Table 5.1: Function evaluation comparisons for test problems with linear constraints.

Problem	shgo-simpl f.e.	shgo-sobol f.e.	tgo f.e.	Lc-DSIMPL-c -v f.e.	Lc-DSIMPL-c -c f.e.	PSwarm c Minimum f.e.	PSwarm c Minimum p.f.e	PSwarm c Average f.e.	PSwarm c Average p.f.e.	PSwarm c Maximum f.e.	PSwarm c Maximum p.f.e	DIRECT-L1 c p.p. $= 10$ f.e	DIRECT-L1 c p.p. $= 10^2$ f.e.	DIRECT-L1 c p.p. $= 10^6$ f.e.
horst-1	97	24	34	7	249	167	182	$1329^{b(3)}$	$1343^{b(3)}$	$4100^{b(3)}$	$4101^{b(3)}$	287^a	3689	>100000
horst-2	10	11	11	5	171	160	176	424	492	768	867	265^a	10829	>100000
horst-3	6	7	6	5	249	42	43	44	45	46	47	5^a	591	617
horst-4	10	25	24	8	260	90	179	114	194	129	211	58293^a	>100000	>100000
horst-5	20	15	15	8	259	106	150	134	192	214	302	7^a	>100000	>100000
horst-6	22	59	77	10	284	90	172	110	192	133	227	11^a	739^a	>100000
horst-7	10	15	13	10	220	188	201	380	403	919	957	7^a	71^a	>100000
hs021	24	23	23	189	133	110	110	189	192	392	405	97	97	97
hs024	24	15	36	3	141	101	153	118	172	138	195	19^a	57^a	>100000
hs035	37	41	35	630	721	266	311	316	369	327	373	>100000	>100000	>100000
hs036	105	20	103	8	314	179	179	396	401	561	574	25^a	49^a	>100000
hs037	72	63	258	186	9129	127	131	160	167	201	574	7^a	7^a	>100000
hs038	225	1029	389	3379	>100000	53662	54445	58576	59821	65677	67660	7401	5885	6511
hs044	199	35	51	20	440	$148^{b(9)}$	$218^{b(9)}$	$186^{b(9)}$	$281^{b(9)}$	$201^{b(9)}$	$299^{b(9)}$	90283	>100000	>100000
hs076	56	37	44	548	4794	132	198	203	286	275	341	19135	>100000	>100000
s224	166	165	165	49	463	105	107	121	122	157	158	7^a	431	457
s231	99	99	383	2137	655	542	1011	2366	3020	4116	4800	1261	1209	43341
s232	24	15	22	3	141	105	144	119	171	162	236	19^a	57^a	>100000
s250	105	20	103	8	314	296	296	367	375	495	498	25^a	49^a	>100000
s251	72	63	258	186	9127	83	84	129	137	175	180	7^a	7^a	>100000
bunnag1	34	47	39	630	721	132	142	214	228	411	438	1529	1495	1463
bunnag2	46	36	35	16	500	150	153	252	259	410	426	>100000	>100000	>100000
Average	66	88	100	366	>5877	2590	2672	3011	3130	3637	3812	>17213	>28421	>75113

a result is outside the feasible region

b(t) t out of 10 times the global solution was not reached

c results produced by Paulavičius & Žilinskas (2016)