Hi Professor

This week I have solved the program bug left last week and basically finished the High-k scattering system program on control and monitor. The program includes the CO2 power/Power Supply monitor, FIR laser power monitor, Cooling water’s Temperature and Flow velocity monitor and Receiver optical and launch optical remote control etc. the brochure about the introduction to the LabVIEW has been uploaded to UCBOX for other user’s reference.

**To summarize, I have finished**

1. High-k scattering system’ monitor and control program.
2. First manuscript of the introduction to the program.

Next step, I will write the FIR-TIP system’s control and monitor program .It should be looked like same as High-k Scattering system ,both include the stepper motor control and power monitor and so on.

I still spend time on 1d fdtd code, since I want to figure out what the polarization would change during the propagation in the plasma. Beside this, this 1d FDTD code could also be used to numerically analysis the USPR signal if necessary, it could give a direct simulation about the reflect signal from the cutoff with pulse signal input. I also consider if we could use TTL grating structure on Si to convert the linear polarization of FIR to rotational polarization ,which could help to improve the receive intensity that is dependent on the polarization .Since the TTL grating structure layer basically like birefringent crystal ,where the electrical field parallel to grating and perpendicular to the grating have different refractive ,so proper depth of grating layer could shift the phase between the Ex and Ey and turn the linear polarization to rotational polarization. I will talk with Calvin about that idea next week.

That’s all what I have done this week. Have a good weekend!

GPT

Hi Professor,

This week, I have solved the program bug left from last week and have basically finished the High-k scattering system program for control and monitoring. The program includes the CO2 power/Power Supply monitor, FIR laser power monitor, Cooling water’s Temperature and Flow velocity monitor, and Receiver optical and launch optical remote control, etc. The brochure introducing LabVIEW has been uploaded to UCBOX for other users’ reference.( https://app.box.com/s/h4inogqcfdgbc19t3pv5g2h6wlwsawj0)

**To summarize, I have finished:**

1. The High-k scattering system’s monitoring and control program.
2. The first manuscript of the program introduction.

Next, I will write the FIR-TIP system’s control and monitoring program. It should look similar to the High-k Scattering system, both including stepper motor control, power monitoring, and so on.

I am still spending time on the 1D FDTD code since I want to figure out how the polarization changes during propagation in the plasma. Besides this, the 1D FDTD code could also be used to numerically analyze the USPR signal if necessary. It could provide a direct simulation of the reflected signal from the cutoff with a pulse signal input. I also consider whether we could use a subwavelength grating structure like TTL signal on Si to convert the linear polarization of FIR to rotational polarization, which could help improve the received intensity that is dependent on the polarization. Since the subwavelength grating structure layer is basically like a birefringent crystal, where the electric field parallel to the grating and perpendicular to the grating have different refractive indices, a proper depth of the grating layer could shift the phase between the Ex and Ey and turn the linear polarization into rotational polarization. I will talk with Calvin about that idea next week.

That’s all I have done this week. Have a good weekend!