

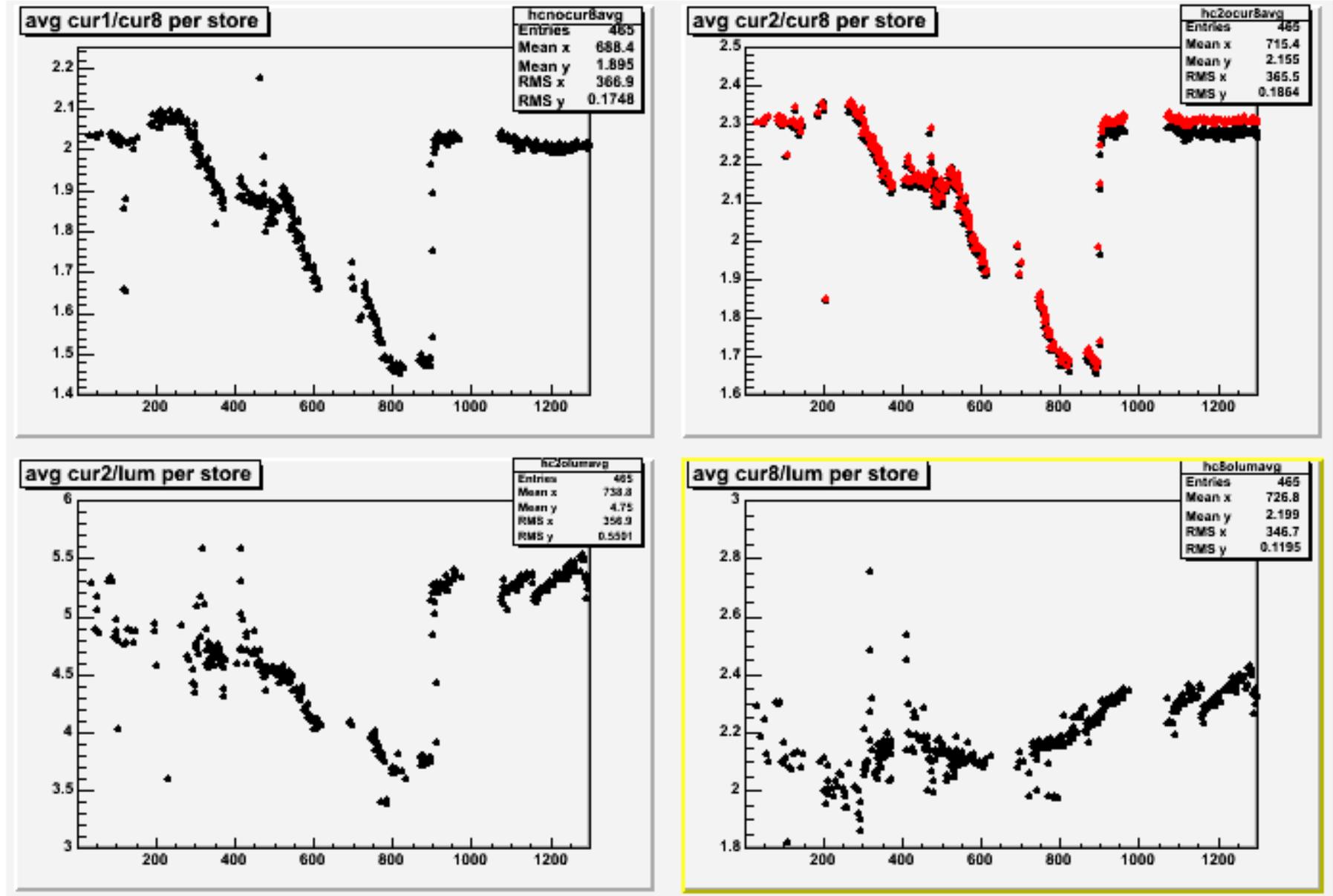
COT HV Currents and Aging

Binkley, Mukherjee, Wagner, Burkett,
Ambrose, Ting, Kraan, Madrak

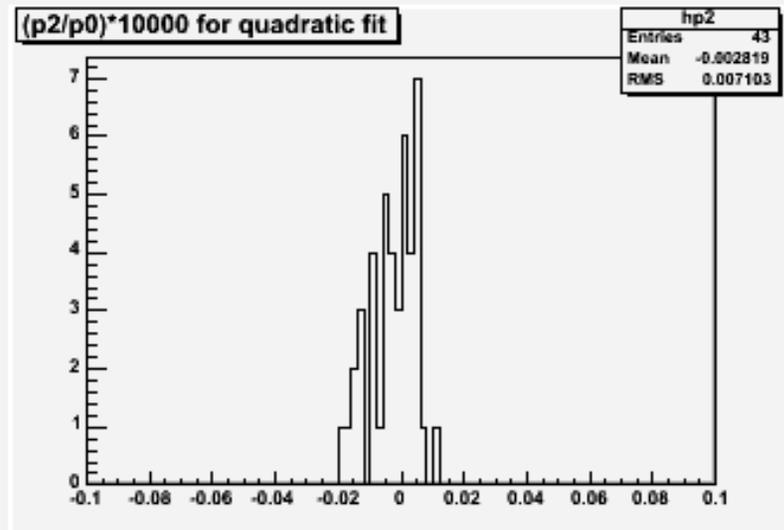
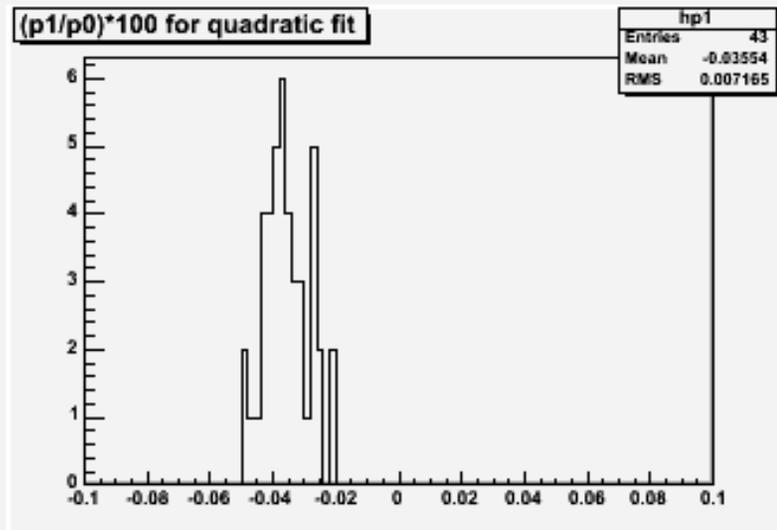
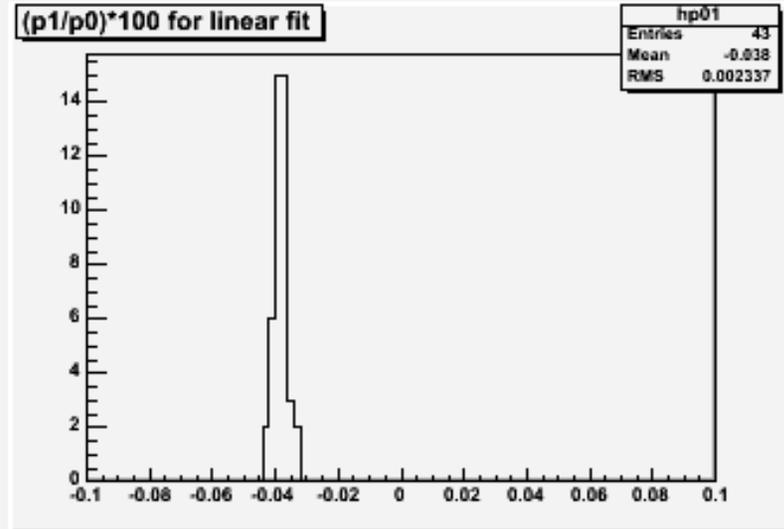
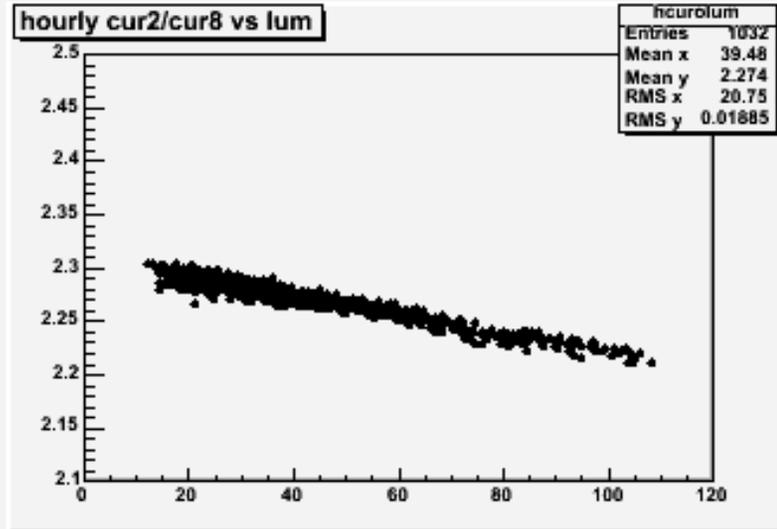
See: <http://ncdf82.fnal.gov/~binkley/cot/aging/>
<http://fcdfwww.fnal.gov/~burkett/COT/recent/>

Note: Parts are very Preliminary!!!

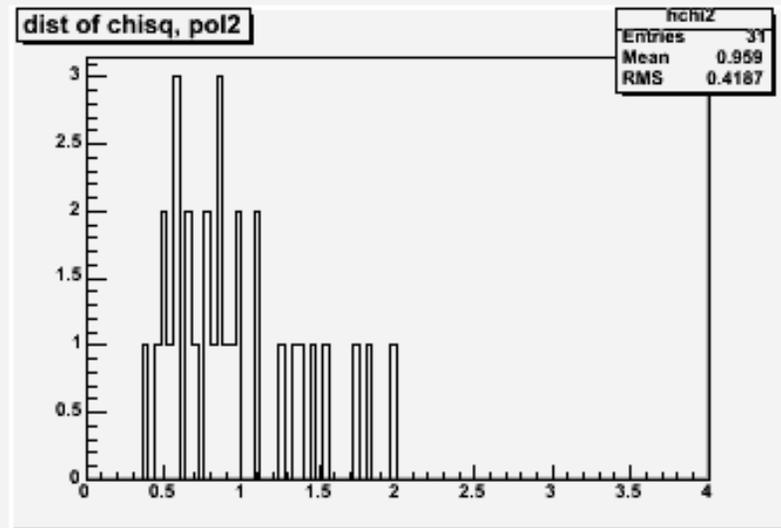
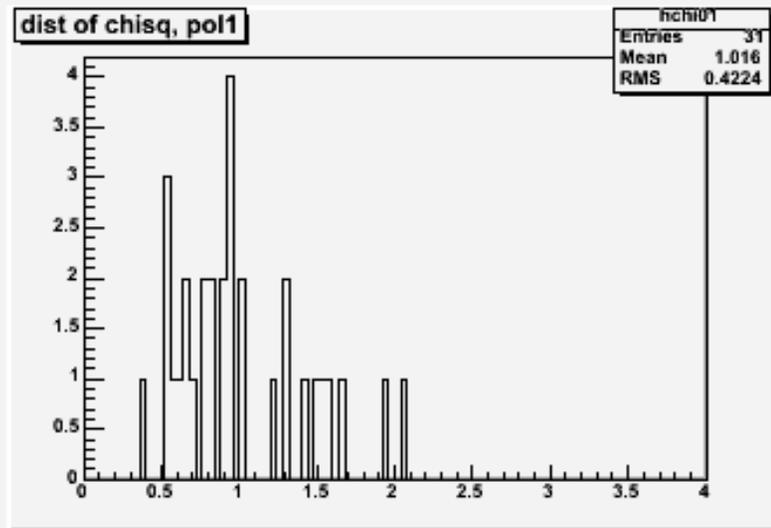
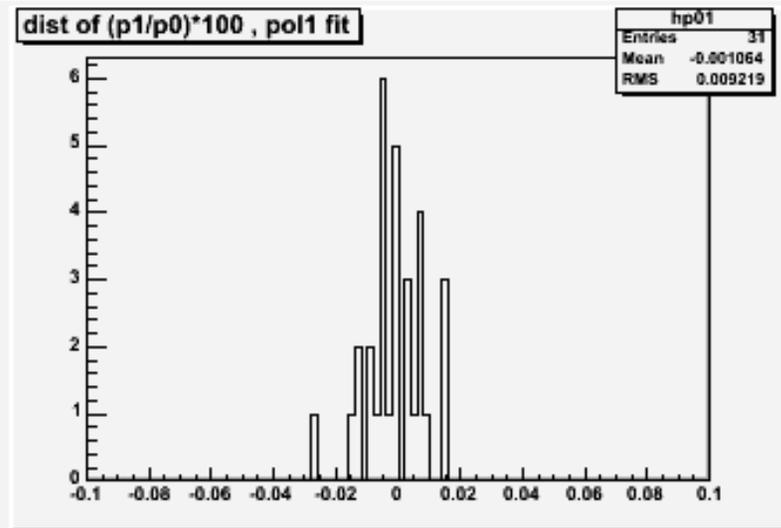
Current ratios since the beginning of Run II in days.



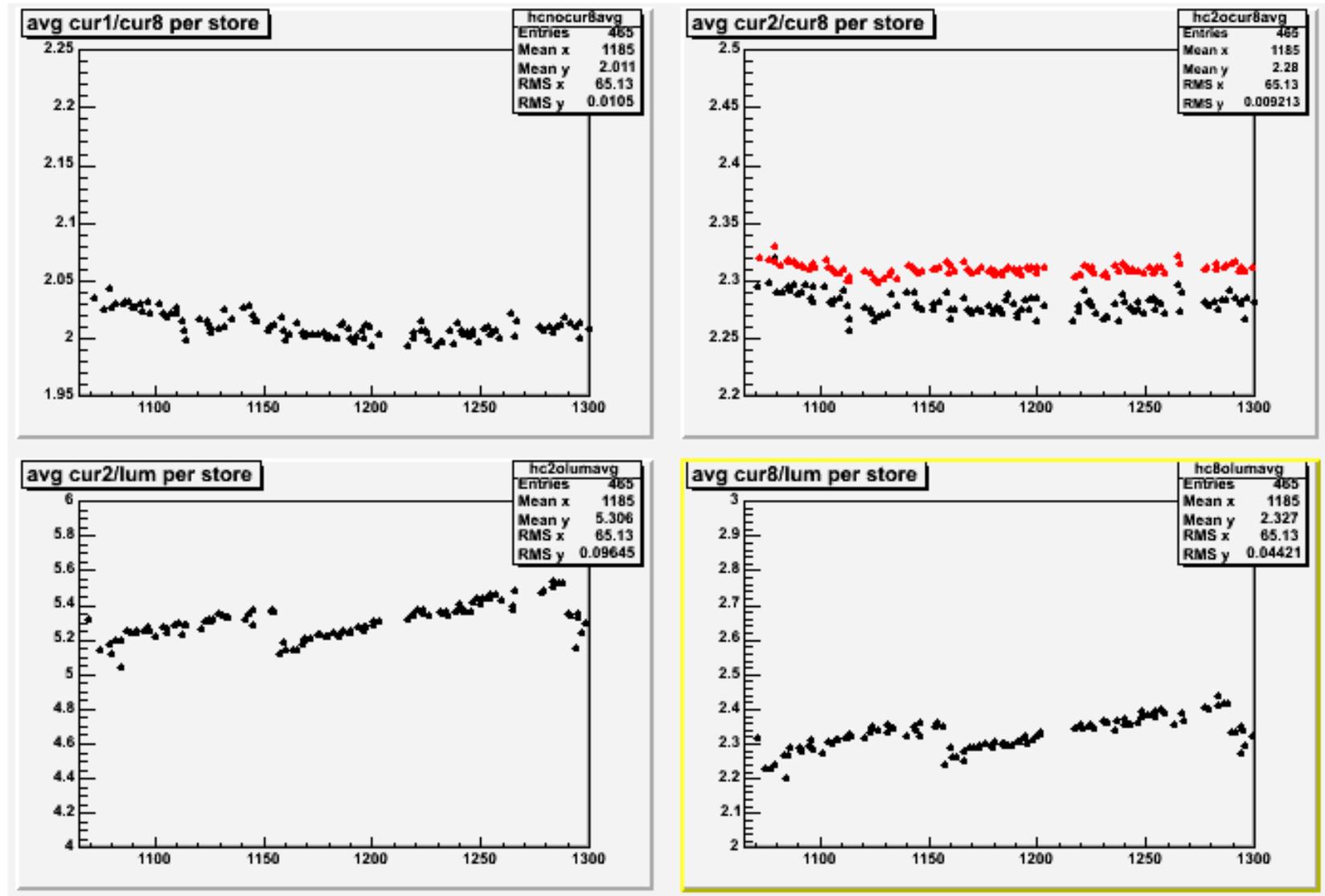
SL2/SL8 current ratio in a single store vs luminosity since fall shutdown. Current per wire in SL2 is 5.75 times that in SL8. A linear drop in ratio vs luminosity. Falls $3.8 \pm 0.2\%$ for $100E+30$ Luminosity increase. Space charge or voltage sag?



When plotting ratio of SL8 current to luminosity, the ratio is quite flat. The vertical spread is large, probably due to small COT gain changes. The average drop is $0.1 \pm 0.9\%$ for a luminosity increase of $100E+30$.



Average current and luminosity ratios since fall 2004 shutdown. In upper right plot, the red points are corrected for the luminosity dependence of SL2 current. In the bottom plots, the first large drop in Cur/Lum corresponds to back-flush of alcohol bubbler (alcohol level in gas changed?). Structure under study.



Conclusions

- Lots of things we don't understand, but there does not appear to be any significant aging at this point in time.
- We will continue to watch. Will also check against the gain measured using the widths of COT chamber pulses.