**Ex05-Report**

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The parameters are as follows:

Number of Particles = 1000

Number of steps = 5000

Time interval = 0.0001

Particle radius = 1

Utilization phi = 0.1

Kr = 100

16 threads for Ex04

1 thread for Ex05

Some runtime results are as below:

|  |  |  |  |
| --- | --- | --- | --- |
| boxdim | cutoff | ex04(sec) | ex05(sec) |
| 4 | 7 | 293.88 | 19.01 |
| 4 | 6 | 293.88 | 18.66 |
| 4 | 5 | 293.88 | 18.38 |
| 8 | 7 | 293.88 | 5.64 |
| 8 | 6 | 293.88 | 5.5 |
| 8 | 5 | 293.88 | 5.0902 |

The results show that boxdim has a significant influence on runtime and cutoff also affects runtime. Generally speaking, the speed increases a lot with the interactions function.