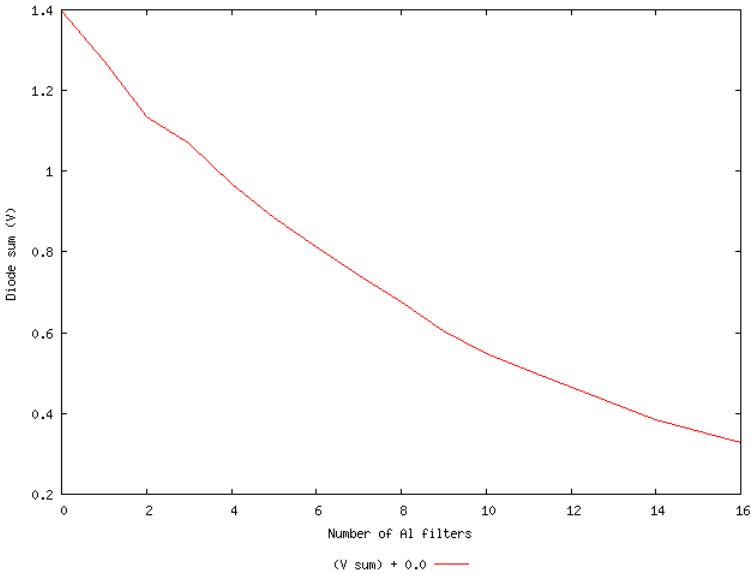
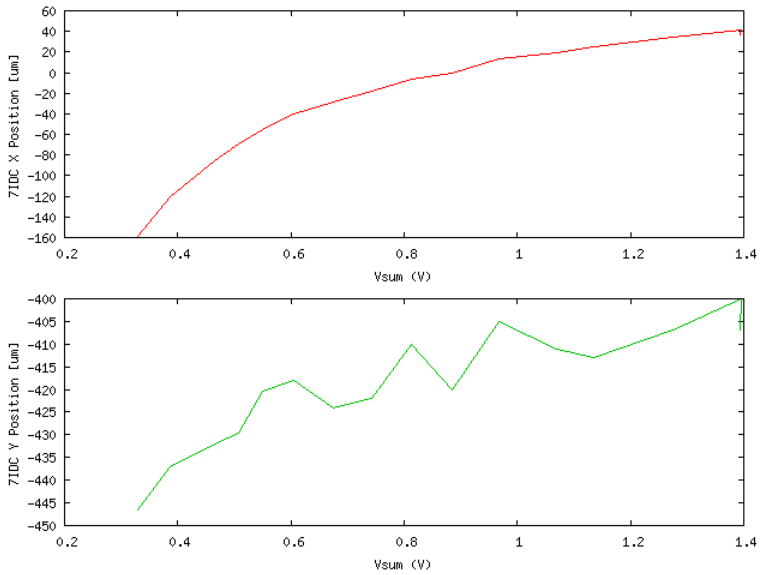
S7 operation update

Eric Dufresne, TRR group meeting, September 5, 2006

- During the last week of the summer run, ED studied further the performance of the new monochromator with a CCD camera and the BPM. EL also invited Steve Ross who had a good run testing his APD design.





Above, studies of systematic errors of the 7ID-C X-ray BPM. Dark currents cause a flux dependence of the position signal. This is an issue when not in top-up mode, or when scanning energy.

Shutdown activities

- DW is organizing the wet lab, will commission new hutch slits for 7ID-C and D, will work to improve the angular resolution of θ motor in 7ID-D, new Kohzu XYZ sample stage for 7ID-D…
- ED will work on water temperature stability on the new Kohzu, and improvements on diagnostics like thermometers on water and cooling block. Will plan to provide additional x-ray BPM on the beamline and upgrade EPS system to provide improved PC connection to EPS.
- BA is setting up the streak camera in 7ID-C for tests this fall. The camera will be mounted on the motorized table in 7ID-C. He is also commissioning a timing circuit to gate fast APD detectors.
- HG continuing the sector clean-up/organization. Will figure out requirement for ANL Electrical Inventory of our equipment.

Shutdown activity (cont.)

- EL will work on improving the laser beam stability with 2 Quad BPM and Steve Ross's electronics. He will work on improving a persistent humidity problem with the laser.
- EL is designing a new guillotine for passing the laser between 7ID-C and 7ID-C. It will allow to shoot the laser without any mirrors from the 7ID-E to the 7ID-C hutch improving the stability of the laser transport.
- The laser SOP will be renewed in the fall and we will install the interlocks to send the laser in 7ID-C. Laser on-the-job training needs to be implemented as well.
- Major 7ID-D crate upgrade to EPICS 3-14 by Tim Mooney, with many bonuses, such as oscilloscope and transient digitizer support, BPM support, etc…
- DA will look into cleaning the first diamond crystal of the new monochromator and upgrading the Bragg angle motor control to a stepper motor.

7ID R&D

- The group of Linda Young from ANL Chemistry has a new PRL that appeared on August 21, 2006 vol. **97**, 083601 .

- The group of Rob Crowell (ANL Chemistry) with DA did a first test run of fluorescence spectroscopy in 7ID-B in preparation for future pump-probe experiments at S7.