

Computational Physics Problem Set 10

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December 10, 2024

GitHub: <https://github.com/jferrante25/physga-2000>

1 Problem 1 (Newman 9.8)

Part A: See code

Part B: See code and Gif on Github (prob 1.gif)

Part C: The wave packet moves to the right and is reflected off of the right side of the well, then returns in the opposite direction. The packet continues to be reflected back and forth, but over time, the packet expands, and the distribution giving the probability of detecting the particle at a given location in the well is thus more dispersed over time.

2 Problem 2 (Newman 9.9)

Part A: See code

Part B: See code and Figure 1

Part C: See code and Gif on Github (prob 2.gif)

Part D: See Problem 1 part C

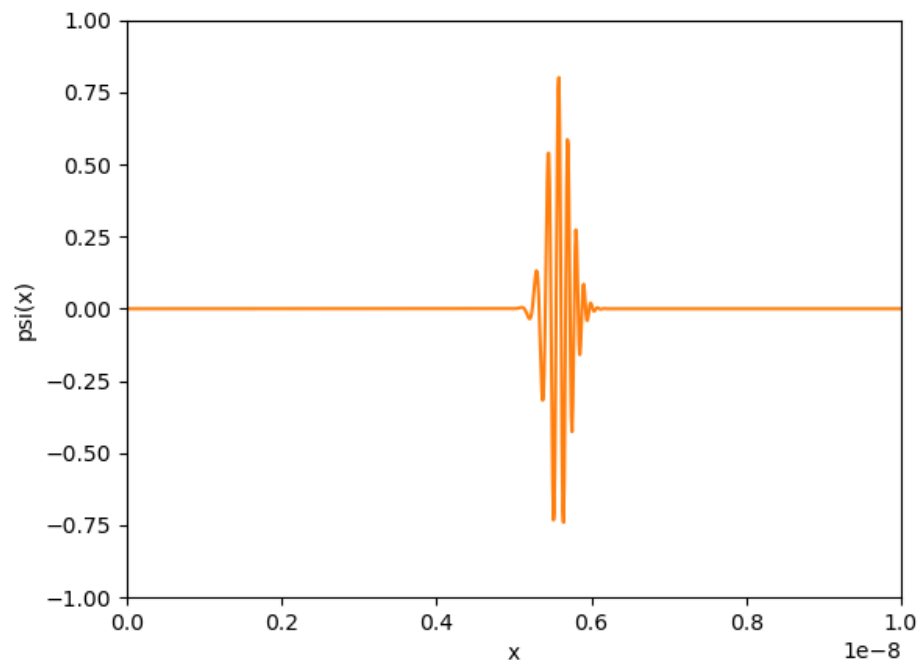


Figure 1: Wave packet at $t = 10^{-16}$ s