

N-body-implementation in Fork95 / ForkLight

on SB-PRAM, Fork95 compiler 1.8.1

100 random particles (172 cells), THETA = 1.0, time in seconds

#processors	1	2	4	8	16	32	64	128	256	512
tree constr.	0.92	0.47	0.25	0.14	0.10	0.13	0.19	0.23	0.23	0.23
mass centers	0.82	0.68	0.62	0.59	0.57	0.59	0.63	0.94	1.06	1.29
treeforce	22.4	11.2	5.6	2.9	1.5	1.0	0.93	0.93	0.88	0.88
O(n*n) algo.	79.1	39.6	19.9	10.3	5.5	3.2	1.6	0.9	0.50	0.30

← one-level parallelism →

← two-level parallelism →

500 random particles (925 cells), THETA = 1.0, time in seconds

#processors	1	2	4	8	16	32	64	128	256	512
tree constr.	5.4	2.7	1.4	0.7	0.4	0.4	0.5	0.7	1.0	1.4
mass centers	3.7	2.9	2.5	2.4	2.2	2.2	2.2	2.3	2.5	4.2
treeforce	153.5	76.8	38.6	19.4	10.0	6.2	6.1	6.1	6.1	6.1
O(n*n) alg.	1998.0	999.6	501.1	251.9	127.7	64.0	32.1	16.2	8.2	4.2