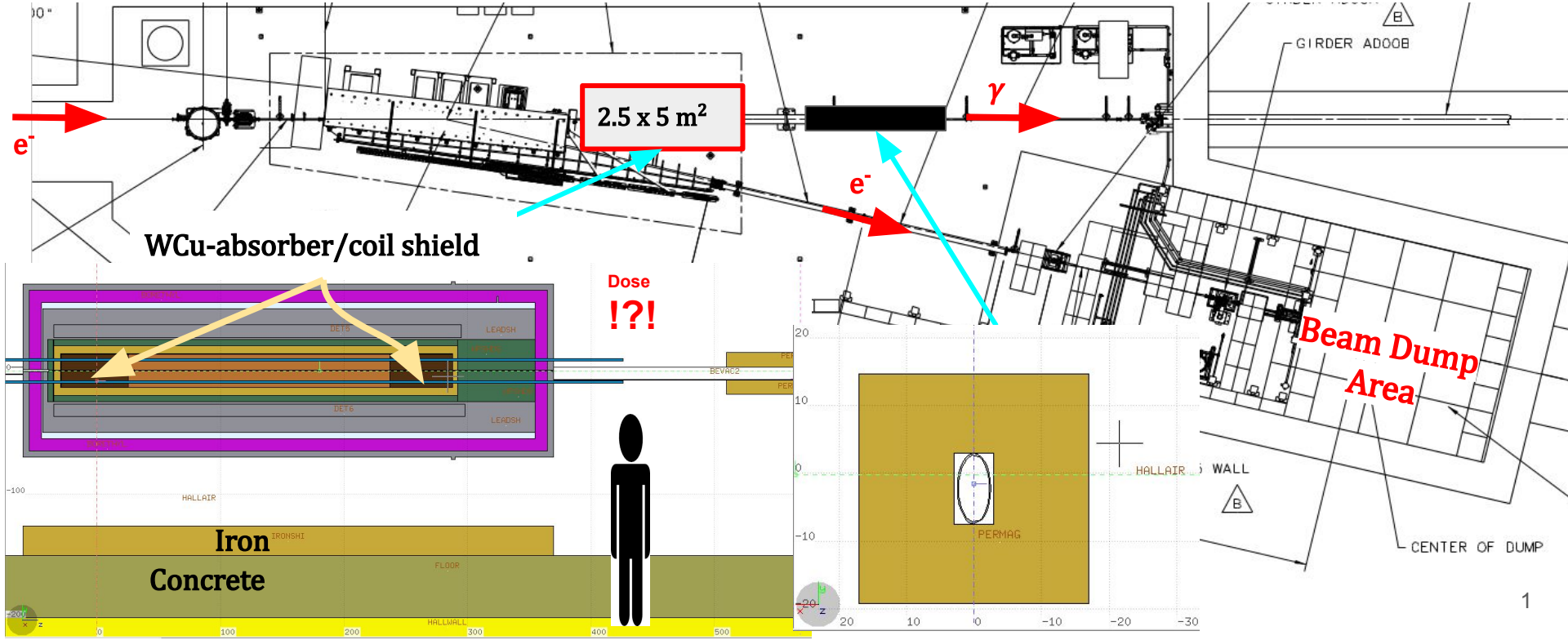
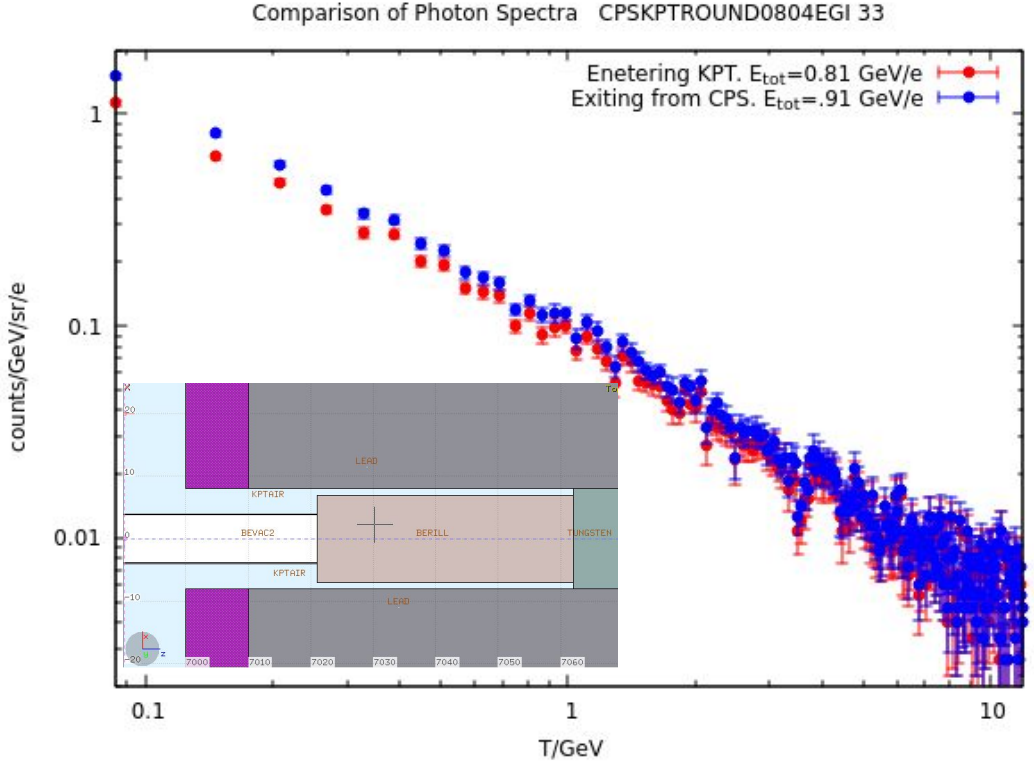
New FLUKA Model for CPS-KPT CPSKPTELL080322.flair;
3 m Dipole with 2 Coils **0.5 m × 0.25 T;** Round Beam Chan. **r/cm=0.375**;
with Perm. Magnet **0.22 T** and **Elliptical→Round** Vac. Pipe from CPS to KPT.
Photon Radiator – first **0.134 cm** of the Absorber.

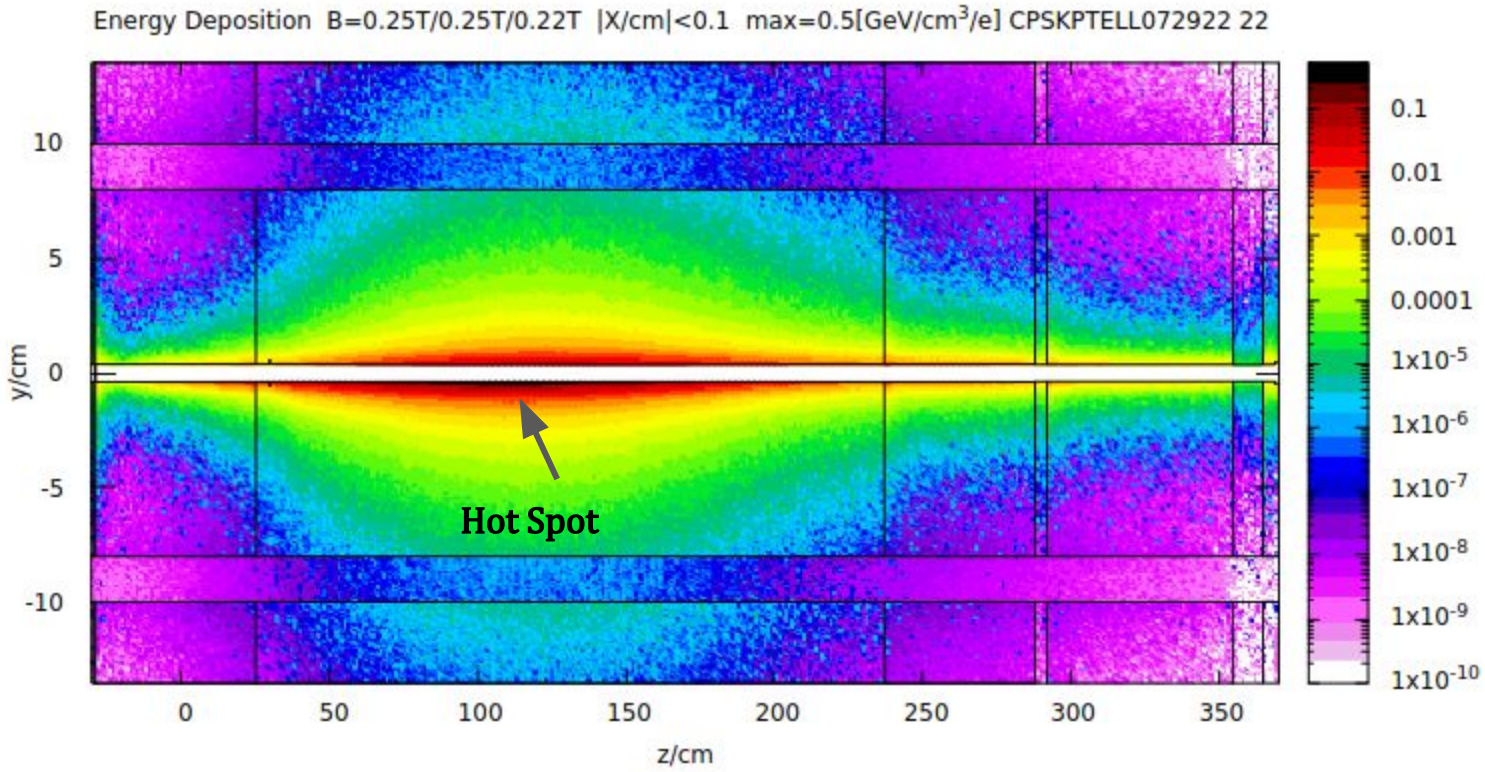


Homework. Comparison of photons exiting from CPS with those



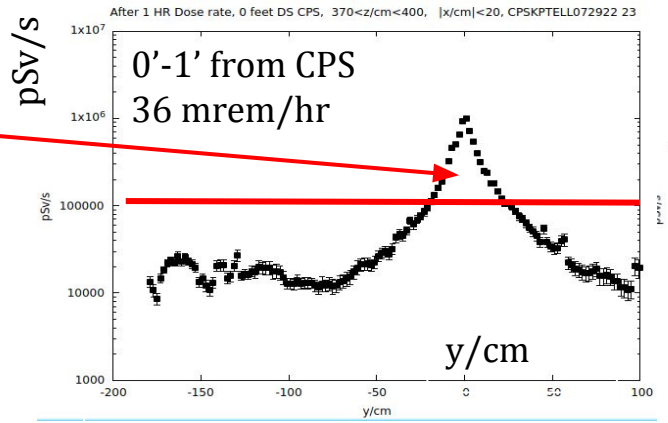
Region FLUKA	Energy/GeV SUM= 1.20E+01	Power SUM= 60.0E+00
RIGHTMAG	0.2597	01.3E+00
LEFTMAG	0.2609	01.3E+00
CUCORE	7.9566	39.8E+00
COILS	0.0495	24.8E-02
FEBOX	0.1064	53.3E-02
DET1	0.0014	69.9E-04
DET2	0.0015	72.9E-04
DET3	0.0037	01.8E-02
DET4	0.0037	01.9E-02
DET5	0.0000	01.9E-06
DET6	0.0001	04.3E-04
LEADSH	0.3461	01.7E+00
PbShield	0.0000	69.1E-08
BORETHYL	0.0126	06.3E-02
PbSkin	0.0789	39.5E-02
HALLAIR	0.0130	06.5E-02
HALLWALL	0.0760	38.1E-02
VOID	0.0234	11.7E-02
DUMP2	0.0000	07.7E-06
DUMP3	0.0034	01.7E-02
DUMP4	0.0032	01.6E-02
DUMP5	0.0039	02.0E-02
CUCORE1	1.79E-02	08.9E-02
CUCORE2	1.75E-02	08.8E-02
IRONSHI	1.36E-05	68.0E-06
BORATE	3.64E-05	01.8E-04
PERMAG	3.14E-01	01.6E+00
WPSHDS	1.32E+00	06.6E+00
WPSHUS	2.57E-03	01.3E-02
BEPIP1	2.81E-10	14.1E-10
BEPIP2	6.59E-02	33.0E-02
DUMP1	7.98E-03	04.0E-02
WTRPI1	3.51E-04	17.6E-04
FLOOR	2.21E-03	01.1E-02
CONVE1	1.68E-03	84.0E-04
WTRPI2	3.82E-04	19.1E-04
LEAD	1.16E-03	58.1E-04
BERILL	5.16E-02	25.9E-02
TUNGSTEN	9.32E-01	04.7E+00
KPTAIR	4.37E-02	21.9E-02

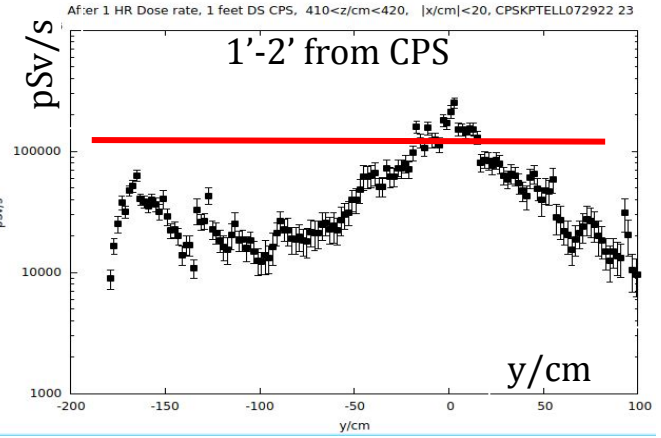
Energy Deposition Map in CPS layer |x/cm|<0.1

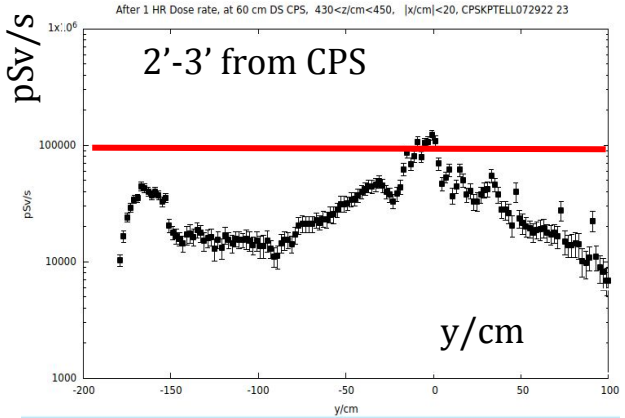


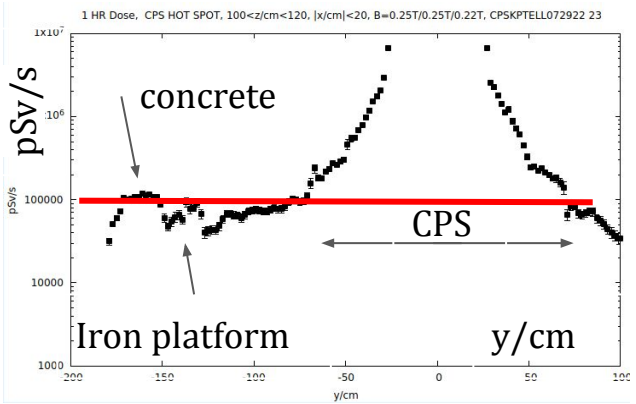
Radiological safety and Beam Quality at CPS exit.

What we pay for
Coil Safety

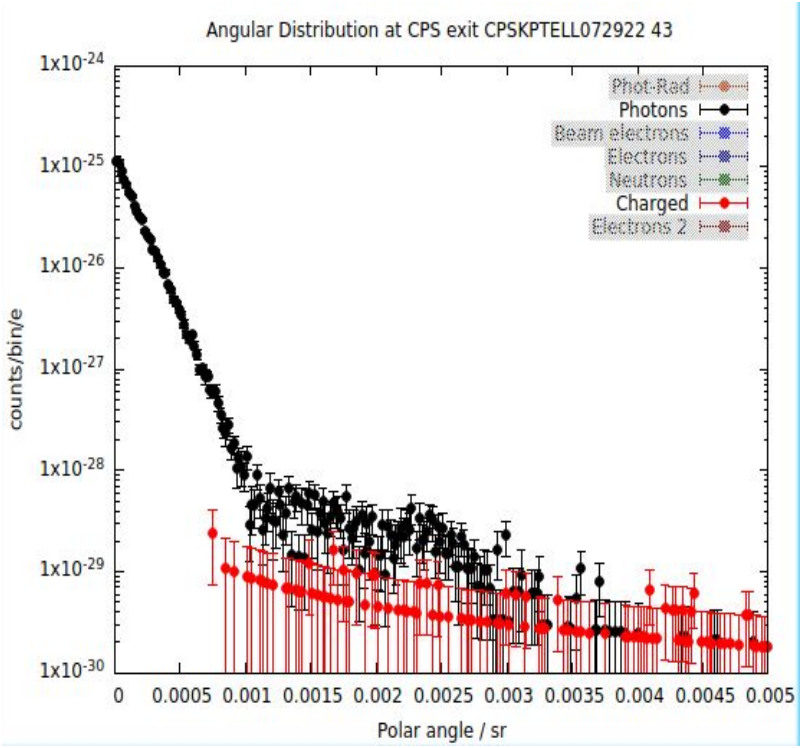


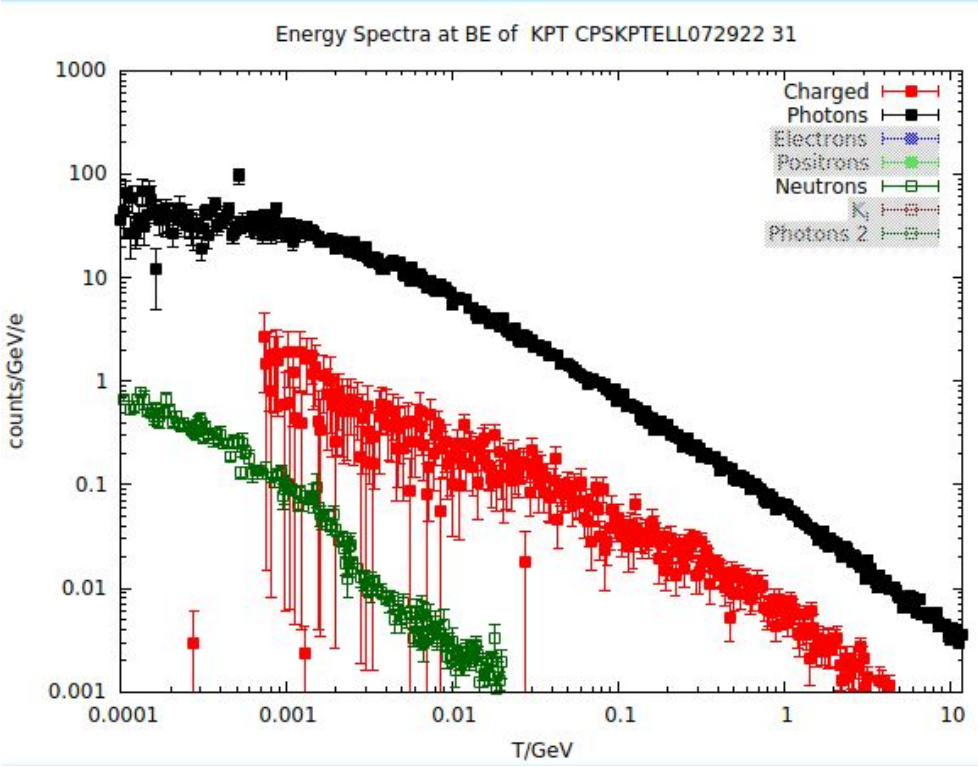




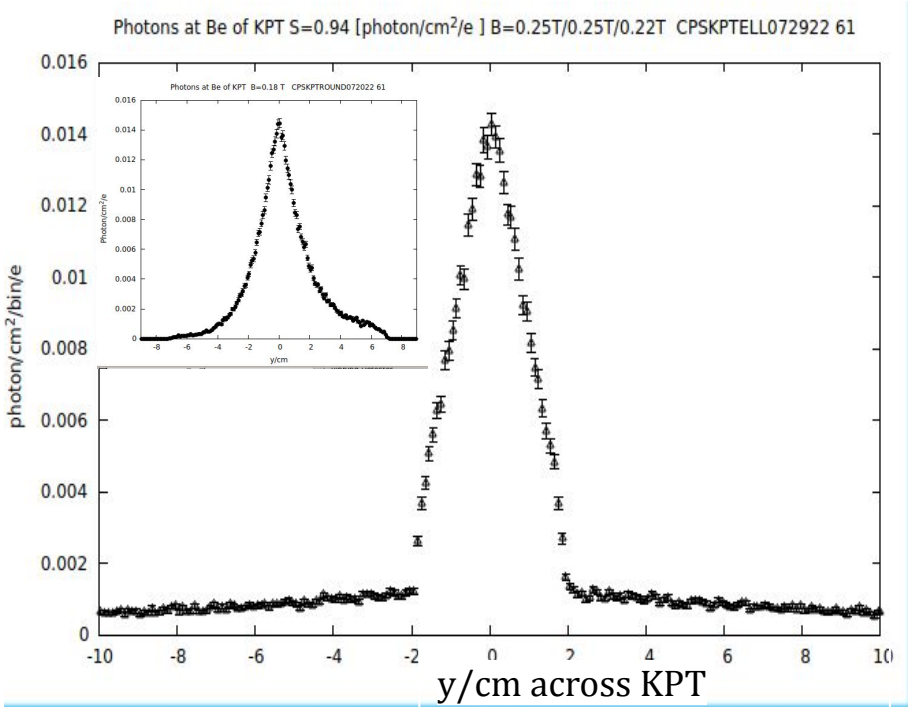


Beam Quality at CPS exit and KPT entry.

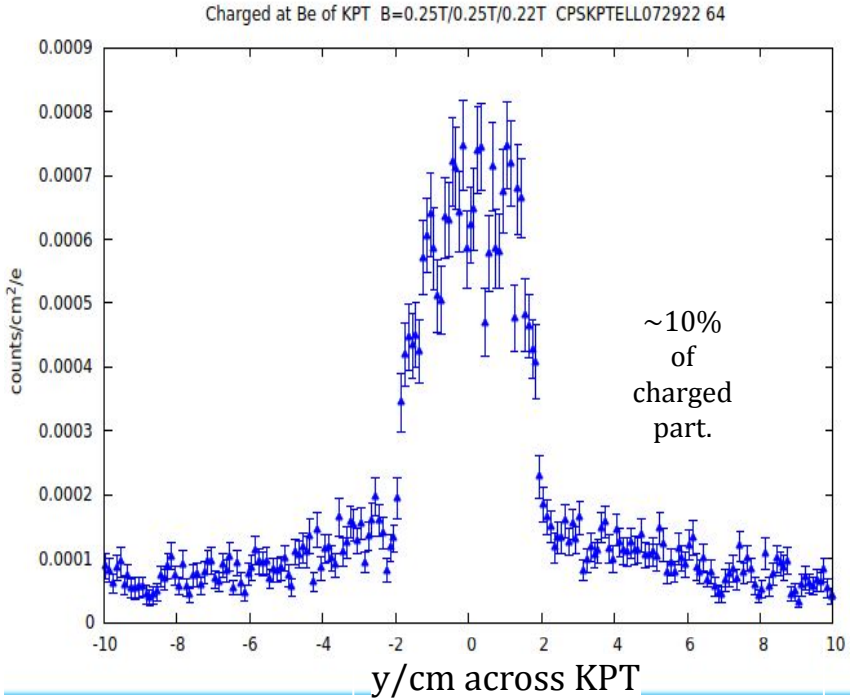




Beam Quality at KPT.



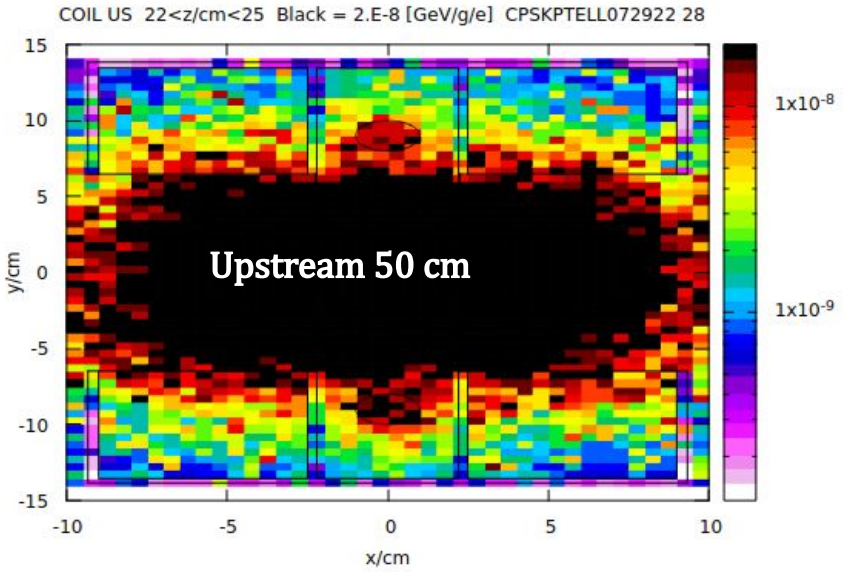
y/cm across KPT

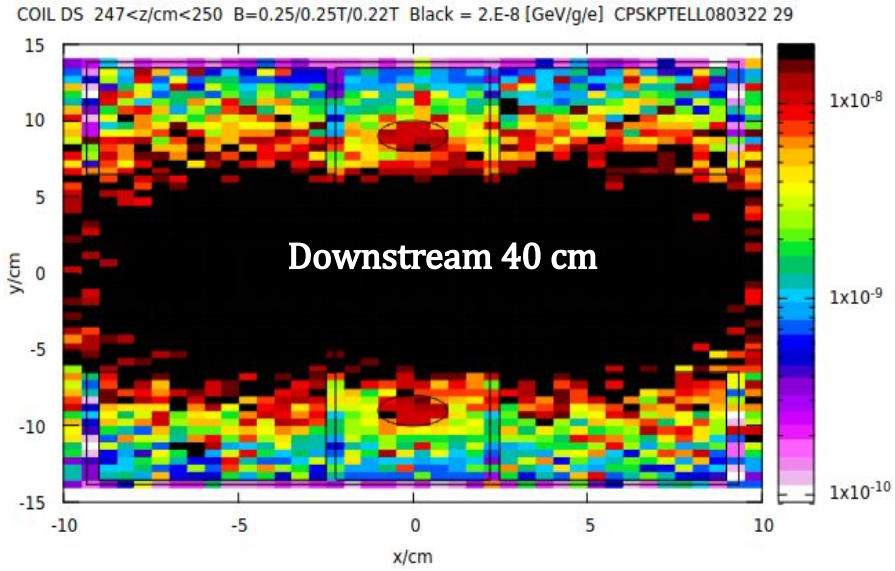


y/cm across KPT

- **After Permanent Magnet the Beam Pipe should be wider; r~5-7 cm (?)**

Radiological safety of two Coils.





- Kapton insulation Lifetime for both coils is of 1100 days (2.E-8 GeV/g/e) of contin. operation.
- Lifetime of Beam Line Permanent Magnet (Sm based) is of 100 years (2.E+16 n/cm^2).
- Inside the CPS Hot Spot Perm. Mag. Lifetime ~3 days only.