Lab Output: Matrix 2

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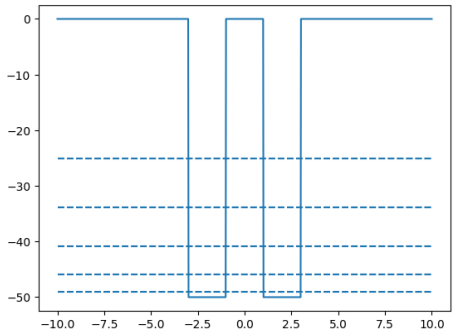

Figure 1: Eigenenergies of a Double Squaere Well Potential

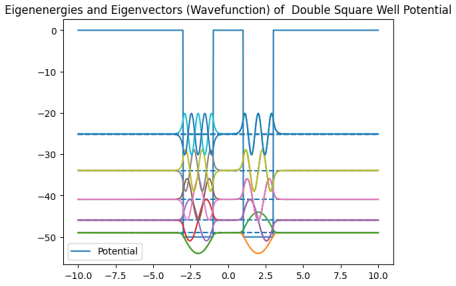

Figure 2: Eigenvectors of a Double Square Well Potential

Figure [1] and Figure [2] shows the eigenvalues (eigen-energies) and eigenvectors (wavefunctions) for a double square well potential for depth V_o, separation distance, and width, respectively. We can change these parameters to see what the effect would be on the plot.

Here in Figure [3], I varied the parameters so that the depth is smaller, the width is bigger and the separation distance is also bigger.

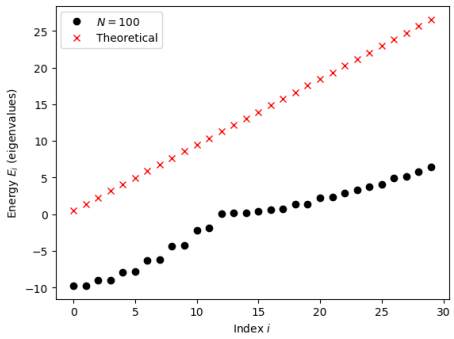

Figure 3: Theoretical vs N = 100 spacing of Eigenergies vs index i

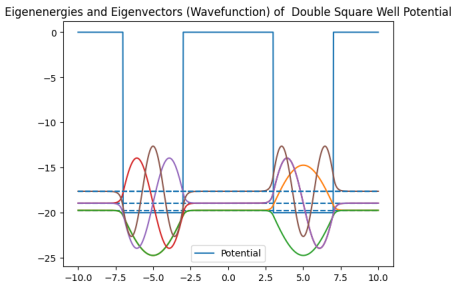

Figure 4: Eigenvalues and Eigenvectors of a Double Square Well Potential, with changed parameters

We see that this plot makes sense, because essentially adding up all the eigenvectors shows us what the double potential square well is saying - that the particle is located in either well.