Hi Professor

This week I have mainly focused on the 1d FDTD benchmark and make preparation in advance for laser beam testing .

Basically, I have finished 1D FDTD benchmark with theory. the 1D fdtd algorithm and benchmark results has been written in PPT and upload on the UCDBOX at: <https://ucdavis.box.com/s/z9q8kp88010scw2bommxv76m37o28558>. And now I am working on combining the 1d fdtd code with 3D ray tracing code to do mode conversion in Tokamak.

I also took part in the laser optical alignment with Jon and learned some very fantastic method about the mirror adjustment ,such as how to use auto-alignment equipment and the method to use auxiliary alignment laser path to replace the main alignment laser path which will be block once mount the windows at the output of FIR laser .

Beside this, I am doing the preparation job for laser beam testing in next week, such as beam intensity, the intensity stability and beam waveguide and launch optical testing .I need to prepare the scanning optical stage to auto-scan the beam profile in 2D or 3D by motor step ,I need to setup the auto saving program for NIDAQ system ,everything works well with the help of our group people. I will give a report after finishing testing.

Hi Professor,

This week, I have mainly focused on the 1D FDTD benchmark and made preparations in advance for the laser beam testing.

I have essentially completed the 1D FDTD benchmark with theoretical validation. The 1D FDTD algorithm and benchmark results have been written up in a PowerPoint and uploaded to UCDBOX at: <https://ucdavis.box.com/s/z9q8kp88010scw2bommxv76m37o28558>. Currently, I am working on combining the 1D FDTD code with the 3D ray tracing code to study mode conversion in the Tokamak.

I also participated in the laser optical alignment with Jon and learned some fantastic techniques for mirror adjustment, such as how to use auto-alignment equipment and how to use an auxiliary alignment laser path to replace the main alignment laser path, which will be blocked once the windows are mounted at the output of the FIR laser.

In addition, I am preparing for next week’s laser beam testing, which includes tasks such as measuring beam intensity, intensity stability, and testing the beam waveguide and launch optics. I need to set up the scanning optical stage to automatically scan the beam profile in 2D or 3D using stepper motors, and I am also working on setting up the auto-saving program for the NIDAQ system. Everything is progressing well with the help of our group members, and I will provide a report after the testing is completed.

This is the work I am currently doing .Have a good weekend!

Best regards

Xinhang