

# Use of the SINC Method to Compute Energy Eigenvalues of the Schrodinger Equation

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## ORAL Discovery

The Coulombic anharmonic oscillator potential has generated considerable interest in the study of the Schrodinger equation due to the ability to model interaction between charged particles. Specifically, the energy eigenvalues of the Schrodinger equation have been of interest. Until recently, there has been a beautiful diversity in the approaches to numerically obtaining these eigenvalues.

In this project, we present the SINC-collocation method for computing eigenvalues. This approach is an alternative method to numerically evaluate the eigenvalue problem. The crux of the method is the use of finitely many SINC functions to estimate the wave-function. This estimation is composed with a double exponential transformation to improve convergence. This improved method then produces accelerated convergence to known eigenvalues when compared with other methods.