

Table A1: Performance of Noisy Bayesian Optimization with Different Acquisition Functions on Test Functions

			Ackley (optimal value =0.0)				Bohachevsky (optimal value =0.0)				Booth (optimal value =0.0)				Eason(optimal value =-1.0)				Three Hump Camel (optimal value =0.0)				
			25%	50%	75%	100%	25%	50%	75%	100%	25%	50%	75%	100%	25%	50%	75%	100%	25%	50%	75%	100%	
qSR	Constant	RBF	mean	5.26837386	4.55083874	4.24504532	4.23794638	0.07388865	0.07203123	0.07118676	0.071027684	0.00270056	0.002629863	0.00269129	0.00269129					0.39465637	0.22835229	0.19831407	0.16429281
		Matern(3/2)	var	4.31995981	4.62800259	4.74242971	4.74572882	0.06269046	0.06287388	0.06294359	0.06294359	0.00230954	0.00230388	0.00230641	0.00230641					0.25917843	0.1814818	0.16878313	0.15344598
			mean	7.61776305	7.19800825	6.99306251	6.91559104	2.03658638	1.94775669	1.85648393	1.763975661	0.13391823	0.28179224	0.14167382	0.10938267					0.34463317	0.28660712	0.27899417	0.27796217
	Linear	Matern(5/2)	var	4.41464513	4.64313884	4.71469436	4.74349699	1.55057098	1.54960676	1.5621338	1.535803657	0.6150475	0.56810794	0.02175384	0.20565004					0.23371948	0.21445052	0.20806039	0.20728119
			mean	6.12988077	5.58756491	5.3846497	5.23024046	1.01409084	0.06786771	0.05809968	0.057247572	0.0072558	0.00536528	0.00504589	0.00500909	-0.3810611	-0.4493642	-0.4540077	-0.4557483	0.37712446	0.2554956	0.25157343	0.23879742
		RBF	var	4.23729457	4.42516976	4.48045236	4.51724771	0.15759922	0.0921119	0.07565674	0.075110888	0.00735193	0.00554453	0.00534768	0.005363	0.31388032	0.36312361	0.36226766	0.36026979	0.24979199	0.22528316	0.22772362	0.2297595
	Quadratic	Matern(3/2)	mean	5.26496885	5.05634512	4.90423493	4.69366689	0.67917127	0.65541606	0.5858265	0.562732902	0.04509324	0.03864458	0.03567823	0.03021789					0.40229399	0.24301422	0.22617636	0.1909988
			var	4.53653134	4.66425375	4.68602846	4.74830667	0.52663757	0.50739074	0.47174347	0.4466711781	0.06868121	0.05828421	0.05319508	0.04207656					0.25251805	0.19972384	0.18426204	0.15525908
		RBF	mean	8.22954031	7.80448164	7.61740267	7.51874116	2.07977096	1.99427627	1.91617804	1.815298158	0.40062771	0.3427614	0.1860522	0.14623584					0.364647	0.2551663	0.24535162	0.24226041
qUCB	Constant	Matern(3/2)	var	4.80095139	4.93792299	5.12634931	4.99908144	1.52779237	1.53285907	1.55590162	1.527203492	0.73351176	0.61502147	0.31911593	0.30742743					0.22999223	0.19983176	0.18941752	0.19079521
			mean	4.02199802	5.16358817	4.71917438	4.58390094	0.19076978	0.14794198	0.12699676	0.122860386	0.01291444	0.00860045	0.00660499	0.0065478					0.37113734	0.26150819	0.21874012	0.20905414
		RBF	var	4.77110811	4.09864117	4.29799815	4.3504827	0.2210902	0.19910657	0.17941123	0.170722809	0.02152427	0.0142359	0.00935287	0.00937687					0.22650497	0.21676745	0.19634652	0.18525515
	Linear	Matern(5/2)	mean	5.54073305	5.04937433	4.85983239	4.2843532	3.44E-05	3.38E-05	3.31E-05	3.29E-05	0.11325363	0.09753397	0.08930984	0.08802056					0.34251625	0.18809477	0.18023277	0.17861555
			var	3.45048611	3.35599878	3.4608175	3.08941265	3.89E-05	3.88E-05	3.85E-05	3.85E-05	0.11242391	0.09158122	0.0848524	0.08376049					0.27331048	0.21843318	0.22066029	0.22171462
		RBF	mean	7.18677431	6.94078396	6.62427541	6.45474484	3.25E-05	3.17E-05	3.11E-05	3.08E-05	0.3296142	0.26186412	0.20601766	0.17079664					0.26049043	0.11231161	0.10930283	0.10669316
	Quadratic	Matern(3/2)	var	3.23677943	3.33314958	3.64469394	3.75076923	3.62E-05	3.58E-05	3.55E-05	3.55E-05	0.4563743	0.42908469	0.37182149	0.31840123					0.19785885	0.15155196	0.15041857	0.15064302
			mean	7.13720049	6.59342971	6.19481573	5.77375812	3.42E-05	3.34E-05	3.29E-05	3.26E-05	0.01821512	0.0112209	0.01009002	0.00996584					0.30740748	0.16377675	0.12903475	0.10605489
		RBF	var	2.92450388	2.91680498	2.77733057	3.13112929	3.89E-05	3.87E-05	3.85E-05	3.85E-05	0.02227419	0.01965029	0.01840506	0.01834404					0.22211489	0.20015449	0.14759756	0.14063753
qLogNoisyEI	Constant	Matern(3/2)	mean	3.69429923	2.73204959	1.99803053	1.78633566	0.05625901	0.05189356	0.04942978	0.048653296	0.0021678	0.00214441	0.00214059	0.00213988	-0.4041812	-0.4797065	-0.5387429	-0.5913407	0.41346759	0.15911521	0.11064719	0.07663301
			var	3.8646208	2.97927243	1.64996624	1.59797493	0.04876767	0.04521731	0.044119973	0.044028005	0.00185556	0.00186594	0.00186858	0.00186932	0.34916307	0.32427426	0.31711164	0.32804928	0.25279216	0.15419037	0.12556463	0.10406031
		RBF	mean	4.8290646	4.03424096	3.59629274	3.38087498	2.00617459	1.7089645	1.16333498	1.092470702	0.25726494	0.06371844	0.04115324	0.02400818	0.4024467	-0.5001985	-0.5576041	-0.6068072	0.28080057	0.11040547	0.041386	0.0191379
	Linear	Matern(5/2)	var	4.02963118	4.22757569	4.04010858	4.08909353	1.76529292	1.10330309	0.93534547	0.439924829	0.28330042	0.06747375	0.05357673	0.02012166	0.31065486	0.28624532	0.27854788	0.26909758	0.18160733	0.07327746	0.03796591	0.02259397
			mean	3.99678055	2.60404578	2.23954828	2.11755582	0.21527065	0.13811385	0.10730083	0.099882968	0.00836177	0.00533602	0.00513424	0.0050025	-0.4124415	-0.4387298	-0.4978437	-0.5240845	0.32231804	0.05862621	0.01842321	0.01356631
		RBF	var	4.05143293	3.45238781	3.48639222	3.5191206	0.21725476	0.14341335	0.10953429	0.102483438	0.01172101	0.00695137	0.00676378	0.00659046	0.310688326	0.32406121	0.33728462	0.33456339	0.22194465	0.05508884	0.0217861	0.01415446
	Quadratic	Matern(3/2)	mean	4.02168532	3.19483331	2.94966981	2.84527918	0.65381982	0.62641385	0.55468588	0.530978563	0.04402278	0.03837307	0.03504233	0.03196384					0.41124054	0.15237622	0.13535475	0.11076741
			var	4.47007998	3.93142889	3.98544819	4.01505356	0.54336325	0.52458478	0.48099898	0.454802647	0.06748525	0.05851269	0.05338818	0.04629756					0.23978825	0.15124692	0.14994979	0.13690458
		RBF	mean	5.89988606	5.04809021	4.74124727	4.29268635	2.07399396	1.76698526	1.1675894	1.11470613	0.32052031	0.078426	0.04863124	0.02603943					0.3048278	0.09823593	0.03372444	0.01697456
qPredictiveEntropySearch	Constant	Matern(3/2)	var	4.68844344	4.81987891	4.7759495	4.97158848	1.77435032	1.14588936	0.54509028	0.490341326	0.33614068											