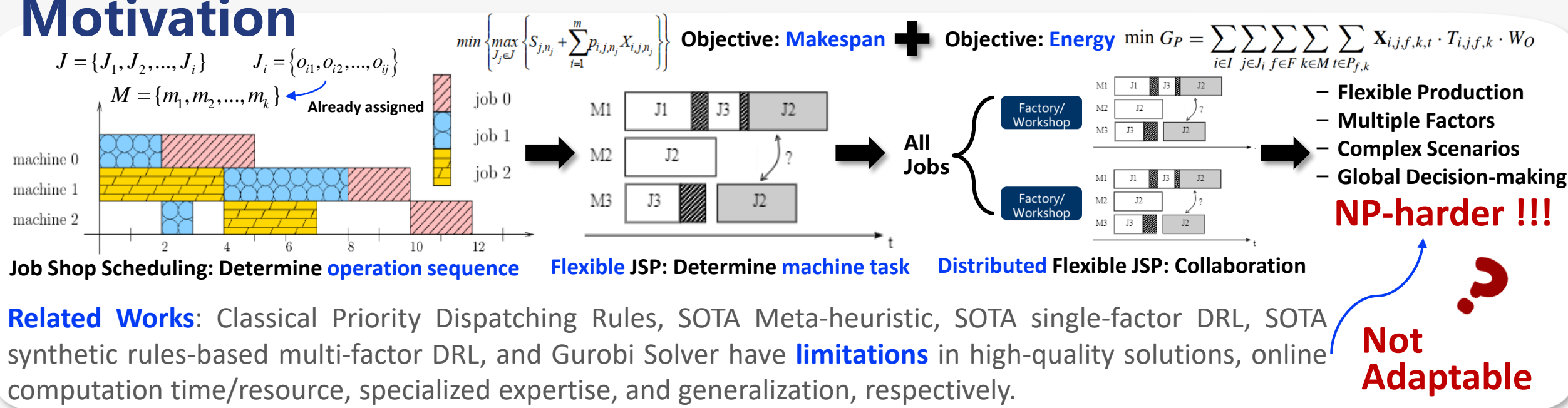


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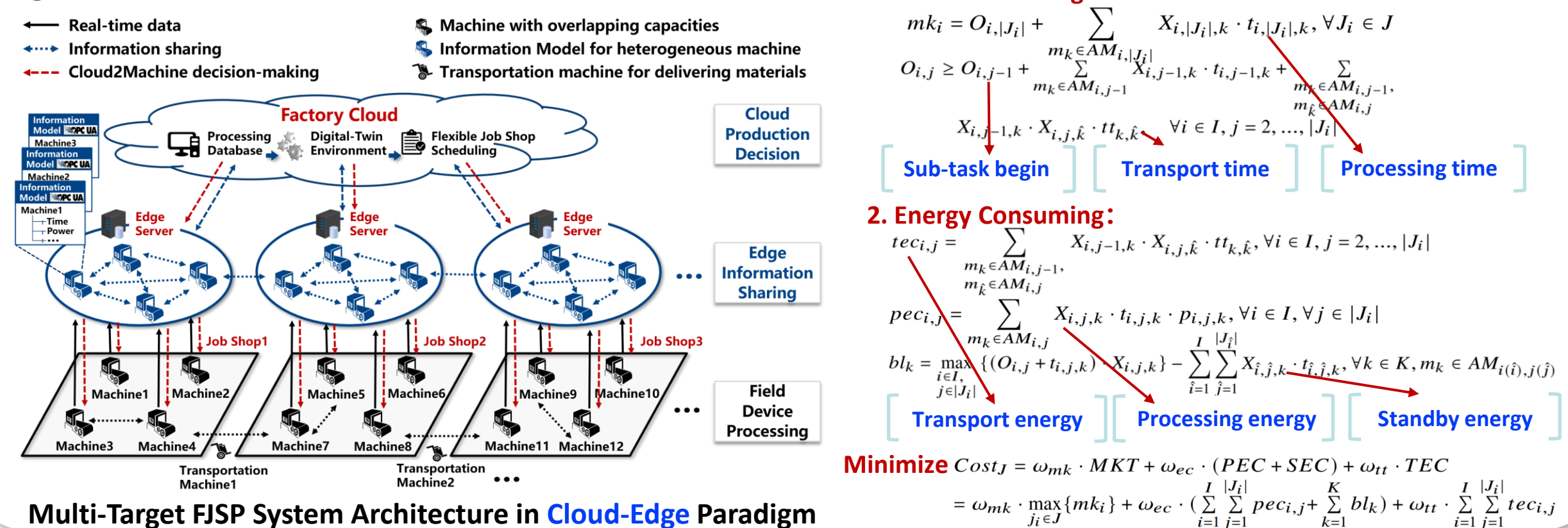
End-to-end Multi-target Flexible Job Shop Scheduling with Deep Reinforcement Learning

Rongkai Wang, Yiyang Jing, Chaojie Gu, Shibo He, Jiming Chen

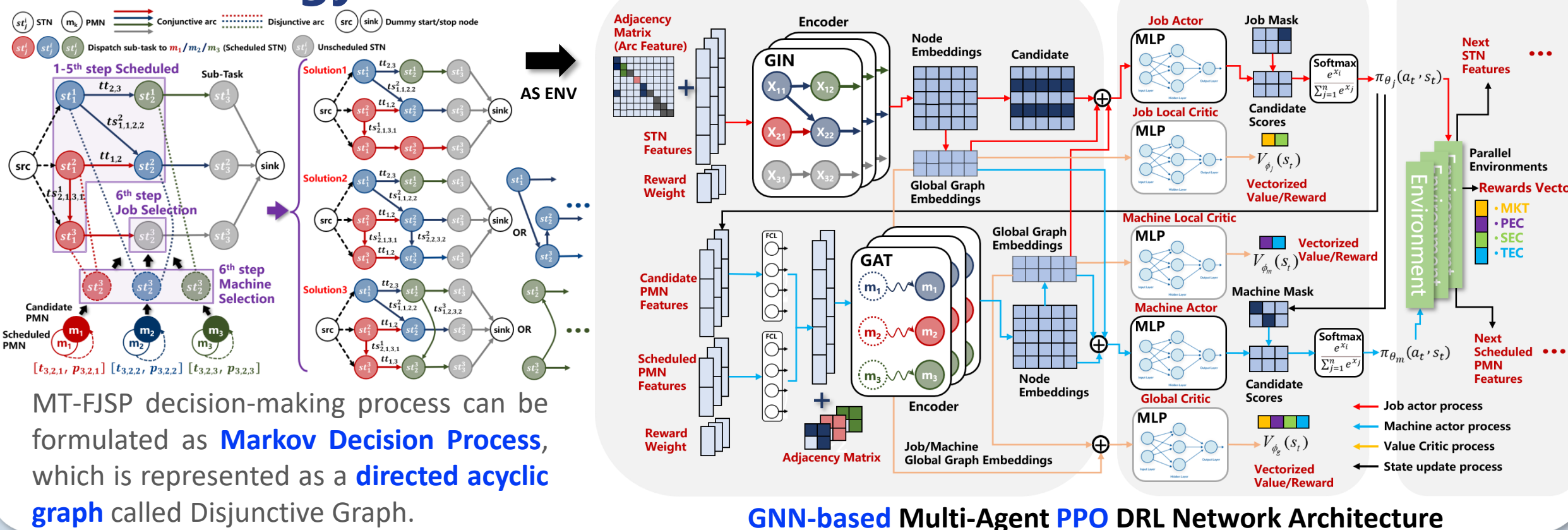
Motivation



System Model



Methodology

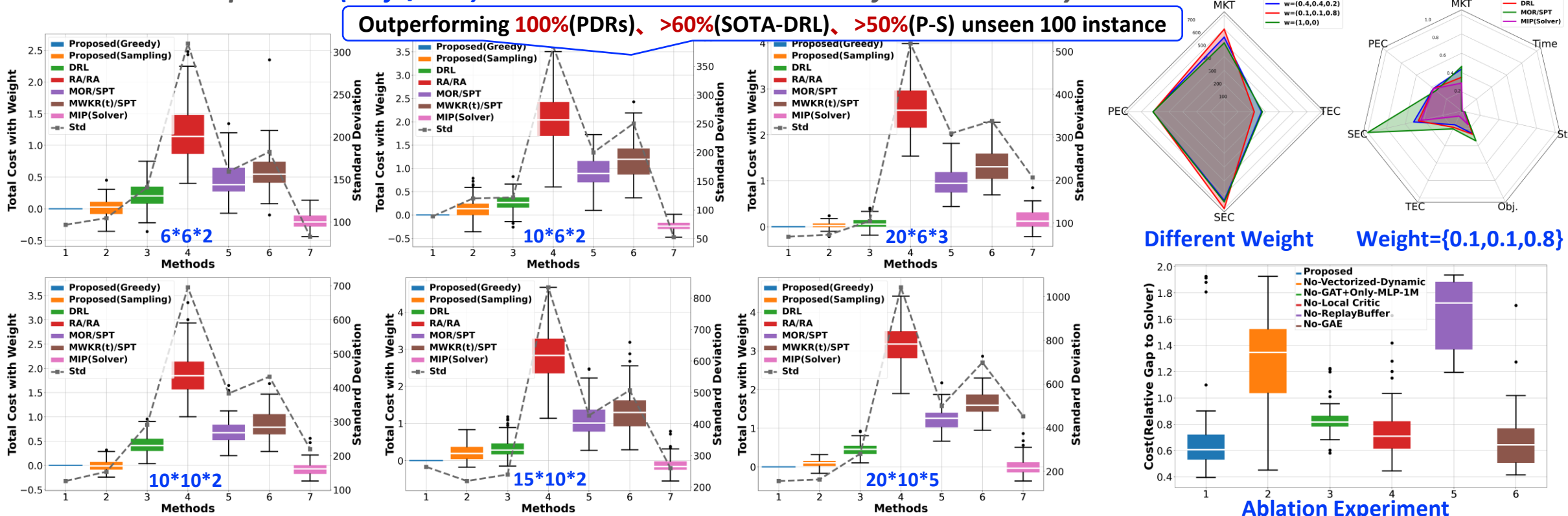


Experimental Results

A. Overview Results (Obj. / Time)

Weight={0.4,0.4,0.2}		RESULTS OF ALL APPROACHES ON UNSEEN 100 TESTING INSTANCES.										
Size	P-G	P-S	DRL [23]	RA/RA	MOR/SPT ¹	MIP (Solver)	Instance ²	P-G	RGA [43]	Instance	P-G	2SGA [44]
6 × 6 × 2	<u>732.5</u>	742.2	874.5	1586.6	1045.6	585.8*	100	732.5	600.2	100	732.5	492.0
Time(s)	0.529s	0.517s	0.472s	0.141s	0.142s	18.340s		0.529s	638.8s		0.529s	1340.4s
10 × 6 × 2	<u>674.5</u>	766.2	838.8	2069.9	1288.2	508.4	100	674.5	653.3	100	674.5	532.8
Time(s)	0.883s	0.878s	0.818s	0.421s	0.433s	60s		0.883s	1994.0s		0.883s	3633.1s
20 × 6 × 3	<u>949.1</u>	974.2	1014.8	3405.3	1878.3	1097.9	50	957.3	990.4	25	953.3	846.9
Time(s)	4.350s	4.293s	4.092s	2.412s	2.398s	60s		4.338s	7787.1s		4.333s	15134.7s
10 × 10 × 2	<u>1654.8</u>	<u>1633.3</u>	2357.9	4759.3	2788.2	1538.7	70	1656.1	1506.0	30	1644.2	1012.7
Time(s)	2.443s	2.439s	2.347s	1.255s	1.257s	60s		2.436s	5590.3s		2.425s	13061.4s
15 × 10 × 2	<u>1614.0</u>	1897.1	2115.2	6057.6	3272.0	1407.6	30	1618.1	1615.2	10	1686.9	964.6
Time(s)	6.272s	6.201s	6.173s	3.357s	3.346s	240s		6.963s	12386.0s		8.380s	30033.3s
20 × 10 × 5	<u>2089.9</u>	2250.5	3041.9	8682.6	4648.6	2188.3	15	<u>2061.3</u>	2451.3	5	2026.5	1420.3
Time(s)	11.432s	11.353s	11.151s	7.195s	7.165s	600s		11.302s	24608.8s		11.085s	57145.1s

B. Relative Gap to P-G (Obj. / Std) on unseen 100 instances + Performance Analysis



C. Average MKT, PEC, SEC, TEC, Obj., Std, and Time on unseen 100 instances + Generalization

