

The design names below adhere to the naming conventions described in the following example.

In design PS_25_50,

PS = design was optimized using IMSPE for the PHYSICAL + SIMULATOR components

25_50 = (simulator, discrepancy) common correlation values used for the optimization were (0.25, 0.50)

The IMSPE values were calculated using the common correlation values that were used for the design optimization.

IMSPE values should only be compared across similar parameter values and numbers of inputs.

For example, the IMSPE values in the six red boxes can be compared.

The design construction times listed were the time needed to construct the design on a machine with a 3.5 GHz Quad-Core Intel Core i5 processor.

*The (40, 4, 50, 5) and (40, 4, 60, 6) designs were constructed using 16 cores of a single node on the Bluehive cluster at the Center for Integrated Research Computing at the University of Rochester. The authors thank the Center for Integrated Research Computing (CIRC) at the University of Rochester for providing computational resources and technical support.

design size	design	combined IMSPE value	construction time (min)
(np, dx, ns, dx+dt) = (10, 2, 15, 3)	PS_25_25	0.0178	3.20
	PS_25_50	0.0146	3.30
	PS_50_25	0.0135	2.85
	PS_50_50	0.0080	2.91
	P_25_25	0.0393	0.30
	P_25_50	0.0345	0.30
	P_50_25	0.0179	0.29
	P_50_50	0.0131	0.31
	S_25_25	0.0260	1.41
	S_25_50	0.0159	1.36
	S_50_25	0.0200	1.35
	S_50_50	0.0106	1.30

design size	design	combined IMSPE value	construction time (min)
(np, dx, ns, dx+dt) = (20, 2, 30, 3)	PS_25_25	0.0065	16.45
	PS_25_50	0.0049	15.98
	PS_50_25	0.0061	15.49
	PS_50_50	0.0040	15.85
	P_25_25	0.0104	1.52
	P_25_50	0.0096	1.51
	P_50_25	0.0069	1.47
	P_50_50	0.0053	1.45
	S_25_25	0.0103	7.37
	S_25_50	0.0049	7.45
	S_50_25	0.0096	7.34
	S_50_50	0.0045	7.30

design size	design	combined IMSPE value	construction time (min)
(np, dx, ns, dx+dt) = (15, 3, 25, 5)	PS_25_25	0.0836	26.98
	PS_25_50	0.0748	27.27
	PS_50_25	0.0369	27.27
	PS_50_50	0.0236	27.29
	P_25_25	0.1999	1.83
	P_25_50	0.1883	1.83
	P_50_25	0.0719	1.83
	P_50_50	0.0573	1.82
	S_25_25	0.1093	14.10
	S_25_50	0.0898	14.36
	S_50_25	0.0535	14.16
	S_50_50	0.0312	14.55

design size	design	combined IMSPE value	construction time (min)
(np, dx, ns, dx+dt) = (30, 3, 50, 5)	PS_25_25	0.0311	256.31
	PS_25_50	0.0224	258.04
	PS_50_25	0.0159	249.75
	PS_50_50	0.0089	251.91
	P_25_25	0.0695	17.73
	P_25_50	0.0636	17.86
	P_50_25	0.0233	16.98
	P_50_50	0.0173	17.11
	S_25_25	0.0450	136.97
	S_25_50	0.0241	137.26
	S_50_25	0.0260	131.05
	S_50_50	0.0116	132.76

design size	design	combined IMSPE value	construction time (min)
	PS_25_25	0.2544	47.31
	PS_25_50	0.2425	46.77
	PS_50_25	0.1019	46.02
	PS_50_50	0.0809	45.75
	P_25_25	0.3706	6.90
(np, dx, ns, dx+dt)	P_25_50	0.3524	6.88
= (20, 4, 25, 5)	P_50_25	0.1511	6.85
	P_50_50	0.1267	6.78
	S_25_25	0.3185	16.68
	S_25_50	0.3047	16.50
	S_50_25	0.1329	16.40
	S_50_50	0.1104	16.78

design size	design	combined IMSPE value	construction time* (min)
	PS_25_25	0.1263	561.93
	PS_25_50	0.1111	558.18
	PS_50_25	0.0462	558.22
	PS_50_50	0.0305	555.06
	P_25_25	0.1993	122.01
(np, dx, ns, dx+dt)	P_25_50	0.1865	121.84
= (40, 4, 50, 5)	P_50_25	0.0678	121.11
	P_50_50	0.0511	118.53
	S_25_25	0.1644	238.48
	S_25_50	0.1463	236.04
	S_50_25	0.0672	230.23
	S_50_50	0.0432	234.11

design size	design	combined IMSPE value	construction time (min)
	PS_25_25	0.2363	88.52
	PS_25_50	0.2213	88.11
	PS_50_25	0.0927	89.56
	PS_50_50	0.0740	88.29
	P_25_25	0.4095	8.00
(np, dx, ns, dx+dt)	P_25_50	0.3880	7.88
= (20, 4, 30, 6)	P_50_25	0.1695	7.76
	P_50_50	0.1439	7.83
	S_25_25	0.2898	40.34
	S_25_50	0.2744	41.02
	S_50_25	0.1213	41.28
	S_50_50	0.0976	39.74

design size	design	combined IMSPE value	construction time* (min)
	PS_25_25	0.1193	1464.50
	PS_25_50	0.0991	1459.60
	PS_50_25	0.0439	1537.00
	PS_50_50	0.0272	1475.60
	P_25_25	0.2192	101.57
(np, dx, ns, dx+dt)	P_25_50	0.2102	100.38
= (40, 4, 60, 6)	P_50_25	0.0740	100.32
	P_50_50	0.0574	98.67
	S_25_25	0.1474	702.75
	S_25_50	0.1303	721.06
	S_50_25	0.0628	671.57
	S_50_50	0.0381	671.83