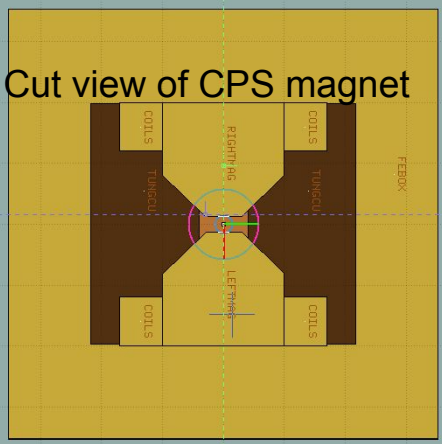
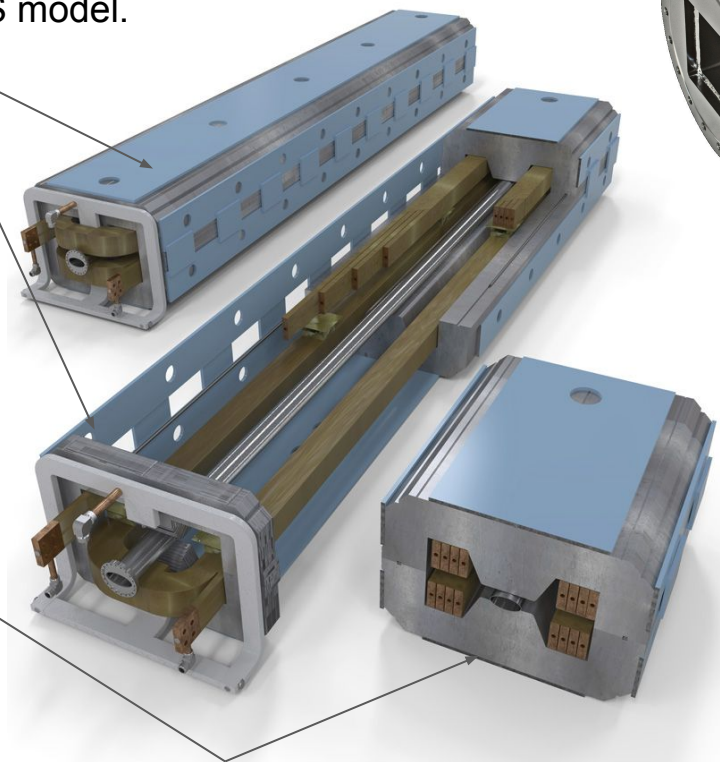


Cut view of CPS magnet



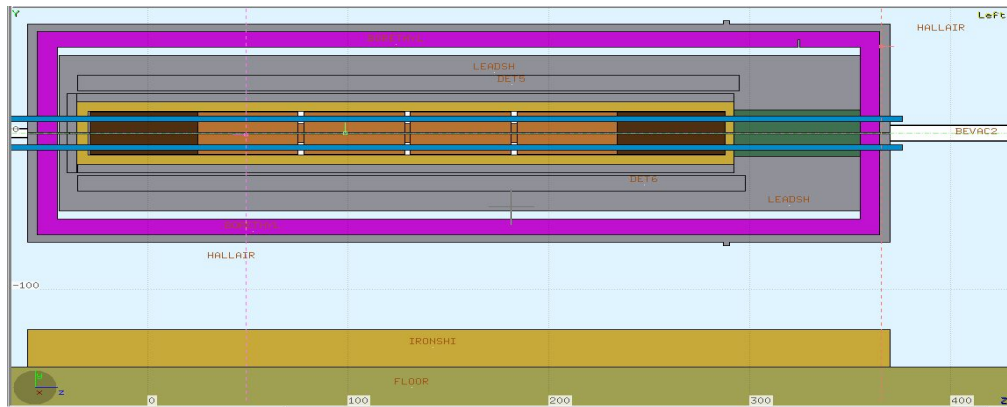
Fermilab magnet ~ 4-5 m long.  
As beam pipe goes through ->  
We may insert a copper pieces  
Similar to that of CPS model.



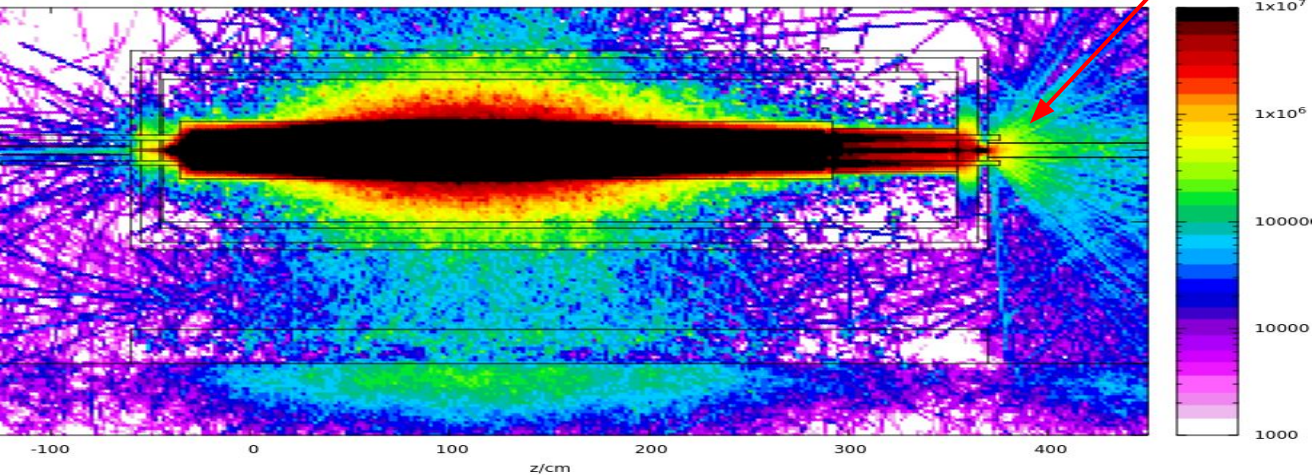
Steering magnet

Cut view of Fermilab magnet.  
Looks similar.

Almost Final Model. All W-pwdr replaced with Lead, except of DS. **High Dose Eq.** at CPS exit.



DoseEQ [pSv/s] CPS dxdydz  $-0.05 \times 0.05 \times 0.2$  |X/cm|<20 B=0.24/0.25/0.22T CPSKPTTELL080822 23



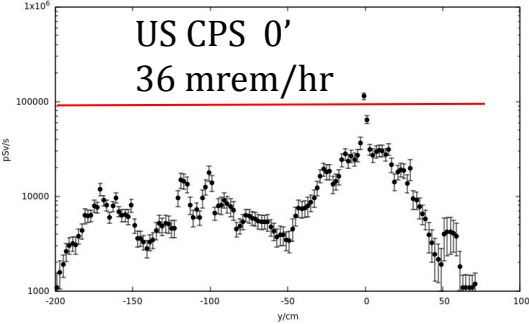
- Look like there is a point-like Source of radiation in the end of beam channel.

Dose Eq.  $\approx 8.E+5$  pSv/s  
 $\approx 300$  mrem/hr

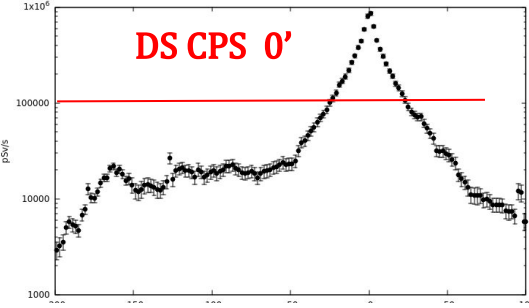
- Add Cyl. Shielding?

# Almost Final Model. Dose Eq. at various distances from the CPS Exit.

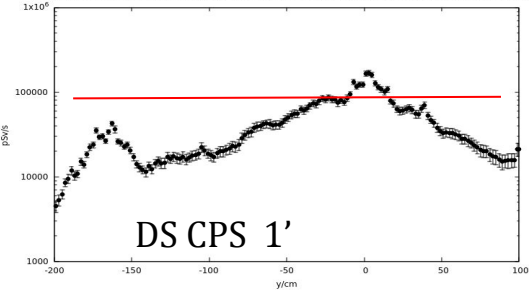
DoseEQ profile US CPS -70<z/cm<-60 dxdydz =0.05\*0.05\*0.2 |X/cm|<20 B=0.24/0.25/0.22T CPSKPTTELL080822 23



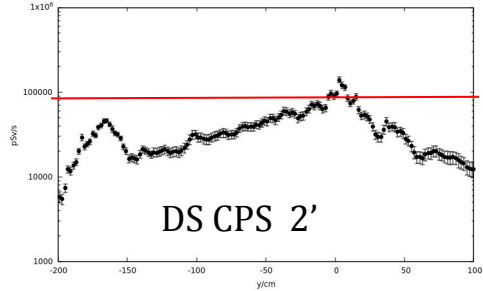
DoseEQ profile-0' 370<z/cm<400 dxdydz =0.05\*0.05\*0.2 |X/cm|<20 B=0.24/0.25/0.22T CPSKPTTELL080822 23



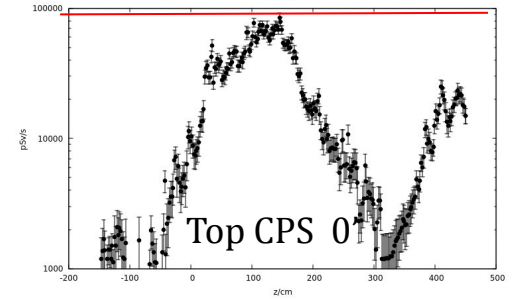
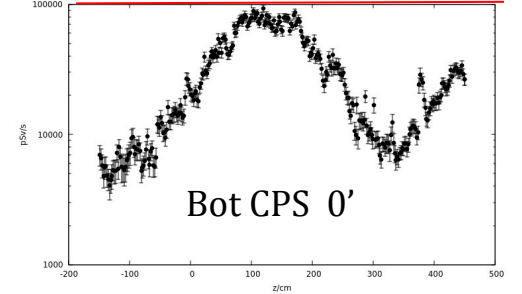
DoseEQ profile-1' 400<z/cm<430 dxdydz =0.05\*0.05\*0.2 |X/cm|<20 B=0.24/0.25/0.22T CPSKPTTELL080822 23



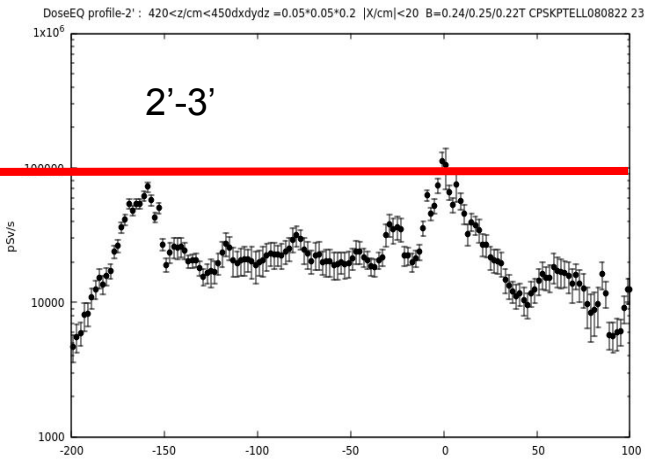
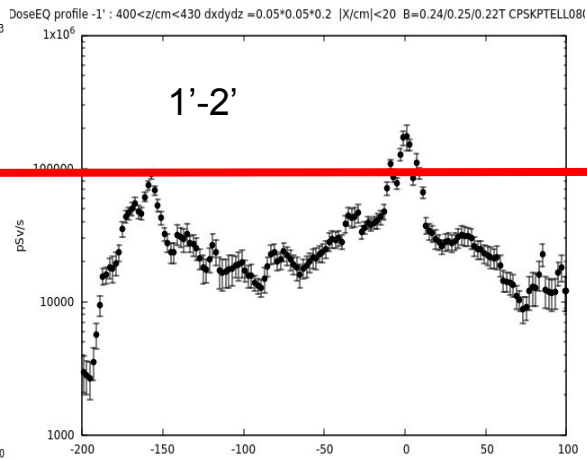
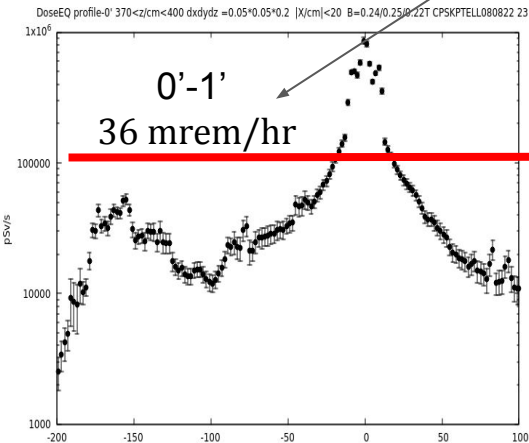
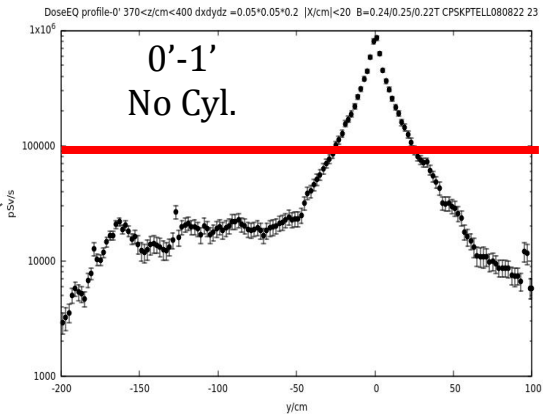
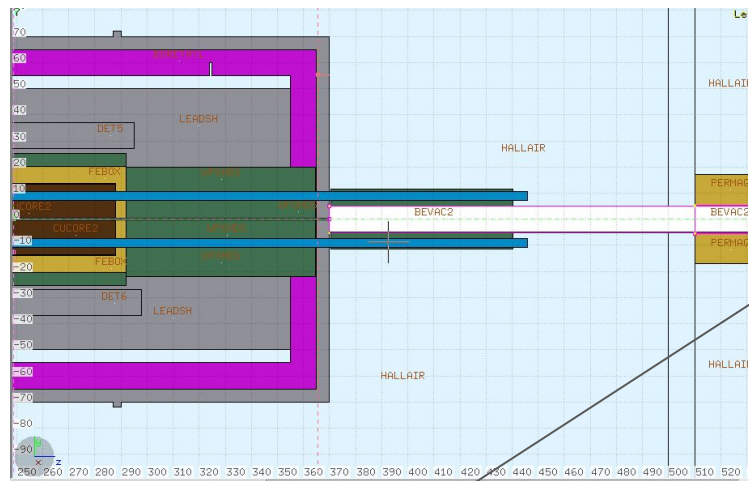
DoseEQ profile-2' 420<z/cm<450dxdydz =0.05\*0.05\*0.2 |X/cm|<20 B=0.24/0.25/0.22T CPSKPTTELL080822 23



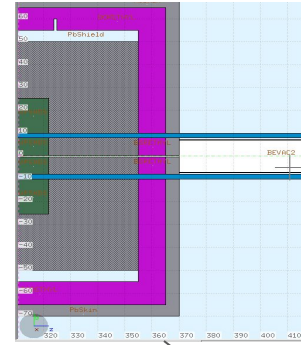
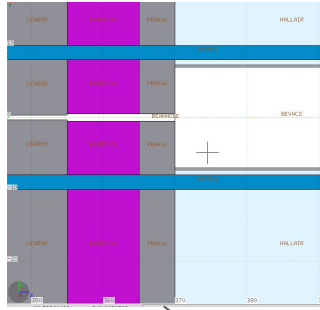
DoseEQ CPS bot : -70 >y/cm>-100 dxdydz =0.05\*0.05\*0.2 |X/cm|<30 B=0.24/0.25/0.22T CPSKPTTELL080822 23



# Almost Final model+tail. After 1Hr Dose Eq. Effect of cylindrical Tail at CPS exit.

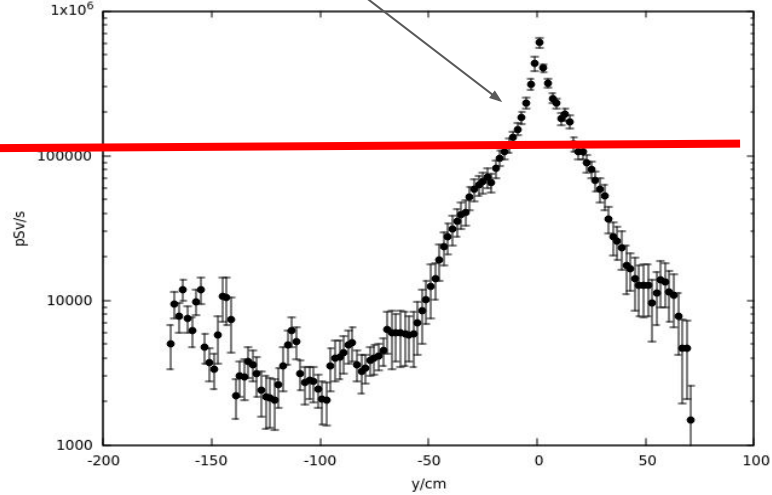
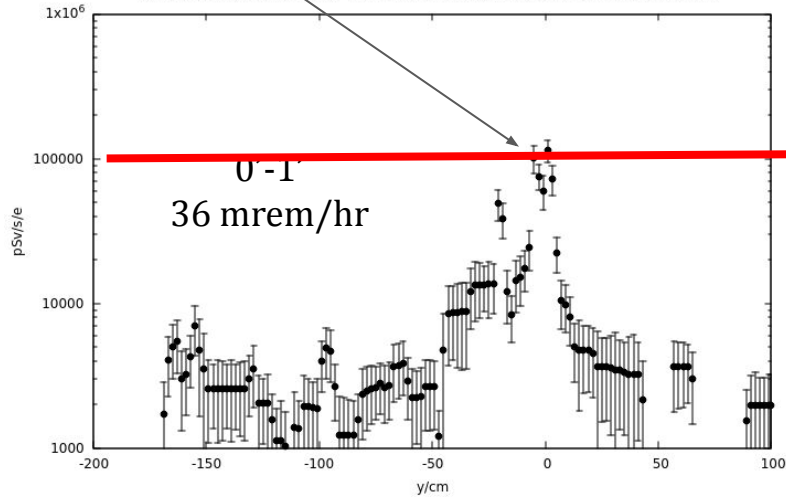


# Effect of wider beam channel at CPS exit. Not final model. After 1Hr Dose Eq.

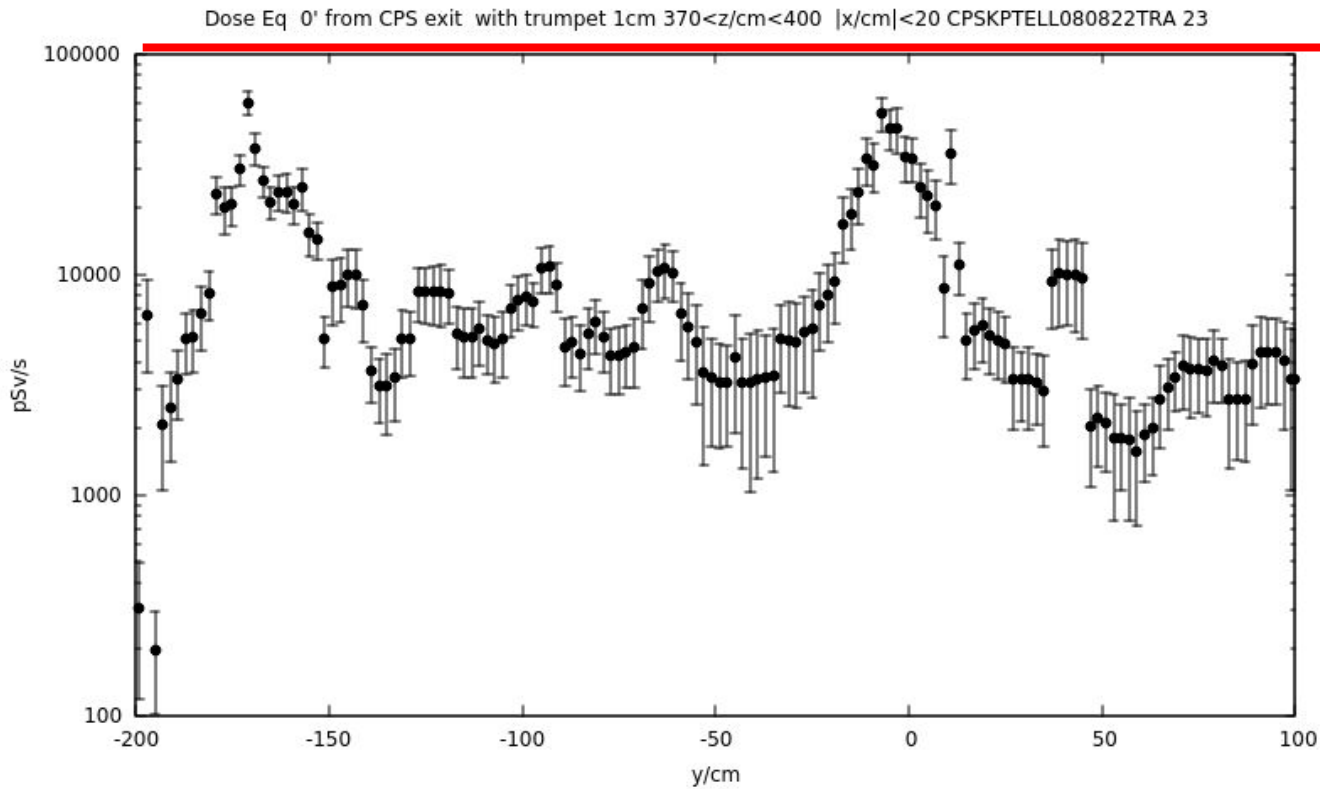


1Hr DoseEq 3m COIL B/T=0.31 |x/cm|<20 370<z/cm<400 KPSKPTBOXBODY063022 23

After 1000+1 Hr Dose Eq 0" KPSKPTBOXBODY072022 23

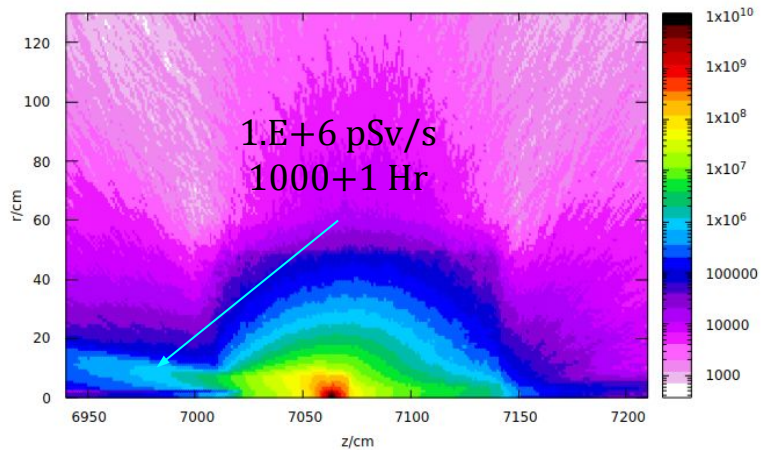


- Positive Effect of Channel transition needs to be dowblechecked with final model.

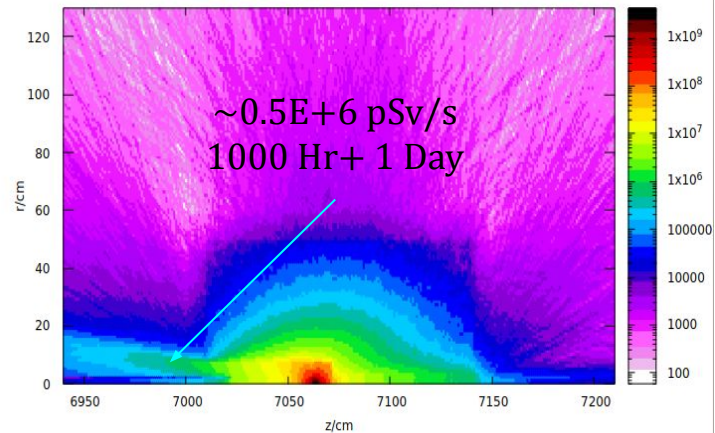


# Dose Eq. at KPT. Dose $10^5$ pSv/s = 36 mrem/hr.

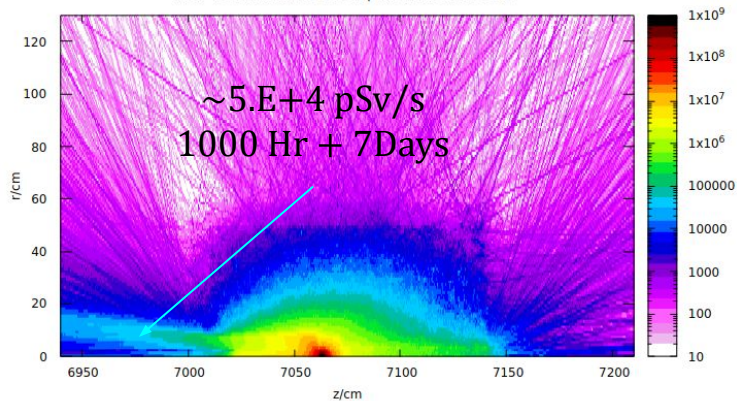
After 1000+1 Hr Dose Eq KPSKPT-BOX-CM-CU 23



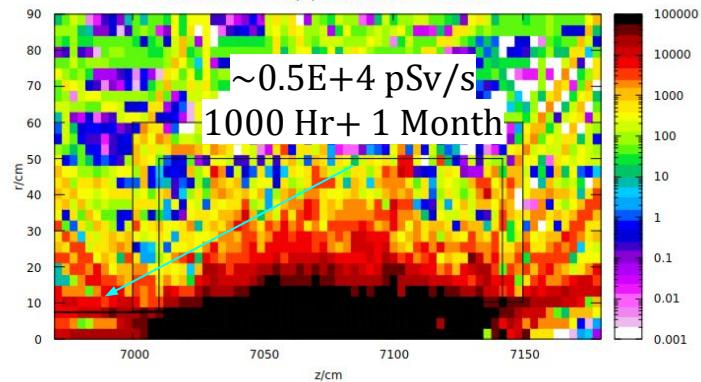
After 1000 Hr +1 Day Dose Eq KPSKPT-BOX-CM-CU 24



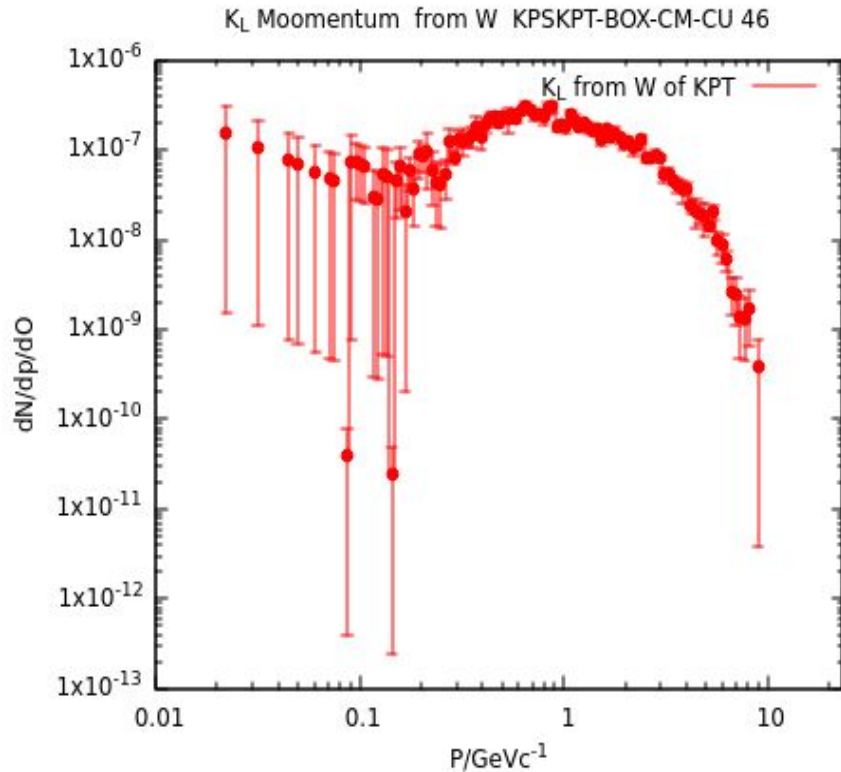
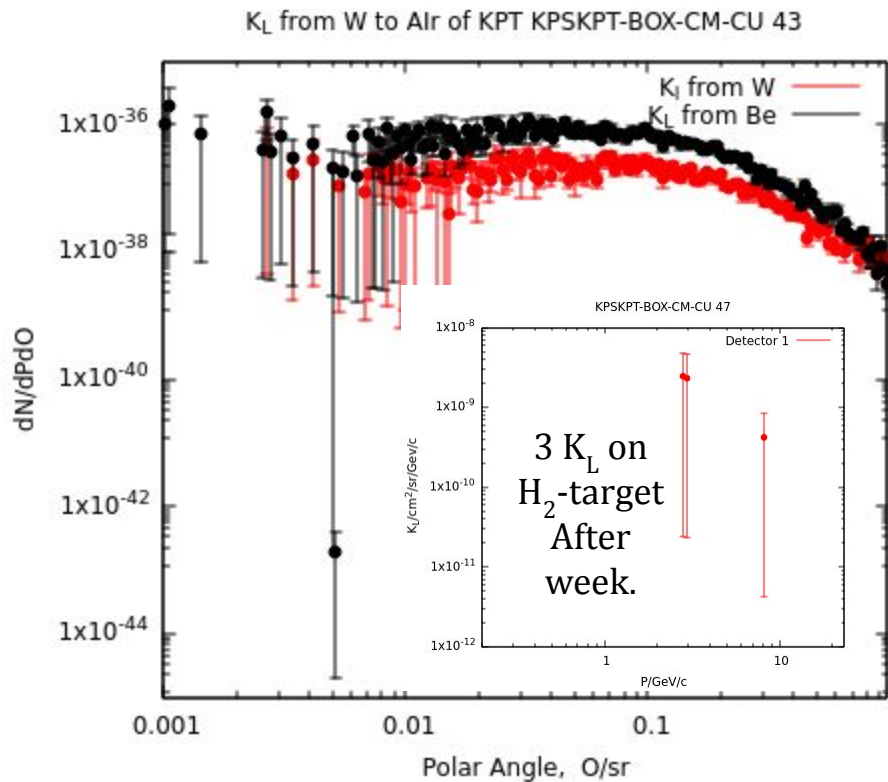
After 1000Hr+1 Week Dose Eq KPSKPT-BOX-CM-CU 26



1000 Hr+1Month Dose Eq. [pSv/s] CPSKPTCELL080822TRA 30



K-Long from KPT and on H<sub>2</sub>-Target at 12 GeV. To compare with 24 GeV.  
 10<sup>6</sup> primary electrons. Acceptance of H<sub>2</sub> target = 0.00125 sr.





**THE END**

