1.8	2.3	120.0	16.8	6.2	120.4	120.0	

QKBP-specific information	Value
Number of breakpoints	5
Running time in seconds for writing input file $(t^{\text{write}})$	0.0348
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0160
Running time in seconds for reading result file $(t^{read})$	0.0083

### $File jeu\_300\_050\_09.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	50.0 %
Edges $(m)$	22,461

Deviation from best OFV (%)												R	unning	time	(s)		
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
66.7	761,351.0	0.10	0.00	0.00	_	0.00	0.00	0.00	1.48	0.01	1.9	2.7	120.0	12.0	4.7	42.3	120.0
Avg Min Max		0.10	0.00 0.00 0.00	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.00 0.00 0.00	1.48 1.48 1.48	0.01 0.01 0.01	1.9 1.9 1.9	2.7	120.0 120.0 120.0	12.0	4.7 4.7 4.7	42.3 42.3 42.3	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	6
Running time in seconds for writing input file $(t^{\text{write}})$	0.0339
Running time in seconds for executing parametric cut procedure (t	cut) 0.0150
Running time in seconds for reading result file $(t^{\text{read}})$	0.0085

#### $File jeu\_300\_050\_10.txt$

Property of graph	Value
Nodes (n)	300
Density $(\Delta)$	50.0 %
Edges $(m)$	22,637

	Deviation from best OFV (%)							Running time (s)									
$\gamma$	Best OFV $\mid$	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly	QKBP	RG	IHEA	LDP	DP	QK	Gurobi	Hexaly
87.1	996,070.0	0.00	0.01	0.00	_	0.00	0.00	0.17	0.60	0.01	2.0	1.6	120.0	10.9	7.2	120.1	120.0
Avg Min Max		0.00 0.00 0.00	0.01	0.00 0.00 0.00	_	0.00 0.00 0.00	0.00	0.17 0.17 0.17	0.60 0.60 0.60	0.01 0.01 0.01	2.0	1.6	120.0 120.0 120.0	10.9	7.2	120.1 120.1 120.1	120.0 120.0 120.0

QKBP-specific information	Value
Number of breakpoints	2
Running time in seconds for writing input file $(t^{\text{write}})$	0.0342
Running time in seconds for executing parametric cut procedure	$(t^{\text{cut}})$ 0.0150
Running time in seconds for reading result file $(t^{read})$	0.0085