

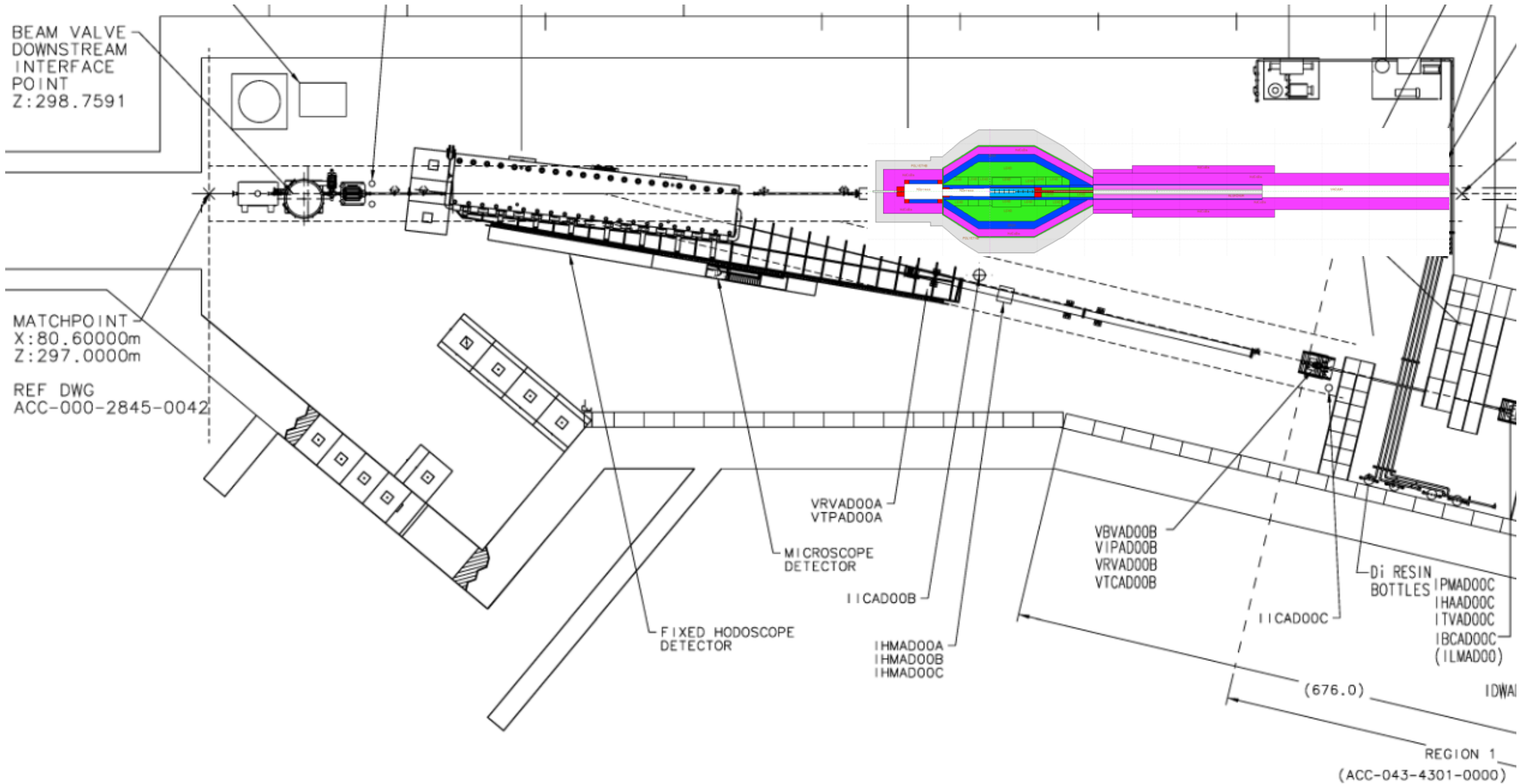
K⁰L CPS Meeting July 10, 2023

P. Degtiarenko

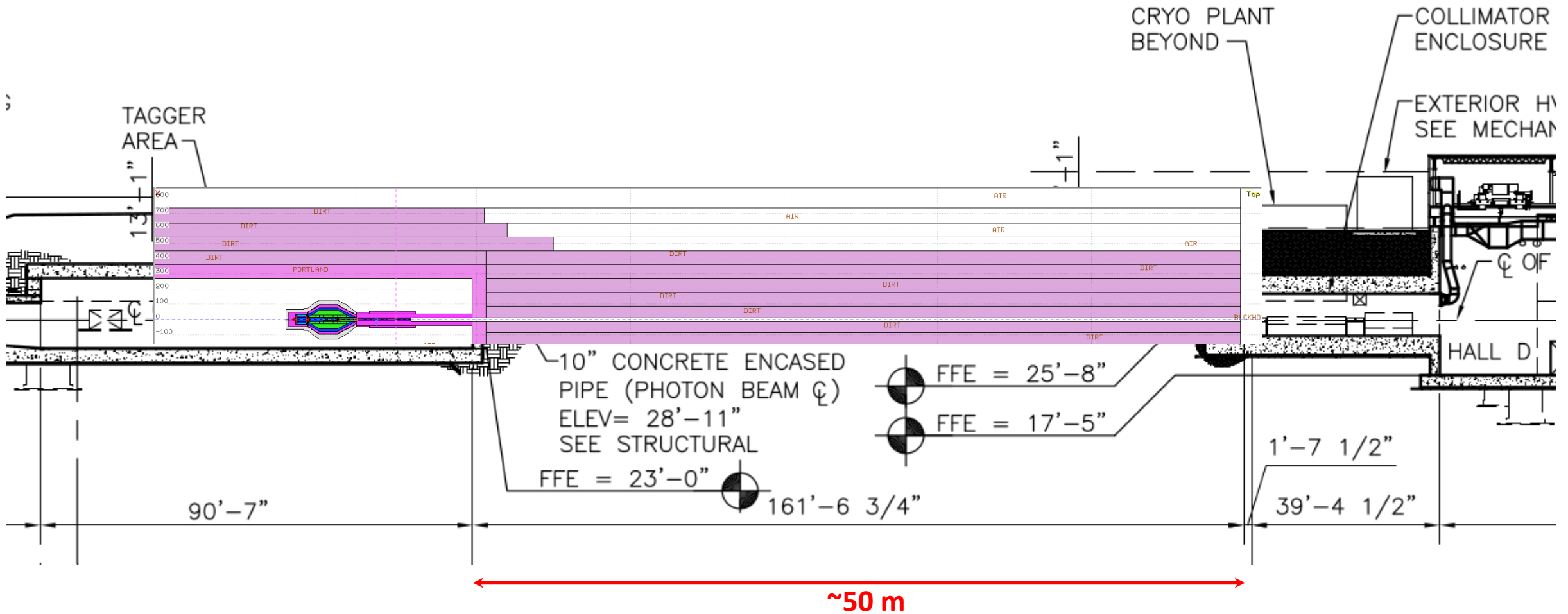
Design Update – July 2023, “KLCPS74/75”

- Adjustments to the model
 - Update of the shielding geometry to cut the corners and readjust Lead skin
 - Place the CPS to allow the 2 ft space for the electron beam line
 - Adjustments to the beam collimator at the entrance to allow 14 mm halos
 - Large statistics runs for the final set of plots before the ERR
- Table of weights calculated

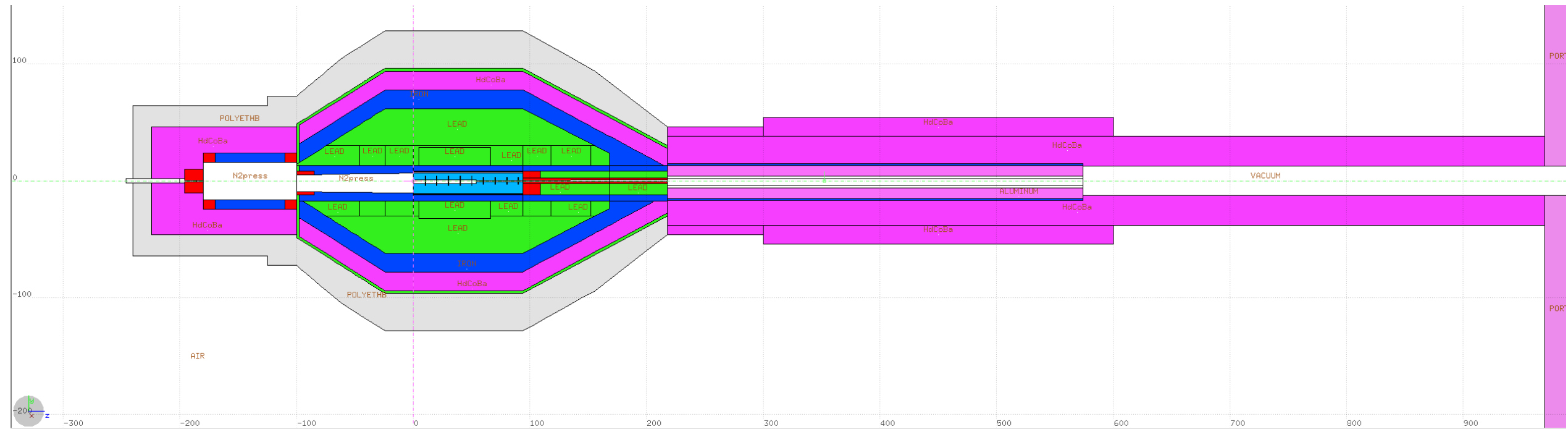
CPS Positioning in the Hall D Tagger



Hall D Tagger and the Cave, Vertical Slice



CPS Assembly, Vertical Slice

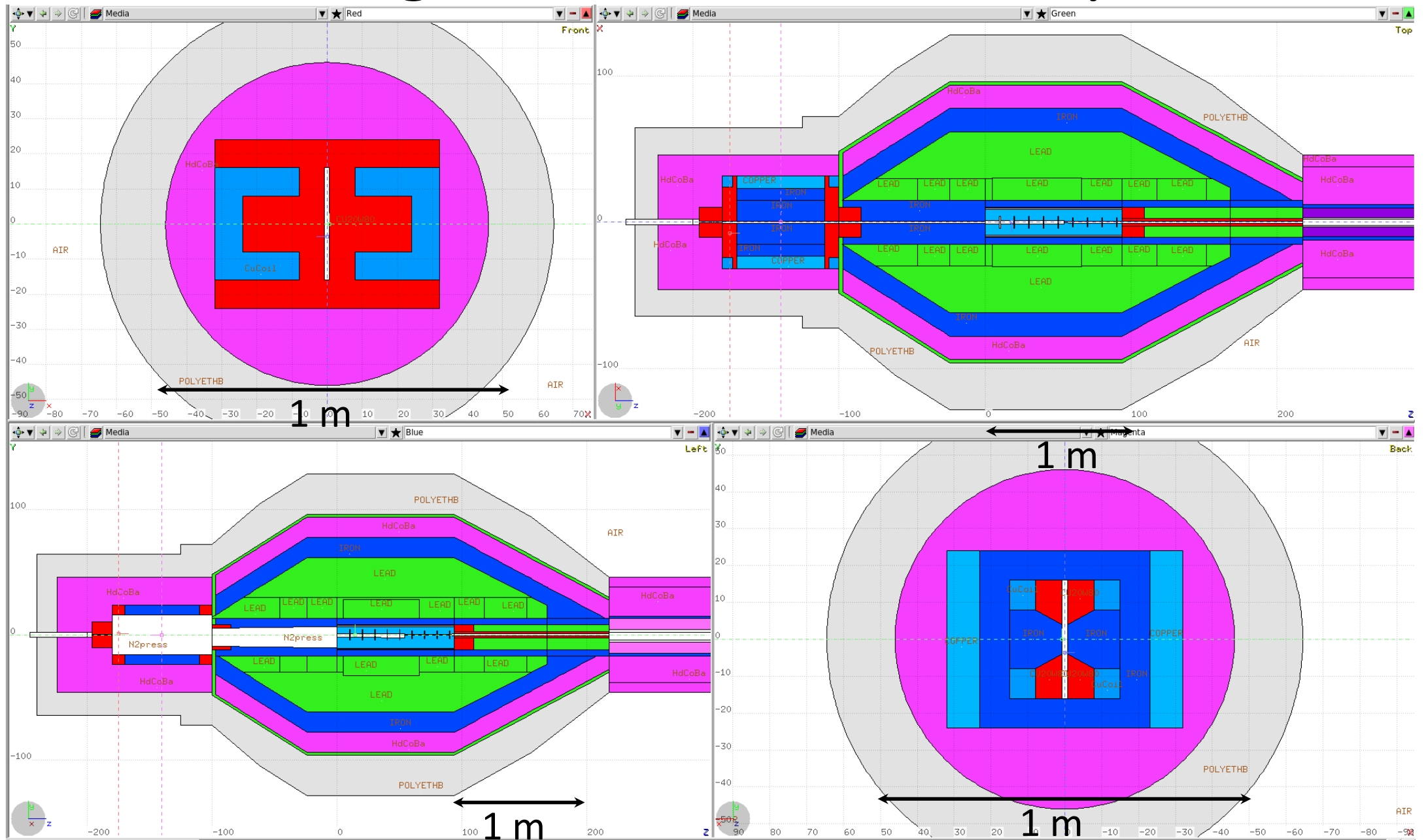


10 m

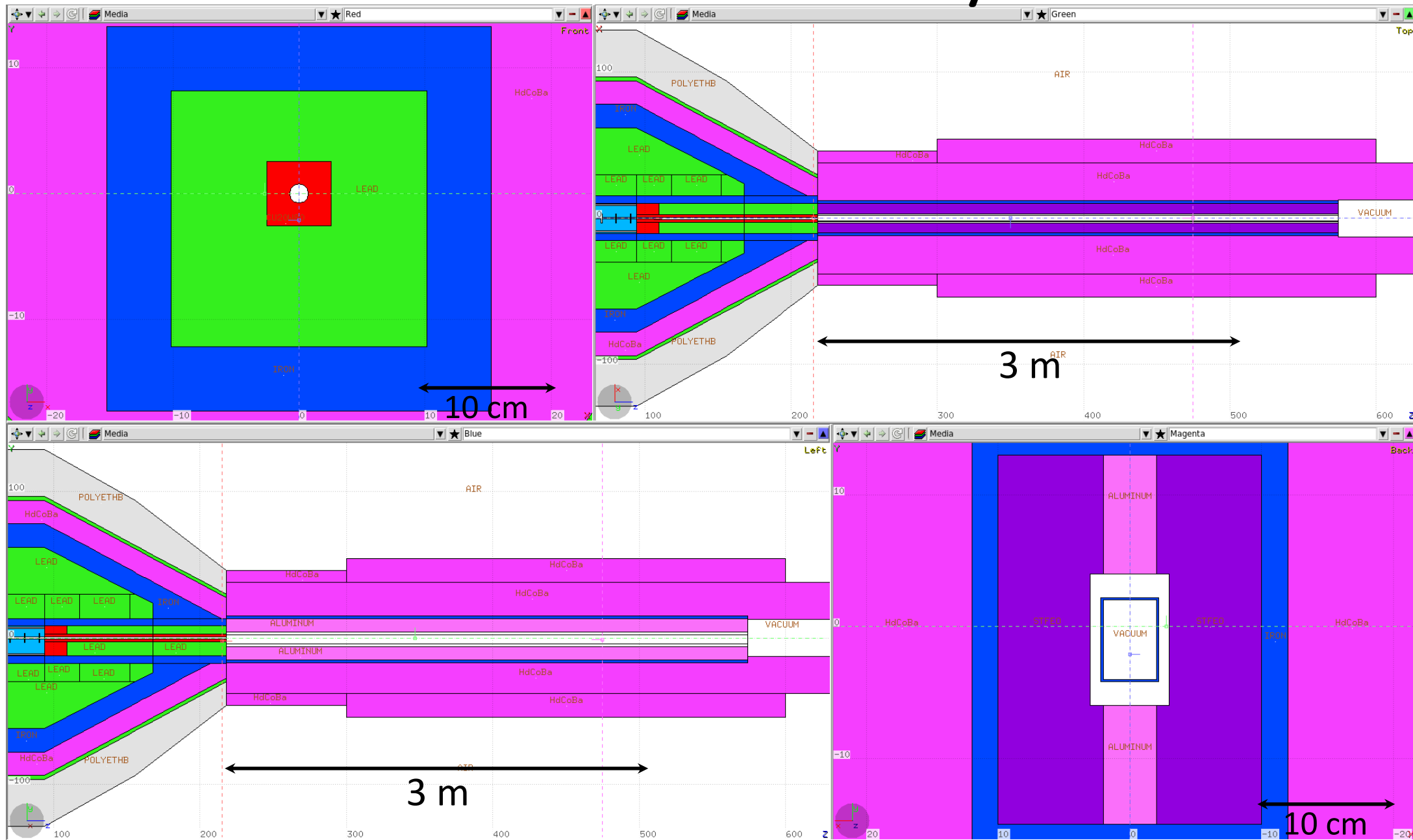
CPS Assembly, Vertical Slice

Contents of the table: weight in metric tons					
Material \ CPS region	Entry	Core	Body	Exit line	totals
Copper-Tungsten 20:80	1.34	0.23	0	0	1.57
Lead	0	0.48	25.73	0	26.21
Copper	0.52	0.35	0	0	0.87
Iron and Steel	0.91	1.53	12.51	0	14.95
Barite Concrete	1.93	0	7.23	15.87	25.03
Borated Poly	1.05	0	5.45	0	6.5
totals	5.75	2.59	50.92	15.87	75.13

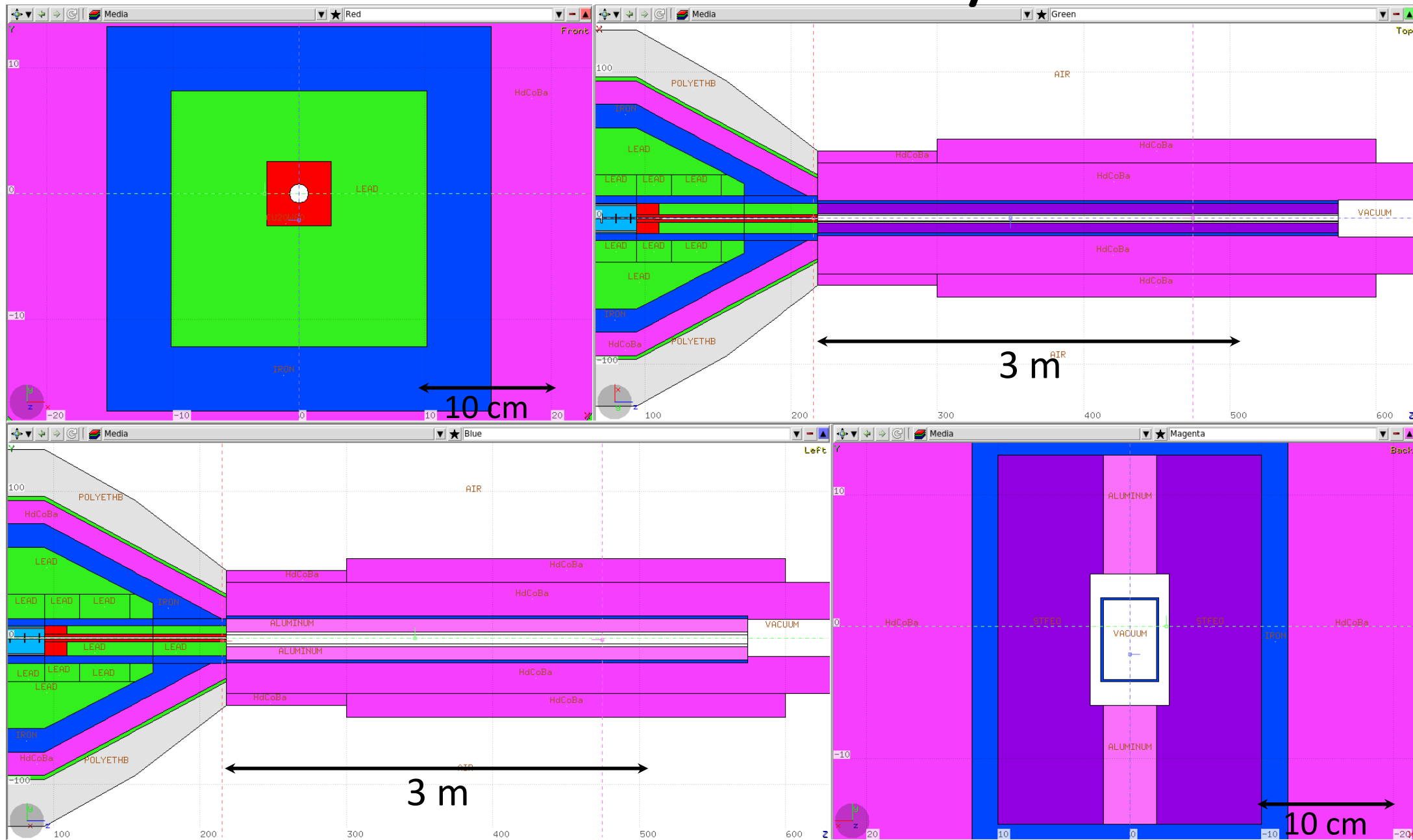
Magnet and CPS Geometry



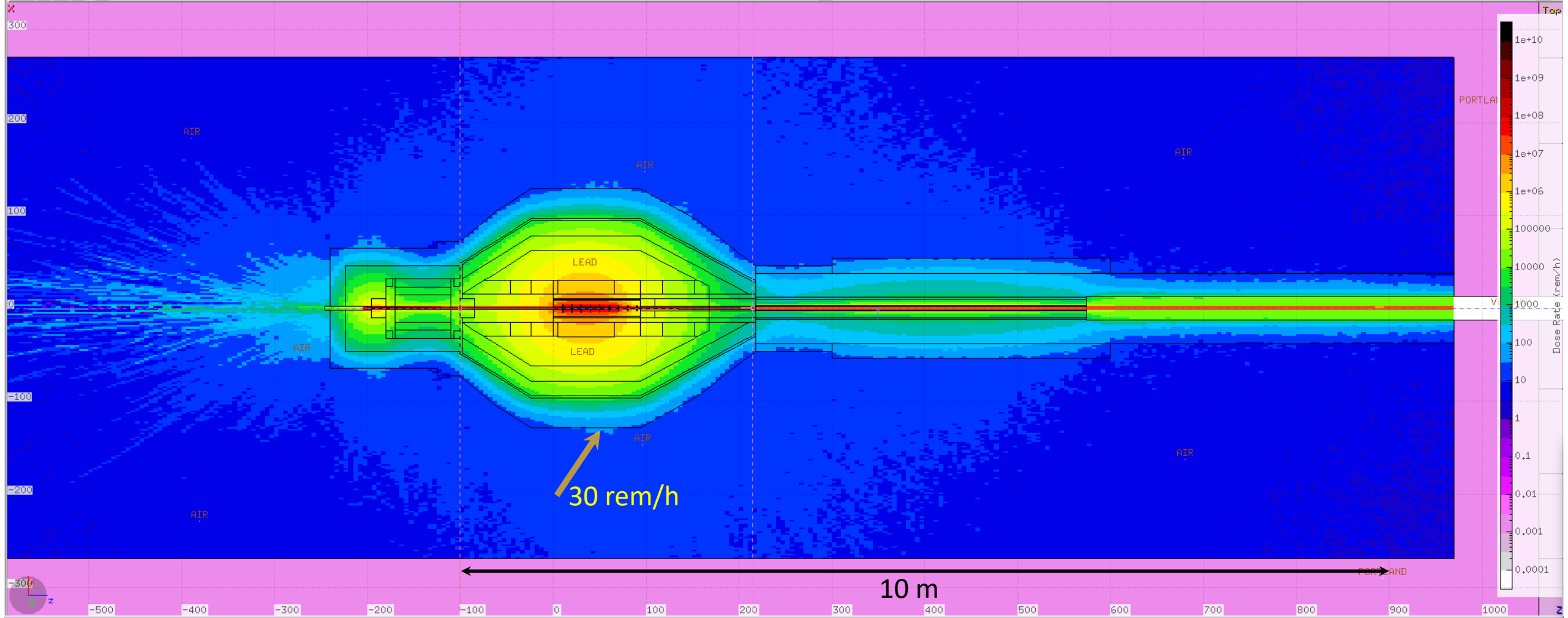
CPS Exit Geometry



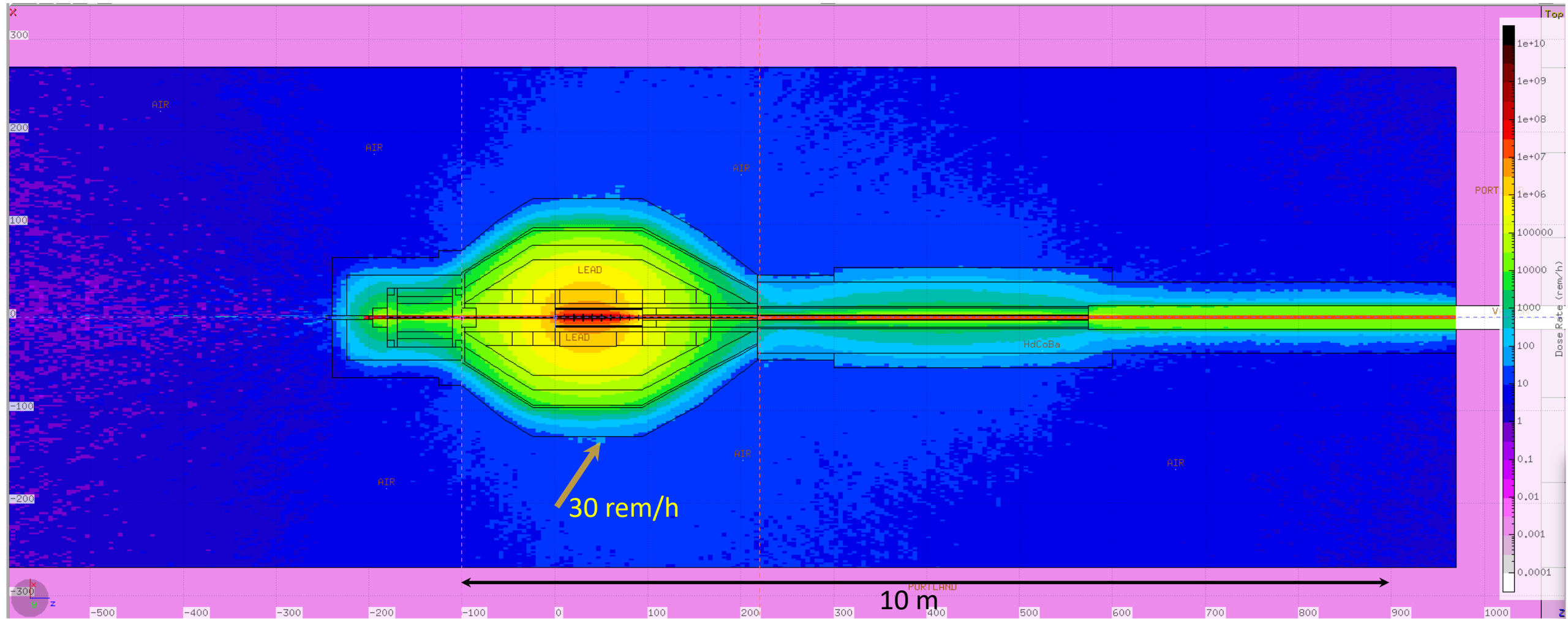
CPS Exit Geometry



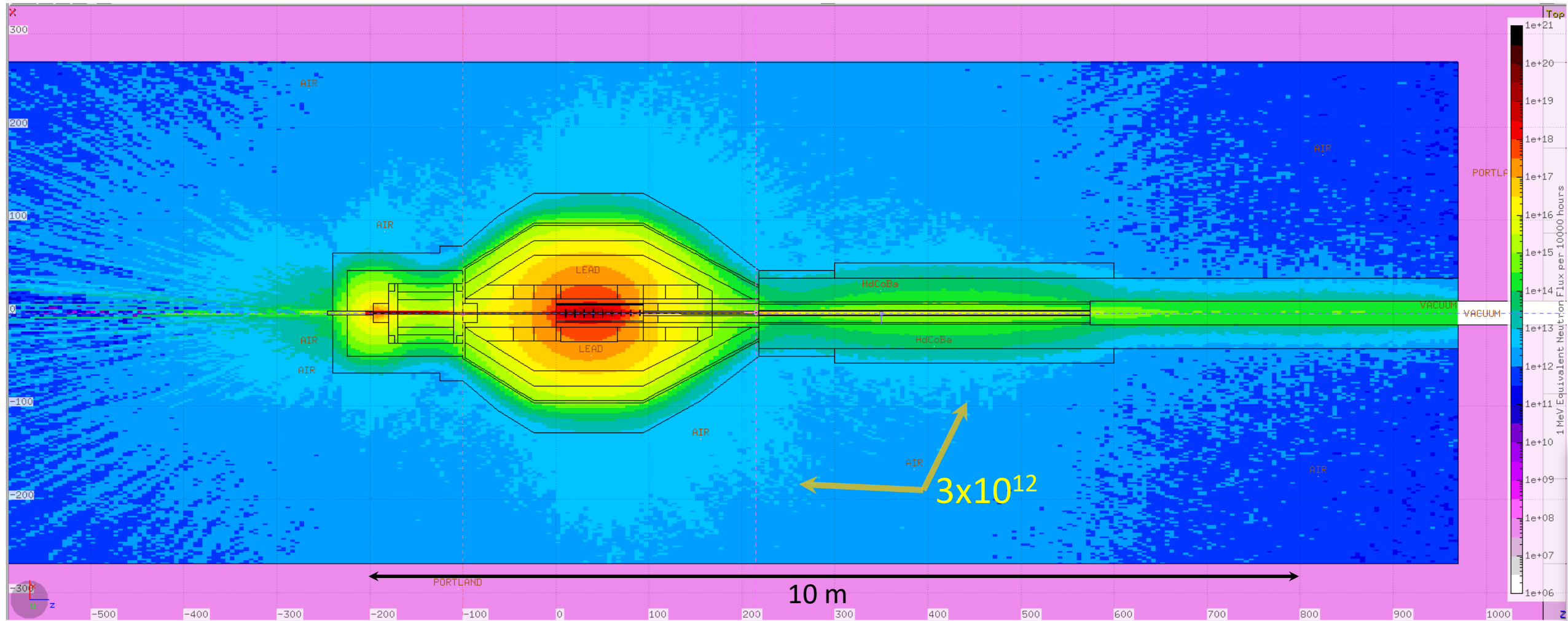
Prompt Dose Equivalent Rate – 14 mm Halo (rem/h)



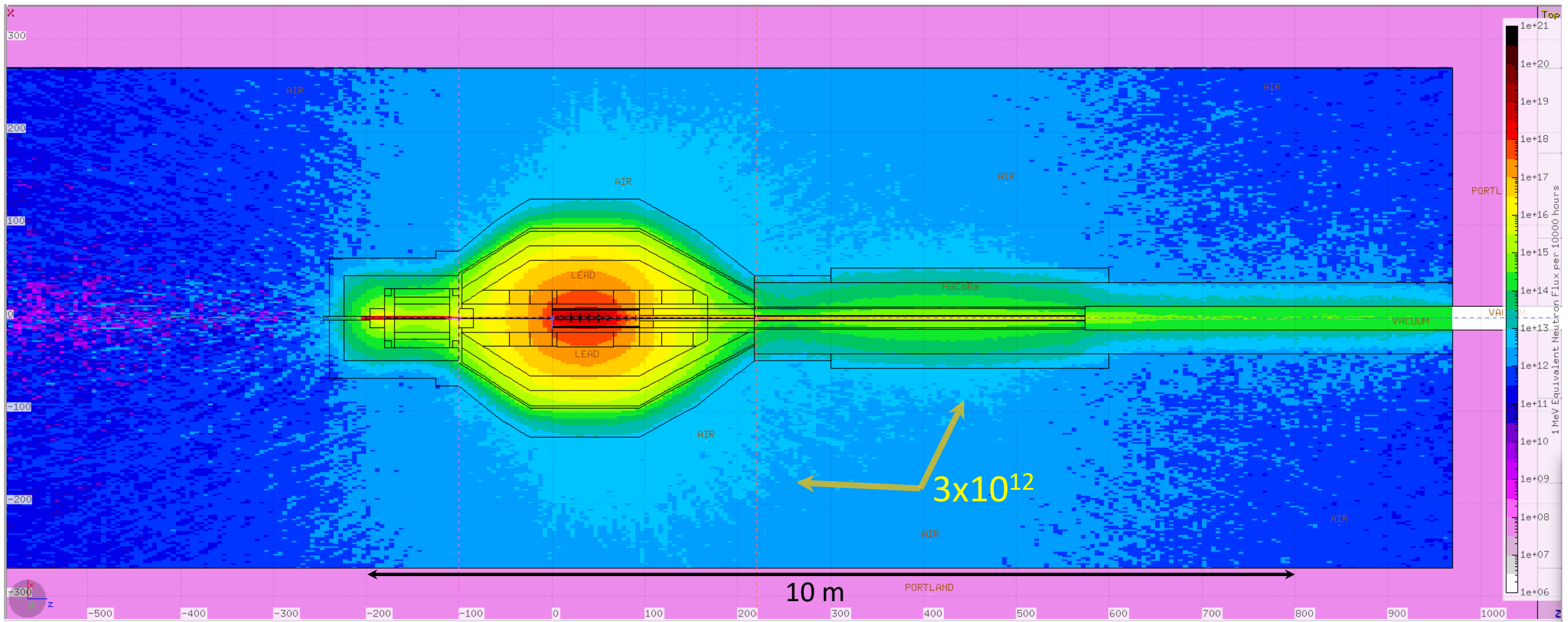
Prompt Dose Equivalent Rate – 10 mm Halo (rem/h)



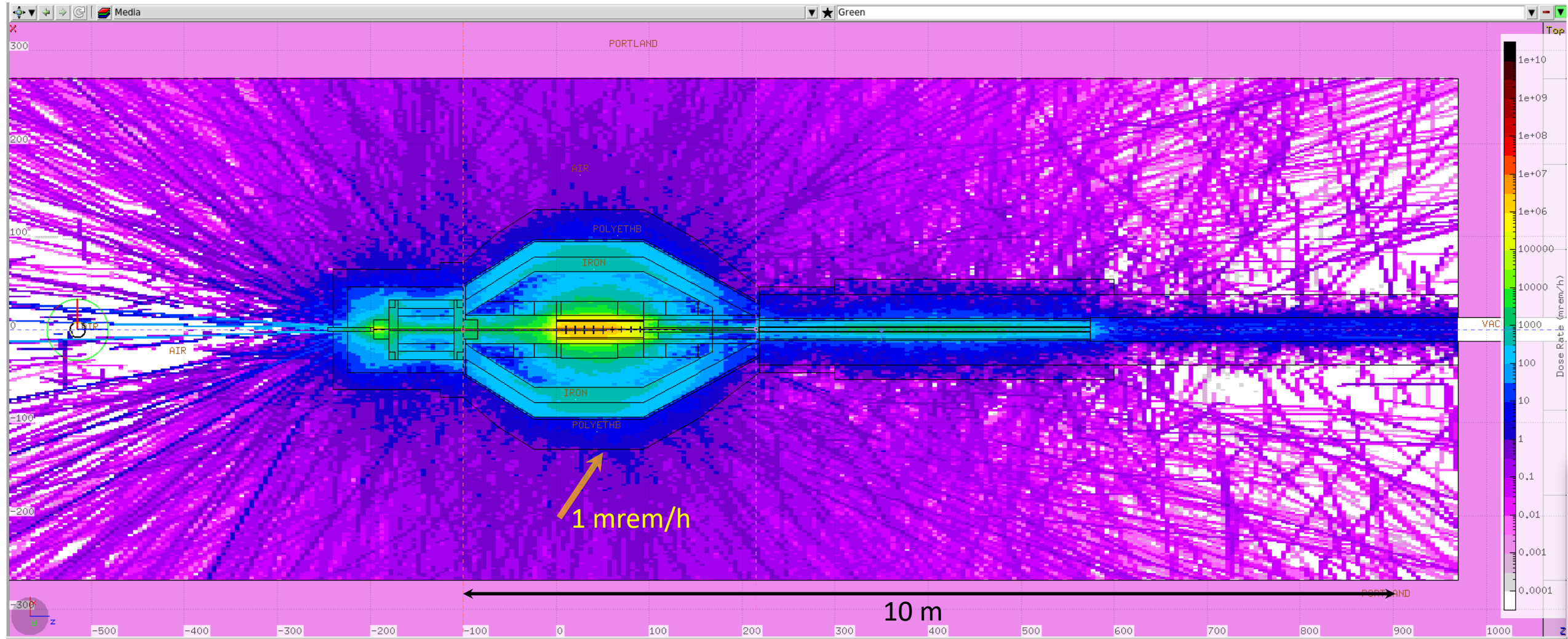
1 MeV Eq. n Fluence per 10000h (14 mm Halo)



1 MeV Eq. n Fluence per 10000h (10 mm Halo)

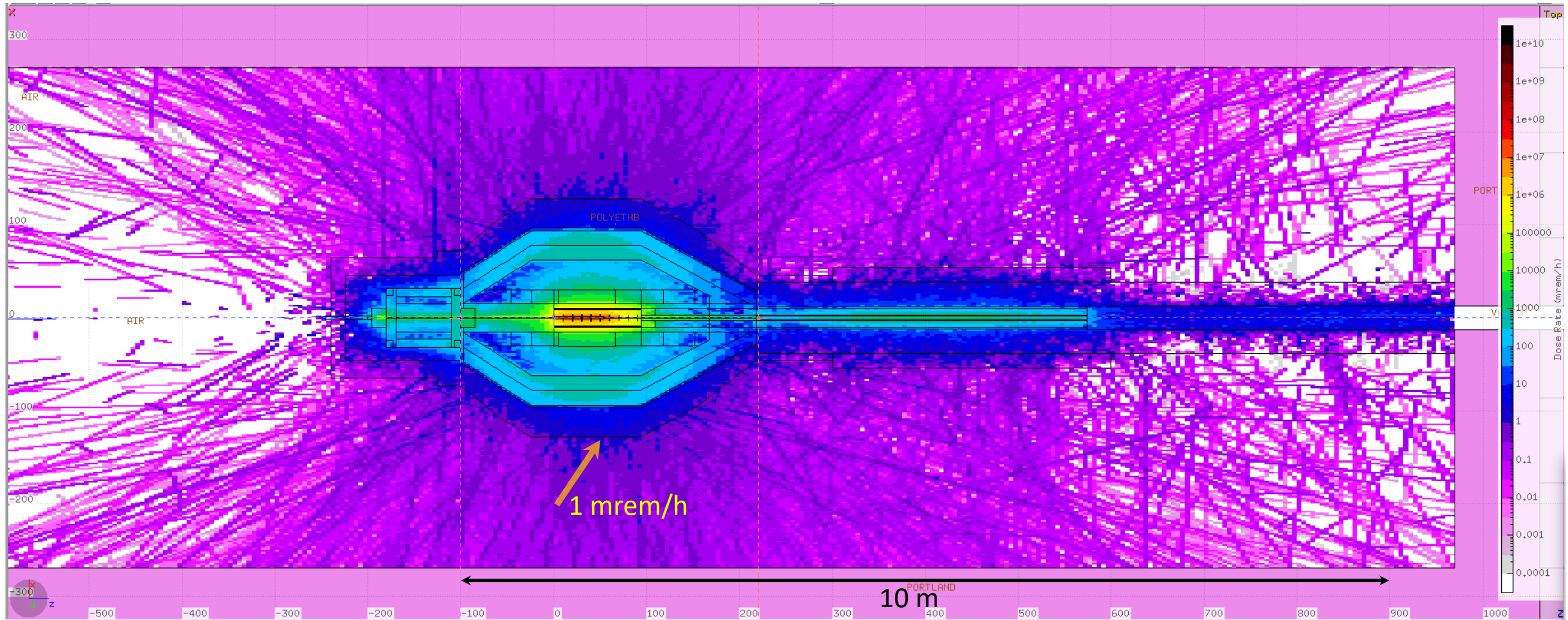


Activation Dose Eq. Rate – 14 mm Halo (mrem/h)



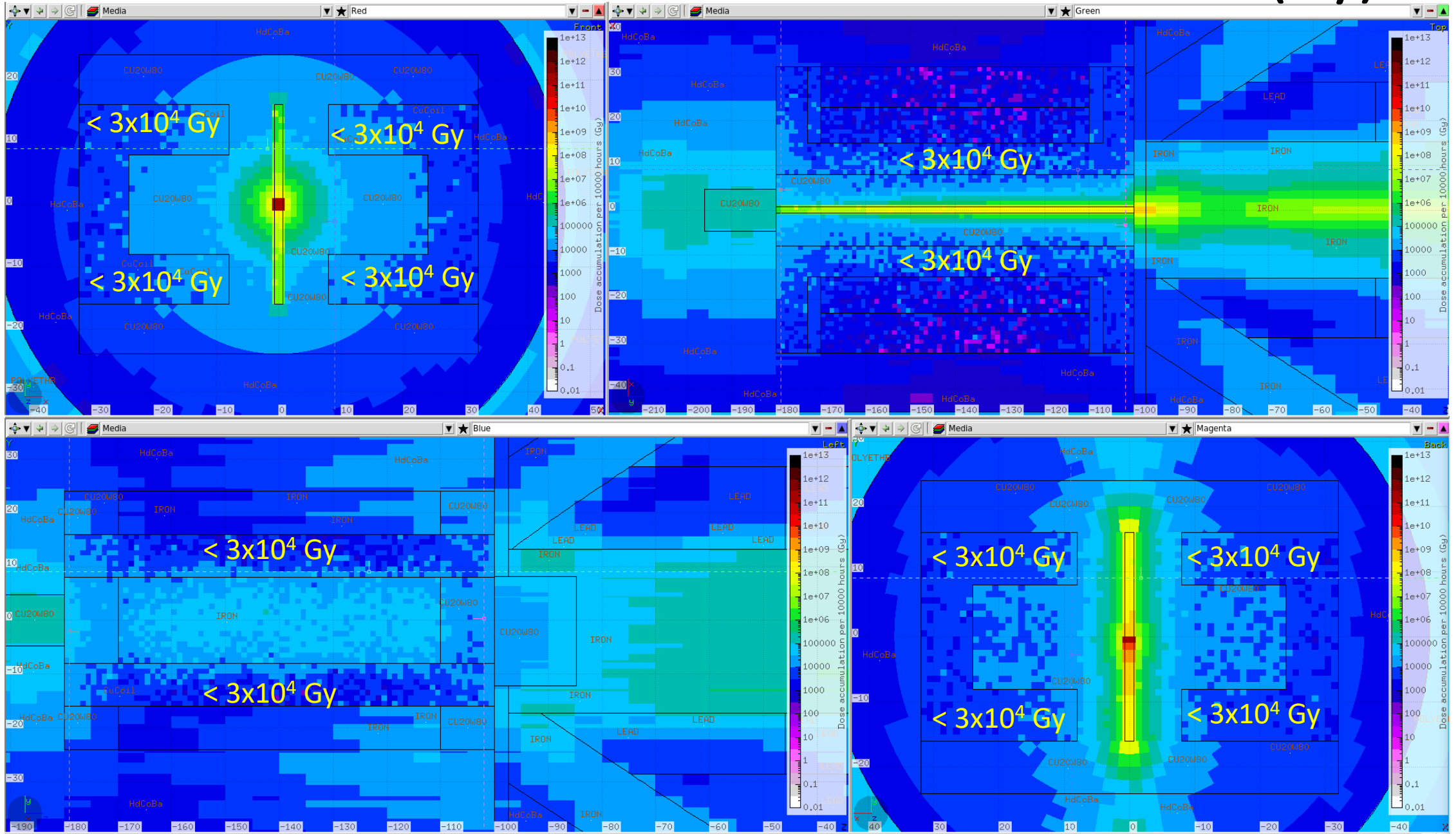
One hour after 10000 hours of beam delivery

Activation Dose Eq. Rate – 10 mm Halo (mrem/h)



One hour after 10000 hours of beam delivery

Dose Accumulation in 10000h – 14 mm Halo (Gy)



Dose Accumulation in 10000h – 10 mm Halo (Gy)

