

Final Project: Quantum Eigenvalues

Corey Mutnik & Steven Covin
Computational Physics 305, University of Hawaii at Manoa

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Abstract

This study will use the Runge-Kutta algorithm as a numerical method of solving ordinary differential equations. Specifically, for Schrodinger's equation as it applies to quantum wavefunctions. We will be able to compare the results of our simulation to cases that have been solved analytically or experimentally. One such example is that of data obtained by Scanning Tunneling Microscopes (STM). Once the simulation produces supported results, we will use it to solve wavefunctions that can't be solved analytically.