Optimización numérica

Proyecto 2. PCS

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Experimentos

problema	n	m	f	iter	feval	CPU(s)	inercia
bt1	2	1	-1.00E+00	10	12	1.35E-01	1
bt2	3	1	3.26E-02	11	14	3.35E-03	1
bt4	3	2	-1.86E+01	0	1	2.14E-03	0
bt5	3	2	9.62E+02	6	7	5.47E-03	1
bt6	5	2	2.77E-01	9	11	2.88E-03	1
bt7	5	3	9.09E+02	0	1	5.50E-04	0
bt8	5	2	3.00E+00	0	1	5.41E-04	0
bt9	4	2	-3.02E+00	1	3	9.36E-04	0
bt11	5	3	8.25E-01	7	9	2.22E-03	1
bt12	5	3	6.19E+00	3	4	1.36E-03	1
byrdsphr	Problema mal escalado, iter =1						
catena	32	11	-2.31E+04	7	10	2.74E-03	1
catenary	496	166	0.00E+00	0	1	6.49E-03	0
dixchlng	10	5	2.47E+03	9	11	3.18E-03	1
dtoc1l	Problema mal escalado, iter = 41						
dtoc1na	1485	990	1.27E+01	101	395	3.48E+00	1
dtoc1nb	1485	990	1.59E+01	101	413	3.59E+00	1
dtoc1nc	1485	990	2.50E+01	101	651	4.19E+00	1
dtoc1nd	735	490	1.22E+01	1	5	1.05E-01	0
dtoc2	5994	3996	5.09E-01	7	14	9.18E-01	1
dtoc4	14996	9997	2.87E+00	3	4	2.55E+00	1
dtoc5	9998	4999	1.54E+00	3	4	6.82E-01	1
dtoc6	10000	5000	1.35E+05	22	45	3.80E+00	1
eigena2	110	55	2.85E+02	0	1	6.31E-03	0
eigenaco	110	55	2.85E+02	0	1	5.31E-03	0
eigenb2	110	55	6.58E+02	0	1	4.90E-03	0
eigenbco	110	55	1.90E+01	0	1	4.98E-03	0
eigenc2	462	231	1.01E+04	0	1	7.44E-02	0
eigencco	30	15	1.90E+01	0	1	1.43E-03	0
gilbert	10	1	1.93E+02	0	1	6.07E-04	0

hs006	2	1	0.00E+00	5	15	1.87E-03	1
hs007	2	1	-3.91E-01	0	1	5.41E-04	0
hs009	2	1	0.00E+00	0	1	5.79E-04	0
hs026	3	1	9.00E-31	46	50	9.81E-03	1
hs027	3	1	1.22E-02	1	2	9.07E-04	0
hs039	4	2	-3.02E+00	1	3	9.33E-04	0
hs040	4	3	-2.50E-01	3	4	1.38E-03	1
hs046	Problema mal escalado, iter = 66						
hs047	5	3	1.58E+00	3	5	1.40E-03	0
hs049	5	2	1.78E-07	13	14	3.34E-03	1
hs050	5	3	6.38E-13	8	9	2.29E-03	1
hs061	3	2	0.00E+00	0	1	4.03E-03	0
hs077	5	2	2.42E-01	8	10	2.60E-03	1
hs078	5	3	-2.92E+00	4	5	1.62E-03	1
hs079	5	3	7.88E-02	4	5	1.63E-03	1
hs100lnp	7	2	7.14E+02	0	1	5.89E-04	0
hs111lnp	10	3	-2.10E+01	0	1	7.33E-04	0
lch	600	1	2.59E+05	0	1	6.93E-03	0
maratos	2	1	-1.00E+00	11	13	2.80E-03	1
maratos2	2	1	-1.00E+00	11	14	2.94E-03	1
mwright	5	3	5.02E+01	1	2	1.07E-03	0
orthrdm2	4003	2000	1.56E+02	6	9	6.70E-01	1
orthrds2	203	100	3.08E+01	4	7	8.51E-03	0
orthrega	517	256	5.92E+02	2	4	2.04E-02	0
orthregb	27	6	0.00E+00	0	1	9.04E-04	0
orthregc	10005	5000	1.91E+02	2	5	4.55E+00	0
orthregd	10003	5000	1.52E+03	7	11	5.23E+00	1
orthrgdm	10003	5000	1.51E+03	8	13	5.41E+00	1
orthrgds	10003	5000	7.62E+01	0	1	3.64E+00	0

Cuadro 2: byrdsphr

k	f	——c——	——gL——	alpha	mu
1	1.22E+01	2.02E+00	4.93E+00	1.25E-01	4.29E-01

Cuadro 3: dtoc1na

k	f	——c——	——gL——	alpha	mu
1	1.99E+01	1.90E-03	1.48E-01	1.00E+00	4.29E-01
2	1.34E+01	3.46E-03	2.69E-01	1.00E+00	4.29E-01
3	1.27E+01	1.53E-04	3.27E-02	1.00E+00	4.29E-01
90	1.27E+01	2.01E-16	3.86E-16	6.25E-02	1.29E+01
91	1.27E+01	2.01E-16	4.00E-16	6.25E-02	1.29E+01
92	1.27E+01	2.01E-16	4.01E-16	6.25E-02	1.29E+01
93	1.27E+01	2.01E-16	3.95E-16	6.25E-02	1.29E+01
94	1.27E+01	2.01E-16	3.95E-16	6.25E-02	1.29E+01
95	1.27E+01	2.01E-16	3.95E-16	6.25E-02	1.29E+01
96	1.27E+01	2.01E-16	3.96E-16	1.25E-01	1.29E+01
97	1.27E+01	2.01E-16	4.23E-16	1.25E-01	1.29E+01
98	1.27E+01	2.01E-16	4.16E-16	1.25E-01	1.29E+01
99	1.27E+01	2.01E-16	3.61E-16	2.50E-01	1.29E+01
100	1.27E+01	2.01E-16	3.61E-16	6.25E-02	1.29E+01
101	1.27E+01	2.01E-16	4.09E-16	1.25E-01	1.29E+01

Cuadro 4: dtoc1l

k	f	——c——	——gL——	alpha	mu
1	2.01E+02	4.44E-16	1.47E-01	1.00E+00	4.29E-01
2	1.34E+02	1.33E-15	2.92E-01	1.00E+00	4.29E-01
3	1.26E+02	8.33E-16	3.67E-02	1.00E+00	4.29E-01
4	1.25E+02	1.78E-15	1.86E-03	1.00E+00	4.29E-01
5	1.25E+02	1.25E-15	5.03E-06	1.00E+00	4.29E-01
6	1.25E+02	1.17E-15	3.61E-11	1.00E+00	4.29E-01
7	1.25E+02	1.03E-15	3.16E-11	1.25E-01	6.24E+00
8	1.25E+02	1.03E-15	3.16E-11	6.10E-05	2.86E+01
9	1.25E+02	1.03E-15	3.16E-11	6.10E-05	2.86E+01
10	1.25E+02	1.05E-15	3.16E-11	6.10E-05	2.86E+01
11	1.25E+02	1.05E-15	3.16E-11	6.10E-05	2.86E+01
12	1.25E+02	1.08E-15	3.16E-11	6.10E-05	2.86E+01
13	1.25E+02	1.08E-15	3.16E-11	6.10E-05	2.86E+01
14	1.25E+02	1.11E-15	3.16E-11	6.10E-05	2.86E+01
15	1.25E+02	1.11E-15	3.16E-11	6.10E-05	2.86E+01
16	1.25E+02	1.11E-15	3.16E-11	6.10E-05	2.86E+01
17	1.25E+02	1.11E-15	3.16E-11	3.05E-05	2.86E+01
18	1.25E+02	1.11E-15	3.16E-11	7.63E-06	2.86E+01
19	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
20	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
21	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
22	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
23	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
24	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
25	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
26	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
27	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
28	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
29	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
30	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
31	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
32	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
33	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
34	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
35	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
36	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
37	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
38	1.25E+02	1.11E-15	3.16E-11	1.91E-06	2.86E+01
39	1.25E+02	1.17E-15	3.16E-11	1.91E-06	2.86E+01
40	1.25E+02	1.22E-15	3.16E-11	1.91E-06	2.86E+01

Cuadro 5: hs046

k	f	——c——	——gL——	alpha	mu
1	7.04E-01	4.80E+00	1.73E+01	1.00E+00	5.33E-01
2	3.73E-01	1.23E+00	5.09E+00	1.00E+00	5.33E-01
3	8.33E-02	2.71E-01	1.39E+00	1.00E+00	5.33E-01
4	2.03E-02	3.35E-02	2.63E-01	1.00E+00	5.33E-01
55	8.39E-23	2.29E-12	1.11E-16	1.00E+00	5.33E-01
56	1.66E-23	1.02E-12	3.28E-17	1.00E+00	5.33E-01
57	3.27E-24	4.52E-13	9.73E-18	1.00E+00	5.33E-01
58	6.46E-25	2.02E-13	2.88E-18	1.00E+00	5.33E-01
59	1.28E-25	8.93E-14	8.54E-19	1.00E+00	5.33E-01
60	2.52E-26	3.95E-14	2.53E-19	1.00E+00	5.33E-01
61	4.98E-27	1.78E-14	7.50E-20	1.00E+00	5.33E-01
62	9.84E-28	7.99E-15	2.22E-20	1.00E+00	5.33E-01
63	1.94E-28	3.55E-15	6.59E-21	1.00E+00	5.33E-01
64	3.84E-29	8.88E-16	1.95E-21	1.00E+00	5.33E-01
65	1.85E-29	4.44E-16	1.13E-21	5.00E-01	5.33E-01

Cuadro 6: orthregc

k	f	——c——	——gL——	alpha	mu
1	1.54E+01	3.86E+00	4.75E+01	5.00E-01	9.01E+00
2	1.91E+02	1.87E+00	1.83E+03	5.00E-01	1.75E+02

Cuadro 7: dtoc6

k	f	——c——	——gL——	alpha	mu
1	1.54E+03	6.16E-01	6.07E-01	5.00E-01	1.00E+00
2	2.84E+03	3.71E-01	3.69E-01	5.00E-01	9.02E+03
3	5.75E+03	2.26E-01	4.63E-01	5.00E-01	2.67E+04
4	1.00E+04	1.40E-01	6.09E-01	5.00E-01	6.12E+04
5	1.56E+04	8.54E-02	7.45E-01	5.00E-01	1.26E+05
6	2.25E+04	5.16E-02	8.73E-01	5.00E-01	2.51E+05
7	3.05E+04	3.12E-02	9.97E-01	5.00E-01	4.87E+05
8	3.98E+04	1.88E-02	1.12E+00	5.00E-01	9.23E+05
9	5.02E+04	1.14E-02	1.24E+00	5.00E-01	1.71E+06
10	6.17E+04	6.86E-03	1.35E+00	5.00E-01	3.11E+06
11	7.41E+04	4.15E-03	1.47E+00	5.00E-01	5.50E+06
12	8.70E+04	2.51E-03	1.58E+00	5.00E-01	9.40E+06
13	1.00E+05	1.51E-03	1.66E+00	5.00E-01	1.52E+07
14	1.12E+05	8.57E-04	1.52E+00	5.00E-01	2.22E+07
15	1.21E+05	5.12E-04	1.07E+00	5.00E-01	2.84E+07
16	1.24E+05	4.03E-04	8.23E-01	2.50E-01	2.89E+07
17	1.27E+05	3.14E-04	6.29E-01	2.50E-01	2.89E+07
18	1.29E+05	2.43E-04	4.79E-01	2.50E-01	2.89E+07
19	1.32E+05	1.39E-04	2.54E-01	5.00E-01	2.89E+07
20	1.35E+05	1.91E-05	1.42E-02	1.00E+00	2.89E+07
21	1.35E+05	5.07E-09	7.86E-06	1.00E+00	2.89E+07
22	1.35E+05	4.78E-12	3.68E-12	1.00E+00	2.89E+07

Cuadro 8: dtoc5

k	f	——c——	——gL——	alpha	mu
1	7.62E-01	2.00E-04	6.09E-04	1.00E+00	8.46E-01
2	1.53E+00	1.58E-05	1.70E-05	1.00E+00	4.29E+03
3	1.54E+00	6.90E-09	2.50E-08	1.00E+00	4.29E+03

Cuadro 9: dtoc4

k	f	——c——	——gL——	alpha	mu
1	3.37E+00	3.39E-04	1.74E-03	1.00E+00	3.75E+00
2	2.87E+00	3.15E-07	1.48E-05	1.00E+00	3.75E+00
3	2.87E+00	1.59E-10	1.02E-09	1.00E+00	3.39E+02