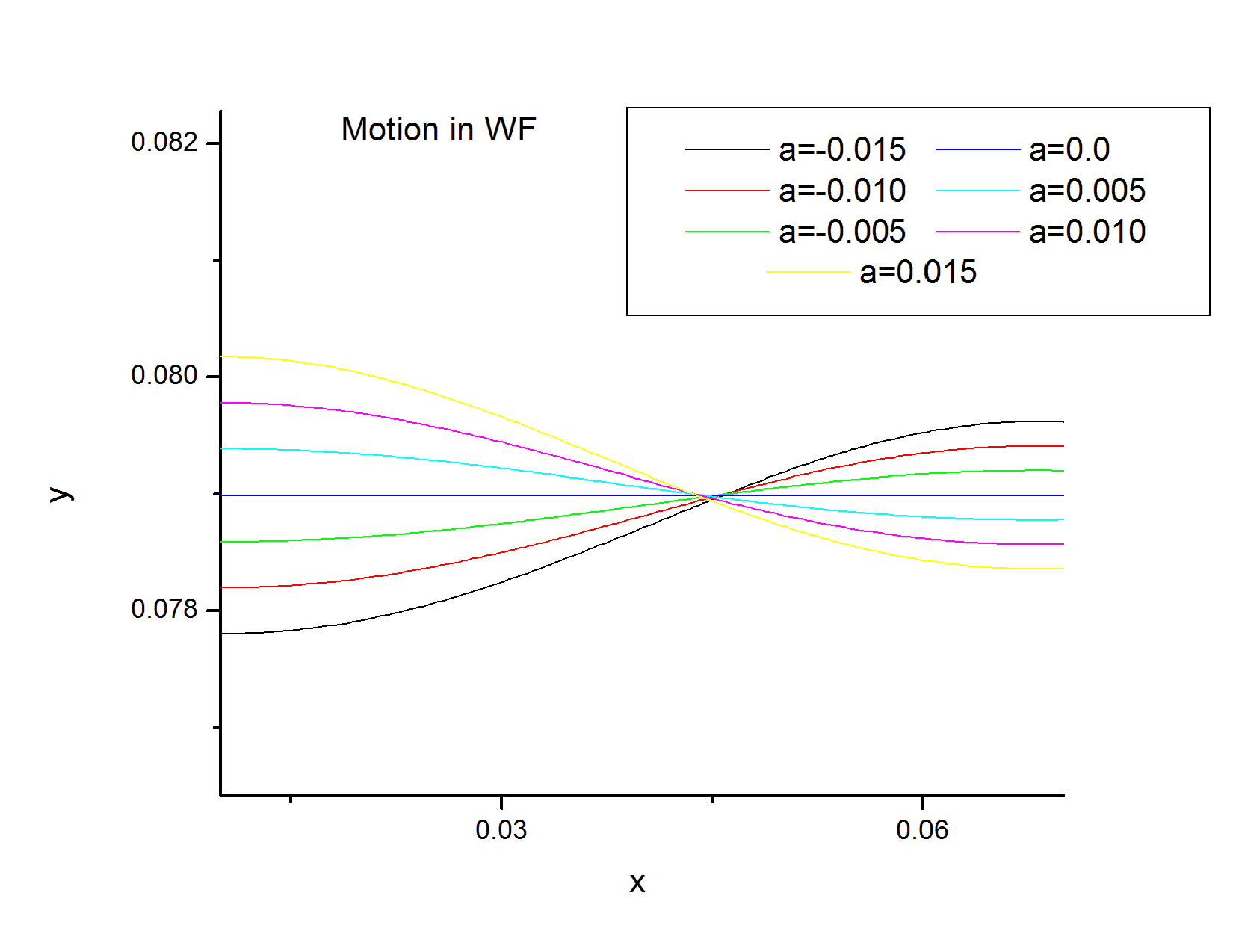


After successfully finding the above analytical expression, I wanted to find the minimum near -4.27 on this graph. Below is a graph of the motion of the electrons through the filter when it is tuned to that minimum. To analytically express this, I determined a way to calculate the angle of deflection.



Figure

I noticed that after half a “wavelength” of the oscillating motion, I could use the same approximation for small deflection.

This is the same expression for but the distance is modified by half a wavelength.

Remarkably, the final velocity in the x direction is the same before and after the filter.

Here, the assumptions are that c<0, and that is relatively small.



Figure -the program vs the analytical expression for angle

I am very close as well to determining the delay caused by the filter. It is a little trickier than before because the velocity is periodic.

So I ran into a wall. I want to find out how long the electron stays in the wein filter to determine how much behind it gets. but the equation for its x position is as follows

The only way I can solve for t is numerically. Any insight?