# Folders

[Flats](Flats/Welcome.htm) [.docx](Flats/Welcome.docx)

[HarmonicOscillator](HarmonicOscillator/Welcome.htm) [.docx](HarmonicOscillator/Welcome.docx)

Barrier [.docx](Barrier/Barrier.docx) (probably obsolete)

D2Fit [.docx](D2Fit/Welcome.docx) (to be developed further)

[DiffEq](DiffEq/Welcome.htm) [.docx](DiffEq/Welcome.docx) 🡨 the differential equation for 

[NegGauss](NegGauss/Welcome.htm) [.docx](NegGauss/Welcome.docx)

[Potential](Potential/Welcome.htm) [.docx](Potential/Welcome.docx) 🡨 the group of 1-d potentials considered here

[Resonance](resonance/Welcome.htm) [.docx](resonance/Welcome.docx)

The code here shows that the Harmonic oscillator wave functions can be approximated by



The best place to start the differential equation is at the potential minimum. The starting value is



The values from this are compared to the theoretical values in <DiffEq/Welcome.htm>.

The theoretical Harmonic Oscillator states are derived from raising operators in <HarmonicOscillator/Welcome.htm>

These are the same as the ones used in

<../AngularMomentum.pdf>