

CDS BOOSTER OPERATION PROGRAM

- Dark current measurements
- Radiation measurements
- Momentum spectrum
- DC transport studies

Yevgeniy Ivanisenko

Dark current measurements

- The native DCM electronics is expected to arrive in December, we'll use a scope for the readout, as before
 - Matlab script for monitoring and logging of the dark current and other complementary parameters*:

- /doocs/measure/Conditioning/_MatlabScripts/monitoring of signals/booster_dark_current_dcm.m

```
*date time booster_power_(MW) forw_booster_power_(MW) refl_booster_power_(MW) booster_pulse_length(us)
booster_temp_T348 dark_current_dcm(uA) magnets_current(A)(2 magnets), radiation_levels(uSv/h) (all_detectors)
valves_status (all valves).
```

- **Both gamma radiation detectors in the tunnel are downstream from the booster, Could it make sense to place them symmetrically around the booster to monitor some relative radiation level on both ends of the cavity?
(Ask Mario)**

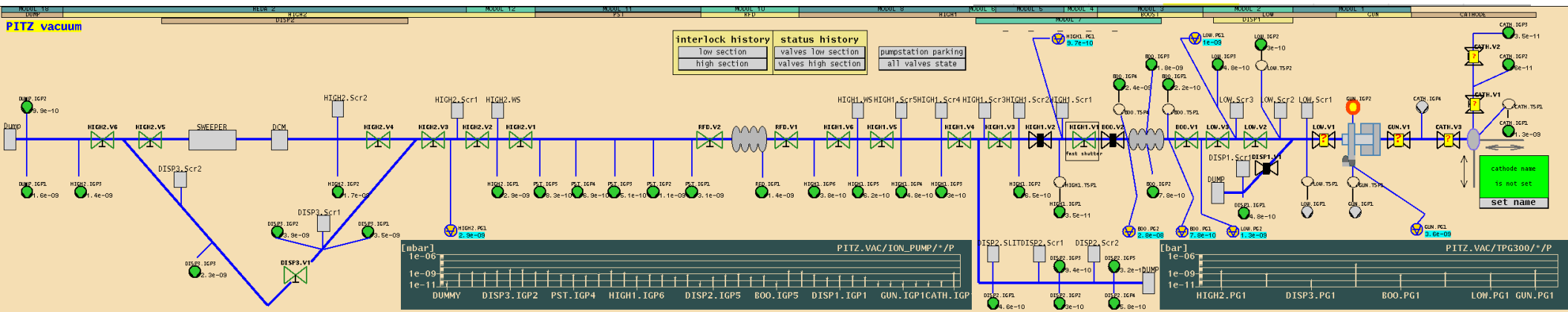
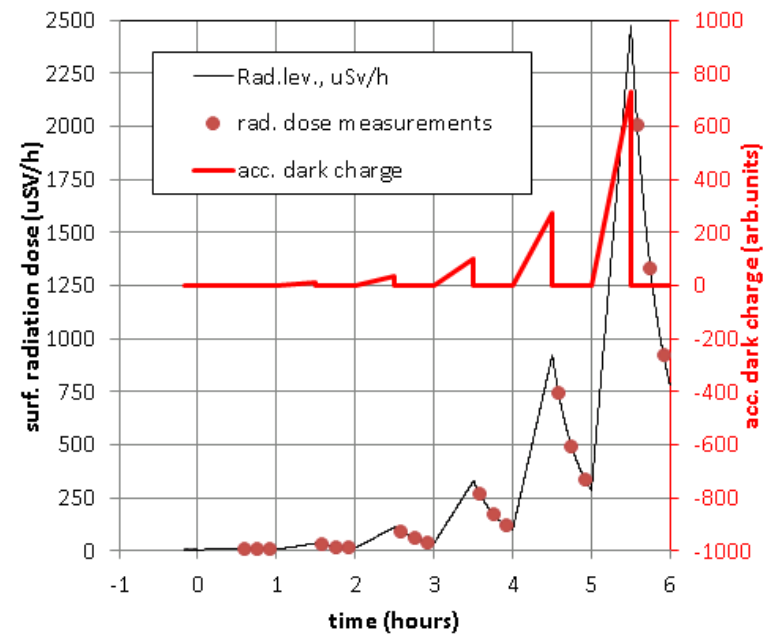
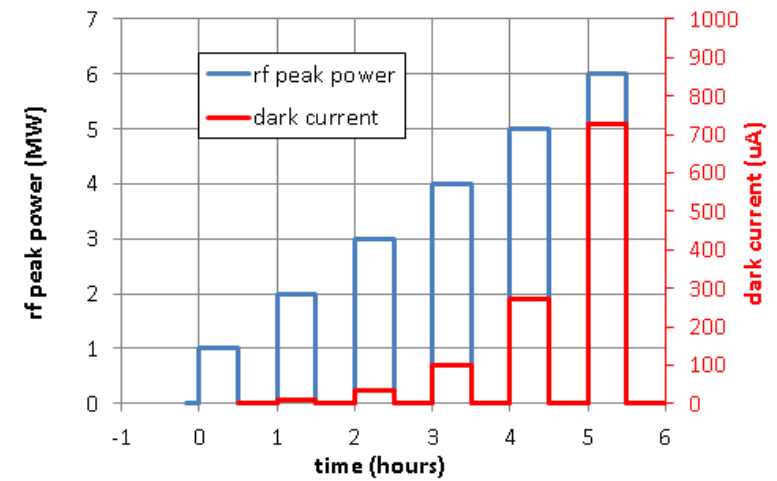
Radiation measurements 1

- **Checking the effect of the new shielding**
 - Keep constantly the highest dark current (booster power) and switch on LEDA (-2.1 A).
 - Logging the dark current values with real time stamps (can be done using the matlab script, see previous slide)
- **In the tunnel**
 - Along the beamline: All valves open
 - Deposition on a valve: upstream and downstream

Radiation measurements 2

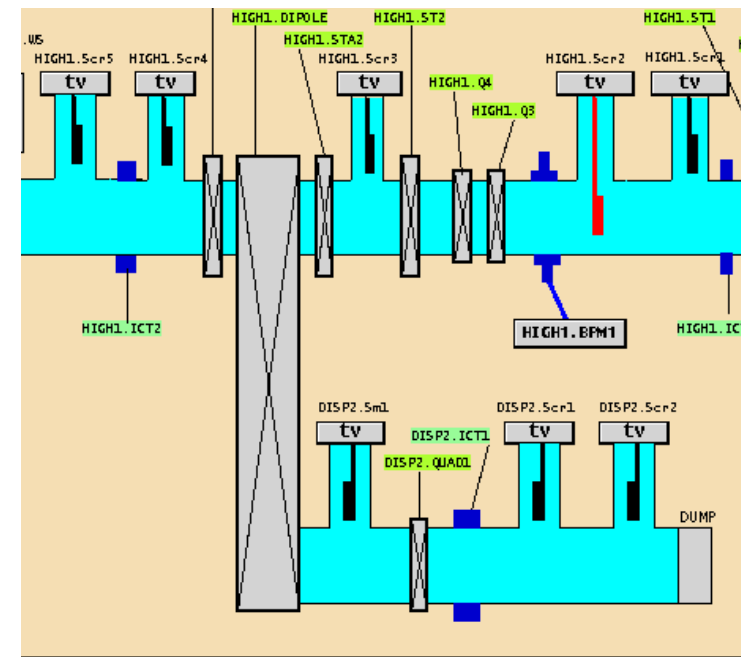
- MK:
 - Alternating 30 min run/tunnel access periods
 - Booster is operated at higher power each sequent run.
 - Three radiation measurements in the tunnel. **Where in the tunnel?**
 - Results table template:

/docs/measure/Conditioning/Booster/RadTest.xlsx



DC momentum spectra

- **HEDA:**
 - The camera Disp2.Scr1 has to be installed and adjusted, mama has to be calibrated to the screen
 - Focus the DC at High1.Scr5 (previous experience shows that it was possible to focus vertically quite good) and then switch to HEDA.
 - Measurements with different power levels
 - H1Scr5 is there, one can try steerer measurements once more with more accurate quadrupole focusing.



DC Transport Studies

- Transport **downstream** the straight section :
 - Several screens, focus with a quad to estimate the divergence spread mixed with the momentum spread. The latter will be estimated from the HEDA measurements. It allows to obtain an estimate for the divergence spread.

