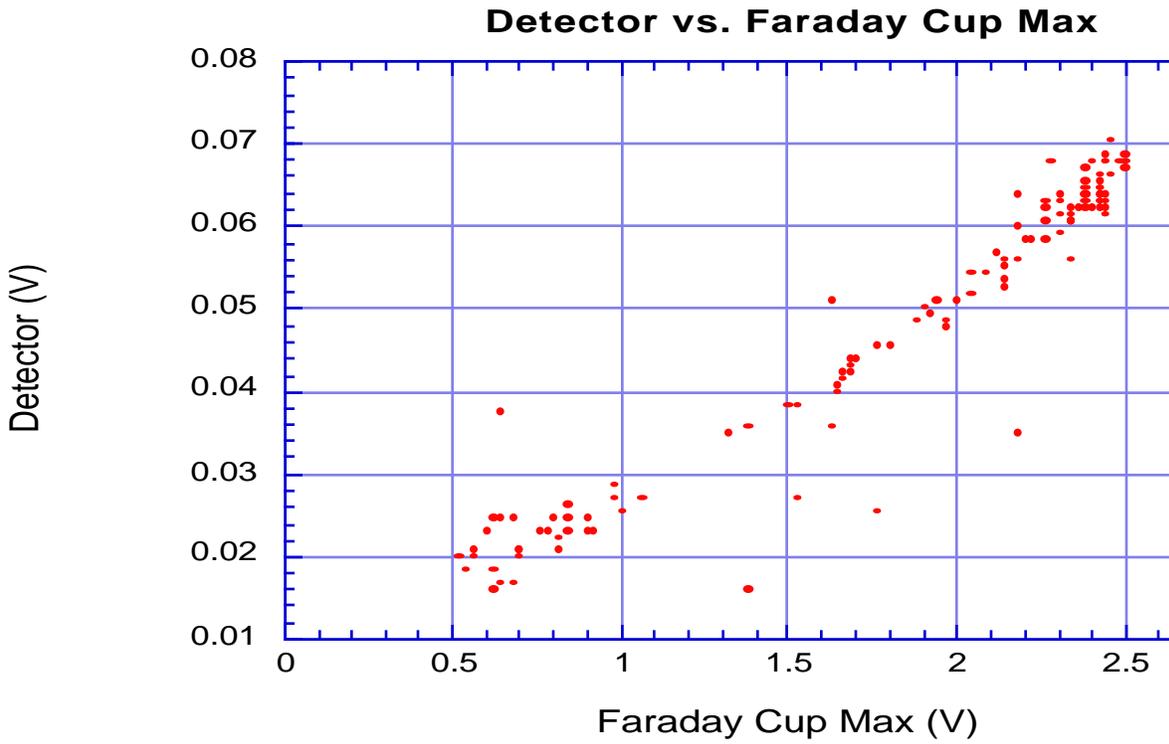


Radiation vs. Faraday Cup Max gives linear response. Measured in the experimental hall.



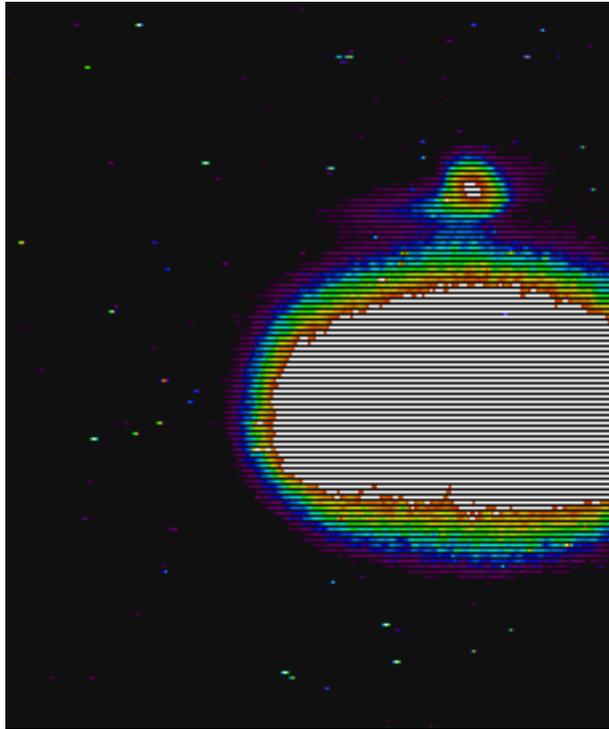
A detector background study showed we were getting a background spray from 12-23 mV at all charges, thus the importance of transporting to the FEL diagnostics room.

We still needed to study the filtering techniques needed for the BPMs- filter away

undulator radiation and keep OTR.

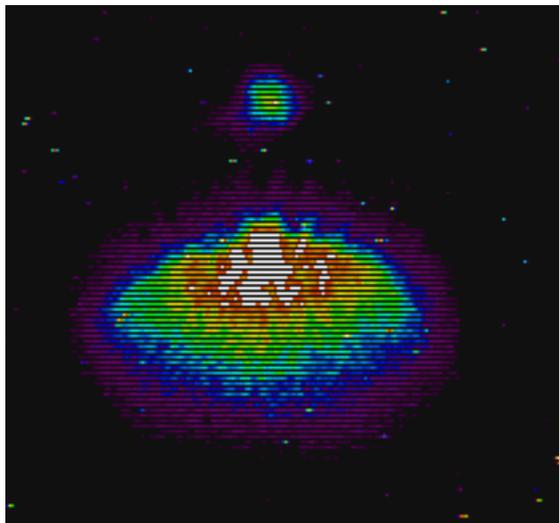
Here is a series of three pictures from the diagnostic port that is immediately downstream of the undulator.

BPM 9 with iris slightly opened



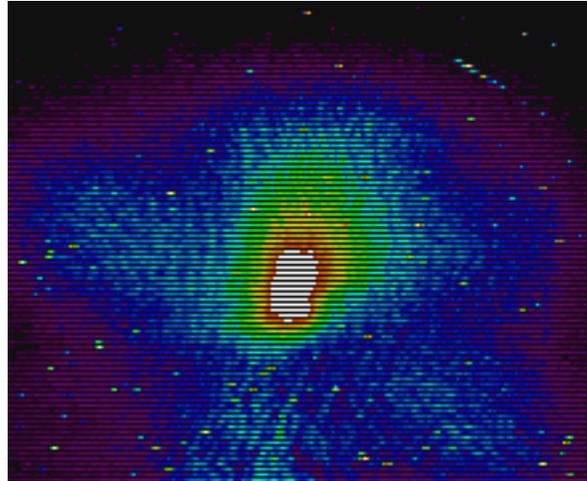
The OTR from the electron beam is much smaller than the huge amount of spontaneous being picked up. The reason the electron beam and spontaneous are not on top of each other is due to focusing on the OTR mirror and the iris is fairly closed.

BPM 9 with polarizer



The spontaneous has been greatly reduced

And finally BPM 9 with polarizer and filter



The iris has been opened up and the OTR from the electron beam can be clearly seen- central hot spot. The spontaneous is the background blue. Closing the iris removes most spontaneous from this picture and mostly OTR remains. The amount of radiation collected by the detector tells us the spontaneous energy is about .5nJ.

