p-valores

Instância	K-trimmed		K-centrum		Hurwicz	
	correlated	anticorrelated	correlated	anticorrelated	correlated	anticorrelated
30.1	0.0011	0.0052	0.0001	0.0025	0.0004	0.5559
30.2	0.0000	0.0000	0.0000	0.0000	0.0000	0.7104
30.3	0.0000	0.0000	0.5000	0.0001	0.1587	0.0009
35.1	0.0000	0.0000	0.0000	0.0138	0.0242	0.2553
35.2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0154
35.3	0.0000	0.0026	0.0000	0.0390	0.0013	0.0006
40.1	0.0000	0.0000	0.0000	0.0000	0.0000	0.4036
40.2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40.3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0051
45.1	0.0000	0.0000	0.0000	0.0000	0.0060	0.0006
45.2	0.0000	0.4065	0.0000	0.0000	0.0000	0.0000
45.3	0.0000	0.0390	0.0000	0.0000	0.0000	0.1802
50.1	0.0000	0.0000	0.0000	0.0000	0.0006	0.0001
50.2	0.0000	0.0000	0.0002	0.0000	0.0000	0.0006
50.3	0.0000	0.0000	0.5000	1.0000	0.0000	0.7104
100.1	0.0603	0.0000	0.0000	0.0000	0.0000	0.0007
100.2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0083
100.3	0.0000	0.0000	0.0000	1.0000	0.0000	0.9879
200.1	0.0000	0.0121	0.0000	0.0010	0.0002	0.4412
200.2	0.9504	0.0001	0.0000	0.0000	0.0072	0.0015
200.3	0.0000	0.0000	0.0000	0.0000	0.0000	0.9940
300.1	0.0050	0.2846	0.6415	0.0000	0.3024	0.0053
300.2	0.4354	0.0000	0.0000	0.0000	0.0000	0.0000
300.3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0130
400.1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0474
400.2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
400.3	0.0000	0.0000	0.0000	0.5617	0.0000	0.9998
500.1	0.0000	0.4296	0.0010	0.0011	0.0071	0.0004
500.2	0.0000	0.0000	0.0000	0.0000	0.0006	0.0801
500.3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
600.1	0.0000	0.0000	0.0172	0.0000	0.0334	0.0264
600.2	0.0000	0.0000	0.0000	0.0000	0.0214	0.0318
600.3	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
700.1	0.0000	0.0046	0.0008	0.0000	0.0042	0.0083
700.2	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000
700.3	0.0000	0.0000	0.0000	0.0000	0.0000	0.9999
800.1	0.0000	0.0000	0.0000	0.0000	0.0013	0.0010
800.2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
800.3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
900.1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002
900.2	0.0000	0.0000	0.0000	0.0000	0.0004	0.0008
900.3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
1000.1	0.0368	0.3340	0.0000	0.0000	0.6740	0.3235
1000.2	0.8801	0.0000	0.0000	0.0000	0.0048	0.0176
1000.3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0185

Teste de mann-whitney one-tailed, com nível de significância 95%.

Hipótese nula: as amostras obtidas pelos algoritmos advêm da mesma distribuição (sem diferença significativa)

Hipótese alternativa: as amostras são diferentes e o transgenético obtém as melhores soluções

Se o p-velor for menor que 0.05, a hipótese nula deve ser rejeitada em favor da hipótese alternativa (transgenético melhor)

Se o p-valor for entre 0.05 e 0.95, não se pode concluir quem foi melhor.

Se o p-valor for maior que 0.95, indica que o memético foi melhor

Aqui o transgenético perdeu em 8 instâncias
ganhou em 239 instâncias

Não apresentou diferença significativa em 23 instâncias

Tempo em segundos

Instância	K-trimmed				K-centrum				Hurwicz			
	correlated		anticorrelated		correlated		anticorrelated		correlated		anticorrelated	
	M-SA	T-SA	M-SA	T-SA	M-SA	T-SA	M-SA	T-SA	M-SA	T-SA	M-SA	T-SA
30.1	1.0940	0.5273	1.0927	0.5197	1.1093	0.5460	1.1243	0.5643	1.1020	0.5443	1.1107	0.5390
30.2	1.0900	0.5293	1.0900	0.5267	1.1053	0.5430	1.1017	0.5373	1.0990	0.5340	1.1103	0.5523
30.3	1.0960	0.5263	1.0620	0.4973	1.0957	0.5183	1.0617	0.5100	1.0967	0.5263	1.1013	0.5110
35.1	1.2310	0.5790	1.2040	0.5733	1.2457	0.5807	1.2557	0.6107	1.2373	0.5953	1.2357	0.5983
35.2	1.2240	0.5770	1.2133	0.5747	1.2267	0.5707	1.2190	0.5680	1.2273	0.5903	1.2450	0.6017
35.3	1.2430	0.5727	1.2103	0.5737	1.2490	0.5890	1.2097	0.5643	1.2473	0.5893	1.2300	0.5683
40.1	1.3120	0.6937	1.3243	0.6643	1.3497	0.6823	1.3407	0.6967	1.3470	0.6990	1.3503	0.7053
40.2	1.3047	0.6777	1.3087	0.6647	1.3043	0.6640	1.3130	0.6717	1.3180	0.6857	1.3157	0.6827
40.3	1.3150	0.6850	1.3220	0.6550	1.3360	0.6797	1.3403	0.6747	1.3220	0.6943	1.3400	0.6887
45.1	1.5167	0.7703	1.5020	0.7710	1.5117	0.7377	1.5293	0.7727	1.5367	0.7980	1.5257	0.7633
45.2	1.5247	0.7477	1.4880	0.7680	1.5390	0.8027	1.5080	0.7760	1.5283	0.7850	1.5237	0.7673
45.3	1.5063	0.7380	1.5070	0.7467	1.5297	0.7580	1.5227	0.7677	1.5300	0.7520	1.5463	0.7863
50.1	1.5807	0.8277	1.6117	0.8483	1.6453	0.8550	1.6327	0.8693	1.6373	0.8630	1.6167	0.8433
50.2	1.5960	0.8217	1.6070	0.8433	1.6507	0.8500	1.6387	0.8397	1.6473	0.8627	1.6113	0.8460
50.3	1.6197	0.8030	1.5977	0.8340	1.6437	0.8123	1.6917	0.9143	1.6473	0.8337	1.6523	0.8857
100.1	3.5657	1.9257	3.6243	1.8760	3.5753	1.8900	3.5947	2.0007	3.6107	2.0100	3.5900	2.0160
100.2	3.6020	1.8977	3.6133	1.9457	3.6093	1.9197	3.5967	1.9997	3.6130	1.9817	3.5900	2.1143
100.3	3.6303	1.9457	3.5800	1.9160	3.6333	2.0213	3.6690	2.0707	3.6150	1.8843	3.6127	2.0630
200.1	9.2013	5.7600	9.0917	5.6920	9.4740	5.8330	9.1777	5.9167	9.4793	5.8657	9.2267	5.9530
200.2	9.0883	5.6730	8.7593	5.6090	9.1243	5.7610	9.2270	5.5963	8.9067	5.7340	9.0147	5.8697
200.3	9.2553	5.8137	9.2153	5.5750	9.2197	5.8050	9.2180	5.6327	9.1737	5.7207	8.9413	5.5843
300.1	11.6037	8.4383	11.6323	8.1760	11.9000	8.2467	11.7960	8.5500	11.7273	8.3133	11.6393	8.6250
300.2	11.6700	8.3250	11.6600	8.5513	11.6753	8.5800	11.7730	8.4007	11.6457	8.4967	11.5320	9.0597
300.3	11.7517	8.0687	11.8300	8.2957	11.7273	8.4710	11.8740	8.3303	11.7223	8.3310	11.7180	8.6240
400.1	16.6023	13.6560	16.3587	13.6653	16.4487	14.1060	16.4800	13.9183	16.3410	14.0920	16.1567	14.0303
400.2	16.8307	13.5540	16.4293	13.8353	16.9097	13.5637	16.6867	13.8793	16.5513	13.9240	16.1563	14.5060
400.3	16.8590	13.4133	16.4177	13.6053	16.9243	13.7643	16.3380	14.9630	16.7500	13.7807	16.5550	14.8843
500.1	21.8890	20.2567	21.1790	20.3300	21.3980	20.6460	21.3777	21.2950	21.3007	20.4653	21.4120	21.2903
500.2	21.4553	20.3780	21.0300	20.4077	21.4627	20.5963	21.5677	20.5530	21.4440	20.4713	21.3583	21.0543
500.3	22.2410	20.1753	22.0003	20.2800	22.2080	20.4790	22.2967	20.3627	21.4973	20.6717	21.8263	21.0580
600.1	26.7540	26.9187	27.1107	27.4477	25.8047	27.7300	27.2590	27.8393	25.9630	28.0340	25.9487	27.8907
600.2	26.3313	27.6527	26.7943	27.1897	27.3280	27.4267	26.2807	27.5107	26.7550	27.8937	26.3110	27.9883
600.3	27.5923	27.3757	27.2063	27.0253	27.7260	27.1813	25.9970	29.1640	26.9203	27.0600	26.7153	28.4833
700.1	32.7863	35.5703	31.8127	35.4340	31.3393	36.1413	33.2247	36.2110	32.1697	36.3447	31.5430	36.9193
700.2	32.4950	35.4693	32.5917	35.7100	32.3983	35.7413	33.6407	35.6770	31.9460	36.1707	31.3027	37.1337
700.3	33.6100	35.6360	33.4703	35.4893	33.6783	35.3513	33.6820	35.4630	33.0613	36.3343	33.0137	37.6773
800.1	39.9163	45.3383	39.4763	45.8657	40.7050	44.8997	37.6263	46.6287	37.9613	46.1790	37.9420	46.6483
800.2	38.7197	45.3627	38.5740	45.2667	40.6333	45.1477	40.6537	45.3767	38.9000	46.6360	37.7030	46.2913
800.3	40.6723	45.0393	40.3230	44.9793	38.9303	45.5780	37.5003	47.6590	39.4177	45.9220	39.6760	45.8000
900.1	45.2750	54.4593	43.5470	54.6413	45.6220	54.7247	45.6857	54.9357	43.4673	55.2910	43.0207	55.4343
900.2	45.8680	55.4883	43.3347	54.1473	43.6127	54.8410	43.4327	53.8740	43.4817	55.8017	43.0520	54.7390
900.3	43.7273	54.0857	45.4440	53.7620	45.1907	54.2733	45.0643	54.2803	43.7623	53.7607	43.6257	55.3843
1000.1	50.9343	65.2433	49.5740	65.1240	53.2093	65.1593	52.8573	65.5187	49.3713	66.2937	49.4993	66.7163
1000.2	48.4613	65.0460	52.7457	65.7947	53.8393	65.8703	51.4970	66.0337	49.7910	66.6857	50.2057	63.4623
1000.3	49.9367	65.7593	53.6700	65.3997	51.5020	65.2993	49.1043	68.2947	52.0323	65.5367	50.7657	67.8763