Project 1 in FYS4411: Computational Physics 2

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Abstract

Nan

1 Introduction

For this project our main task was to explore interacting systems of electrons in two dimensions, quantum dots. Such systems have a wide range of applications, as they can For exploring such systems, we were to employ the Hartree-Fock method.

2 Theory

2.1 Quantum dots

2.2 Quantum Harmonic Oscillator

2.3 Hartree-Fock

2.3.1 Hartree-Fock algorithm

3 Results

3.1 Unperturbed results

4 Conclusions and discussions