FYS3150 Computational Physics - Project 3

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This is an abstract

INTRODUCTION

Lastly, the source code for any code discussed in this report can be found on my Github at: https://github.com/nicholaskarlsen/FYS3150

THEORY, ALGORITHMS AND METHODS

Euler-Cromer Algorithm

```
1 for  i = 0, ..., N
2       v_{i+1} = v_i + a_i Δt
3       r_{i+1} = r_i + v_{i+1}
```

Velocity-Verlet Algorithm

```
1 for  i = 0, ..., N
2    r_{i+1} = r_i + v_i Δt + (1/2m) F(t_i) Δt^2
3    v_{i+1} = v_i + (1/2m) (F(t_i) + F(t_{i+1})) Δt
```

RESULTS AND DISCUSSIONS

CONCLUSIONS

[1] M. Hjorth-Jensen, Computational Physics - Lecture Notes 2015, (2015).