

Computational Physics Homework 10

Daniel Bateman

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1 Link to Github

<https://github.com/danbateman01/phys-ga2000/tree/main>

2 Problem 1

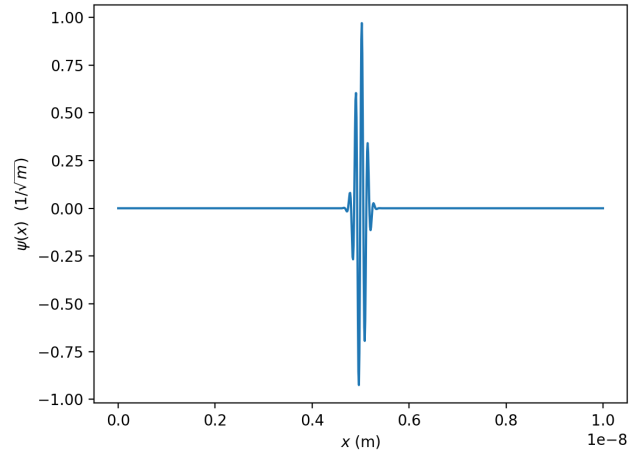


Figure 1: Initial Wavefunction

The first figure is the wave it's initial conditions and images 1 - 5 are images of the animation showing how the wave evolves in time. The wave moves to the right and rebounds off of the boundary, interfering with itself and shortly changes its shape.

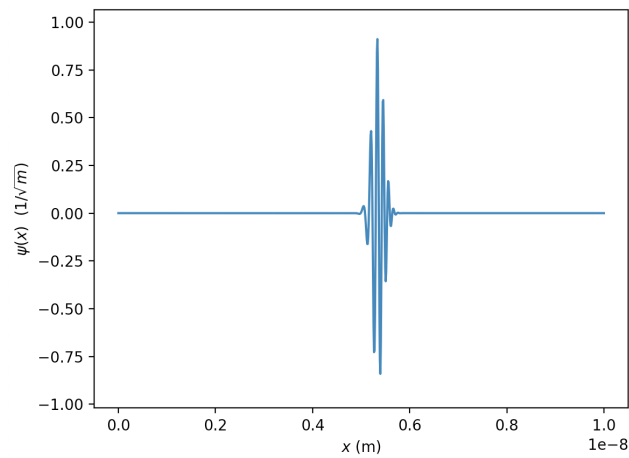


Figure 2: Image 1

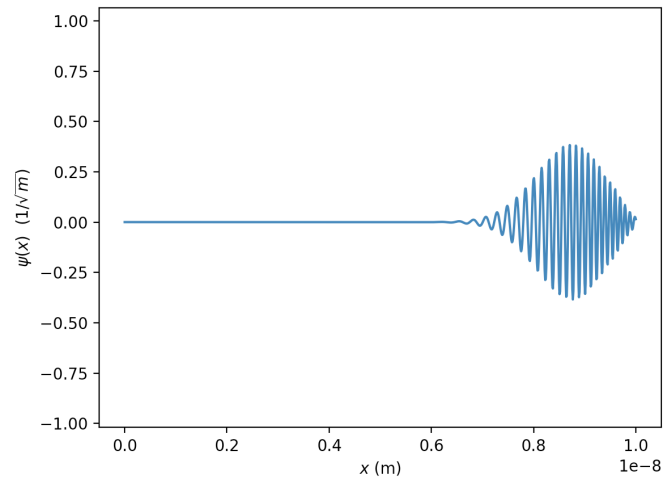


Figure 3: Image 2

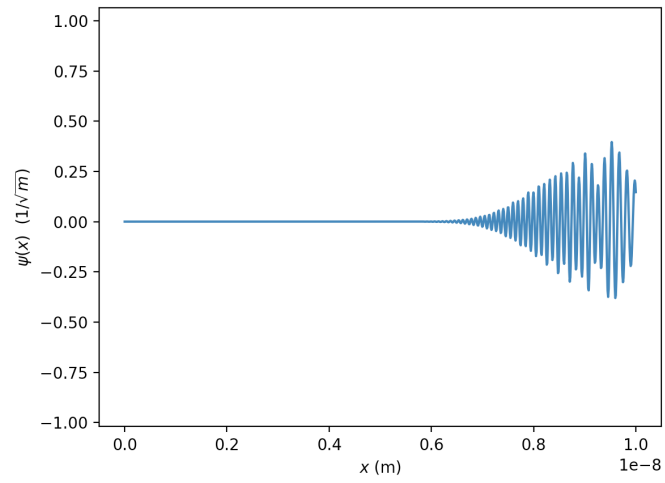


Figure 4: Image 3

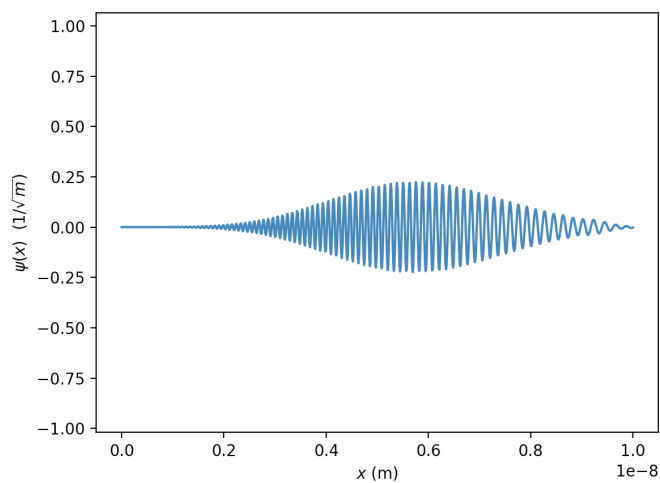


Figure 5: Image 4

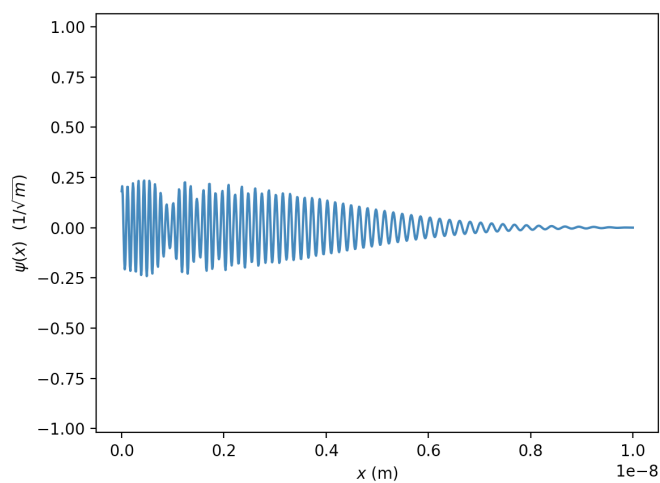


Figure 6: Image 5

3 Problem 2

Images 1 - 6 show how the wavefunction progresses in time. Similarly to the previous problem, the wave begins at the center at its maximum amplitude. This time it moves to the left first slightly faster than the first problem but rebounds off the boundary and interferes with itself in a similar way, then continues to rebound back and forth between the boundaries in a similar manner.

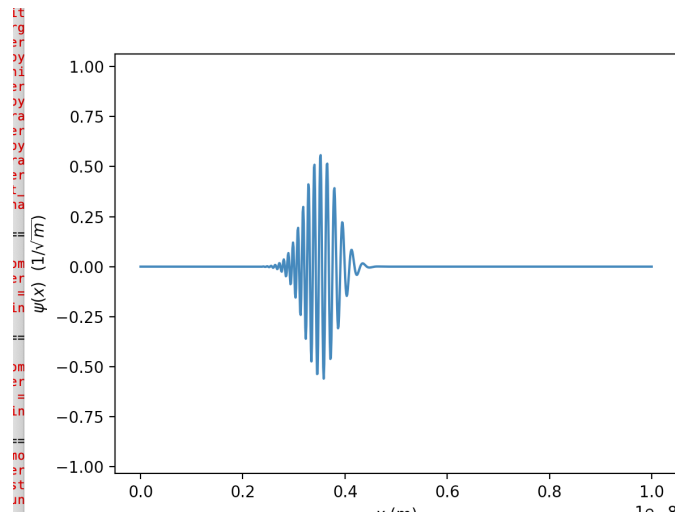


Figure 7: Image 1

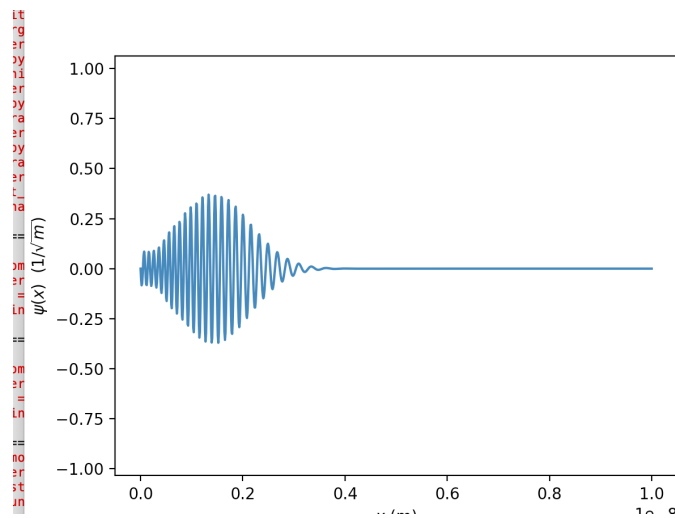


Figure 8: Image 2

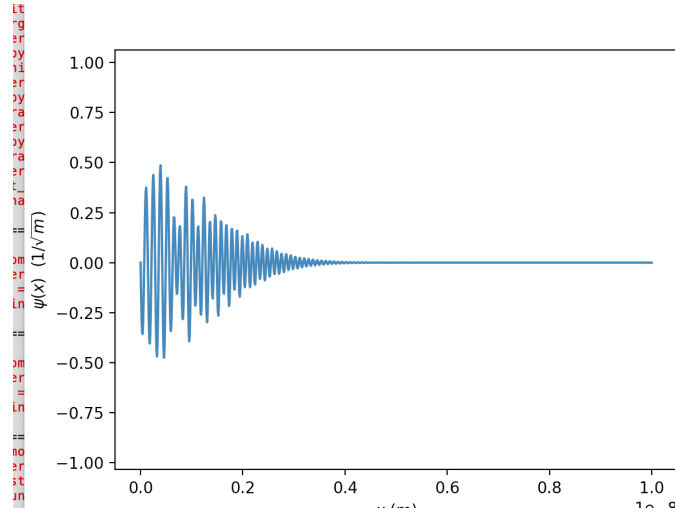


Figure 9: Image 3

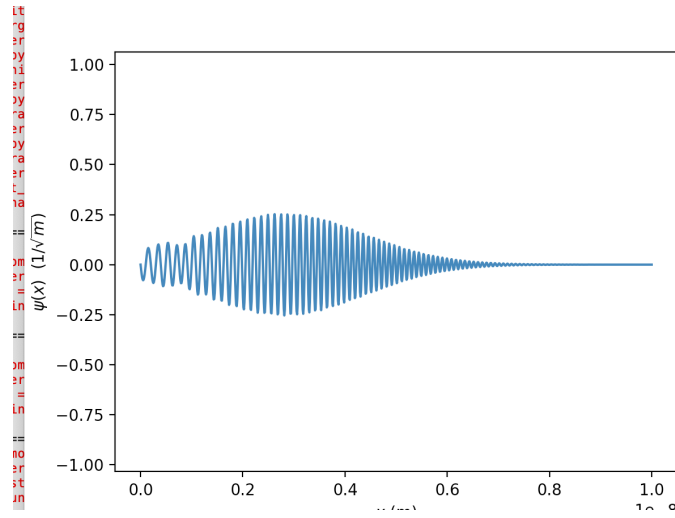


Figure 10: Image 4

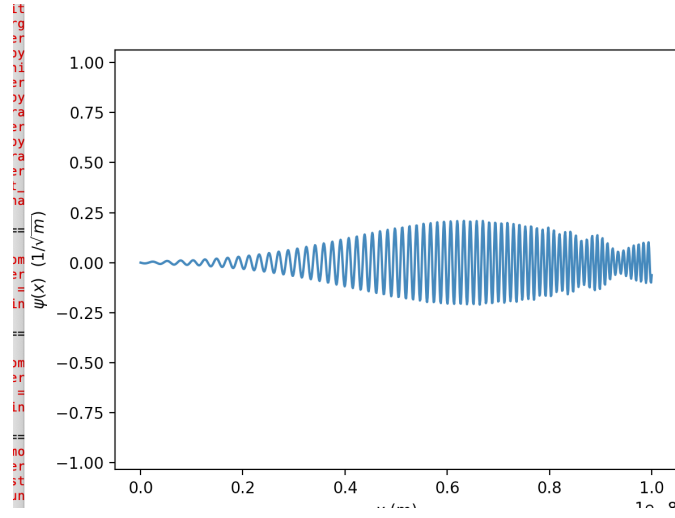


Figure 11: Image 5

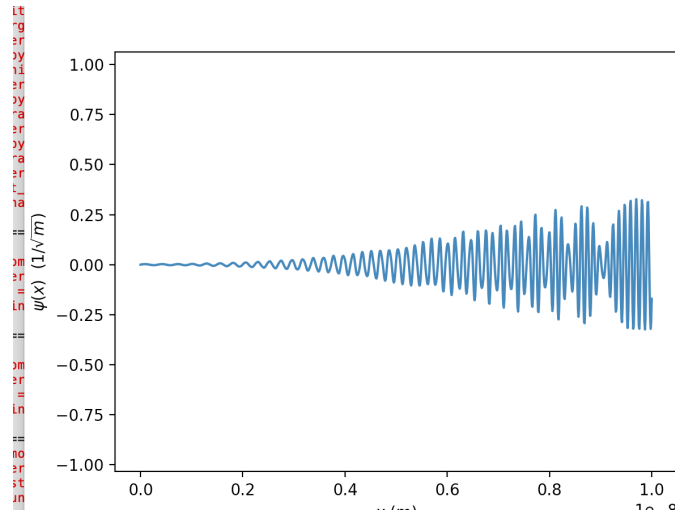


Figure 12: Image 6