I ran the tuning program to find the best Wien Filter values for both a velocity spread and an angle spread.



The minimum shown is about c=-1. I already analyzed this minimum for velocity spread so now I need determine the angle part.

The delay caused by both B fields will be 4θr. But the WF changes the angle for the second set of B fields. Right now I am stuck on figuring out how the filter affects the angle and how the filter causes its own delay.

The following pictures are how the Wien filter affects the x and y velocity and the angle. To solve the problem I need to use the x velocity to determine how long the electron is in the filter and I need the final y velocity to determine the entry angle into the second set of B fields.

The equations for motion in the filter are



