TABLE I: MPOPF performance comparison - ADS10 test system for 24h

Metric	BFM-NL	LinDistFlow
Full horizon		
Substation power cost ($)	204.27	204.28
Substation real power (kW)	1528.35	1528.4
Line loss (kW)	0.28	0.33
Substation reactive power (kVAR)	428.9	795.56
PV reactive power (kVAR)	174.41	-0.69
Battery reactive power (kVAR)	192.8	-0.37
Computation		
Total Simulation Time (s)	2.64	0.77

TABLE II: MPOPF feasibility comparison - ADS10 test system for 24h

Metric	BFM-NL	LinDistFlow
Max. all-time discrepancy		
Voltage (pu)	0.00001	0.00001
Line loss (kW)	0.000009	0.000006
Substation power (kW)	0.000014	0.02410
Substation reactive power (kVAR)	0.070706	0.05618

TABLE III: MPOPF performance comparison - IEEE123-A test system for 24h

Metric	BFM-NL	LinDistFlow$^{\mathbb{O}}$
Largest subproblem		
Decision variables	15144	12096
Linear constraints	18456	22200
Nonlinear constraints	3672	0
Simulation results		
Substation power cost ($)	2787.44	2798.4
Substation real power (kW)	20984.89	21065.89
Line loss (kW)	380.09	461.38
Substation reactive power (kVAR)	6835.82	12259.29
PV reactive power (kVAR)	1972.27	195.12
Battery reactive power (kVAR)	3709.71	204.63
Computation		
Total Simulation Time (s)	17.44	0.85

TABLE IV: MPOPF feasibility comparison - IEEE123-A tests system for 24h

Metric	BFM-NL	LinDistFlow
Max. all-time discrepancy		
Voltage (pu)	0.00007	0.00206
Line loss (kW)	0.01818	1.8074
Substation power (kW)	0.43164	32.362
Substation reactive power (kVAR)	1.0102	64.403

TABLE V: MPOPF performance comparison - IEEE123-B test system for 24h

Metric	BFM-NL	LinDistFlow$^{\mathbb{O}}$
Largest subproblem		
Decision variables	17184	14136
Linear constraints	24168	30360
Nonlinear constraints	4080	0
Simulation results		
Substation power cost ($)	1973.83	1987.78
Substation real power (kW)	16594.11	16693.01
Line loss (kW)	234.78	333.78
Substation reactive power (kVAR)	-404.91	11055.41
PV reactive power (kVAR)	7255.22	1535.29
Battery reactive power (kVAR)	5371.97	-190.93
Computation		
Total Simulation Time (s)	23.75	1.66

TABLE VI: MPOPF feasibility comparison - IEEE123-B test system for 24h

Metric	BFM-NL	LinDistFlow
Max. all-time discrepancy		
Voltage (pu)	0.000059	0.001599
Line loss (kW)	0.00776	1.055093
Substation power (kW)	0.217433	23.344019
Substation reactive power (kVAR)	1.016894	45.925288

TABLE VII: MPOPF performance comparison - IEEE730 test system for 24h

Metric	BFM-NL	LinDistFlow$^{\mathbb{O}}$
Largest subproblem		
Decision variables	00000	67224
Linear constraints	00000	131616
Nonlinear constraints	0000	0
Simulation results		
Substation power cost ($)	0000	1539.4
Substation real power (kW)	0000	12313.19
Line loss (kW)	0000	176.41
Substation reactive power (kVAR)	0000	4626.23
PV reactive power (kVAR)	0000	-18.69
Battery reactive power (kVAR)	0000	-14.33
Computation		
Total Simulation Time (s)	0000	7.67

TABLE VIII: MPOPF feasibility comparison - IEEE730 test system for 24h

Metric	BFM-NL	LinDistFlow
Max. all-time discrepancy		
Voltage (pu)	0000	0.0227
Line loss (kW)	0000	2.6696
Substation power (kW)	0000	12.1844
Substation reactive power (kVAR)	0000	7.3131