FYS3150 - Project 1 Report

Nils Johannes Mikkelsen
(Dated: August 27, 2018)

Abstract.

I. INTRODUCTION

It is the object of this report to investigate the central finite difference approximation in relation to linear ordinary second order differential equations without first order terms. The report is most concerned with the accuracy of the approximation and the efficiency of tridiagonal matrix equation algorithms used during the numerical integration. The algorithms presented in this report will finally be compared standard matrix solving algorithms based on LU matrix decomposition.

II. THEORY

A. The Differential Equation

III. METHOD

IV. RESULTS

V. DISCUSSION

VI. CONCLUSION

ACKNOWLEDGMENTS

Acknowledgements.
[1][2]

[1] Paul Adrien Maurice Dirac. *The Principles of Quantum Mechanics*. International series of monographs on physics. Clarendon Press, 1981.

[2] Albert Einstein. Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]. *Annalen der Physik*, 322(10):891–921, 1905.