

Execution Timetable of Exercise 3:

Time was measured using chrono library

Particles were organized in a cube formed grid with a space of 1 in between them.

Simulation environment:

Intel Core i5 12600k

Nvidia Geforce RTX 4070 super (Gaming drivers)

27 Particles

Try	No Opt	Cutoff	Cutoff + Neighbors List
1	2.2 s	2.19 s	1.64 s
2	2.2 s	2.32 s	1.53 s
3	2.24 s	2.35 s	1.58 s
4	2.21 s	2.10 s	1.66 s
5	2.2 s	2.10 s	1.58 s
6	2.18 s	2.12 s	1.54 s
7	2.41 s	2.27 s	1.61 s
8	2.21 s	2.13 s	1.57 s
9	2.12 s	2.13 s	1.57 s
10	2.15 s	2.11 s	1.62 s

125 Particles

Try	No Opt	Cutoff	Cutoff + Neighbors List
1	8.17 s	7.62 s	4.6 s
2	8.07 s	7.29 s	4.31 s
3	8.13 s	7.47 s	4.49 s
4	8.54 s	7.85 s	4.33 s
5	8.65 s	7.56 s	4.35 s
6	8.7 s	7.34 s	5.09 s
7	7.86 s	7.30 s	4.62 s
8	8.19 s	7.48 s	4.42 s
9	7.85 s	7.245 s	4.40 s
10	7.92 s	7.45 s	4.44 s

512 Particles

Try	No Opt	Cutoff	Cutoff + Neighbors List
1	27.9 s	20.67 s	14.8 s
2	26.96 s	19.23 s	15.25 s
3	26.82 s	18.7 s	14.82 s
4	26.63 s	18.8 s	14.86 s
5	26.5 s	18.99 s	14.63 s
6	27.89 s	18.92 s	15.01 s
7	26.75 s	18.8 s	14.12 s
8	26.42 s	19.06 s	15.06 s
9	26.51 s	18.91 s	14.58 s
10	27.78 s	19.24 s	14.88 s