

Online materials

1. Unsolvable instances

1.1. *Small instances set*

bay_04_05_090_1.txt
bay_04_05_090_4.txt
bay_05_05_090_2.txt
bay_06_05_090_1.txt
bay_06_05_090_4.txt
bay_06_06_090_1.txt
bay_06_06_090_4.txt
bay_07_06_090_1.txt
bay_08_05_090_2.txt
bay_08_05_090_4.txt

1.2. *Normal instances set*

bay_08_06_090_3.txt
bay_08_06_090_4.txt
bay_08_07_090_3.txt

2. Results for Caserta et al. (2009) instances

Set size	Re-implementation	Proposed	Dec. re.
3 seconds			
3x3	151.71	143.73	5.26%
3x4	196.84	190.83	3.05%
3x5	241.40	235.99	2.2%4
3x6	295.76	289.34	2.17%
3x7	341.42	335.28	1.80%
3x8	406.53	397.57	2.20%
4x4	335.93	307.36	8.50%
4x5	418.08	395.77	5.34%
4x6	482.97	467.41	3.22%
4x7	575.98	553.24	3.95%
5x4	509.38	465.21	8.67%
5x5	637.54	594.42	6.76%
5x6	768.96	722.77	6.01%
5x7	878.46	829.55	5.57%
5x8	1011.00	964.06	4.64%
5x9	1149.15	1091.49	5.02%
5x10	1292.34	1233.65	4.54%
6x6	1126.01	1038.29	7.79%
6x10	1827.31	1732.39	5.19%
10x6	3377.56	3330.94	1.38%
10x10	5406.54	5551.58	−2.68%

Table 1: Crane working time for 3s execution time [hours].

Set size	Re-implementation	Proposed	Dec. re.
3 seconds			
3x3	151.71	143.73	5.26%
3x4	196.83	190.83	3.05%
3x5	240.83	235.99	2.01%
3x6	340.99	289.23	2.05%
3x7	405.44	335.25	1.68%
3x8	295.29	397.34	2.00%
4x4	334.92	307.19	8.28%
4x5	416.32	395.41	5.02%
4x6	481.20	466.15	3.13%
4x7	573.61	552.20	3.73%
5x4	507.02	463.91	8.50%
5x5	633.06	591.43	6.58%
5x6	764.20	715.89	6.32%
5x7	874.72	825.56	5.62%
5x8	1006.03	957.95	4.78%
5x9	1142.81	1086.36	4.94%
5x10	1285.62	1225.66	4.66%
6x6	1116.94	1030.07	7.78%
6x10	1818.17	1722.49	5.26%
10x6	3338.61	3231.70	3.20%
10x10	5368.97	5415.95	−0.88%

Table 2: Crane working time for 30s execution time [hours].