The Compton polarimeter in IR6

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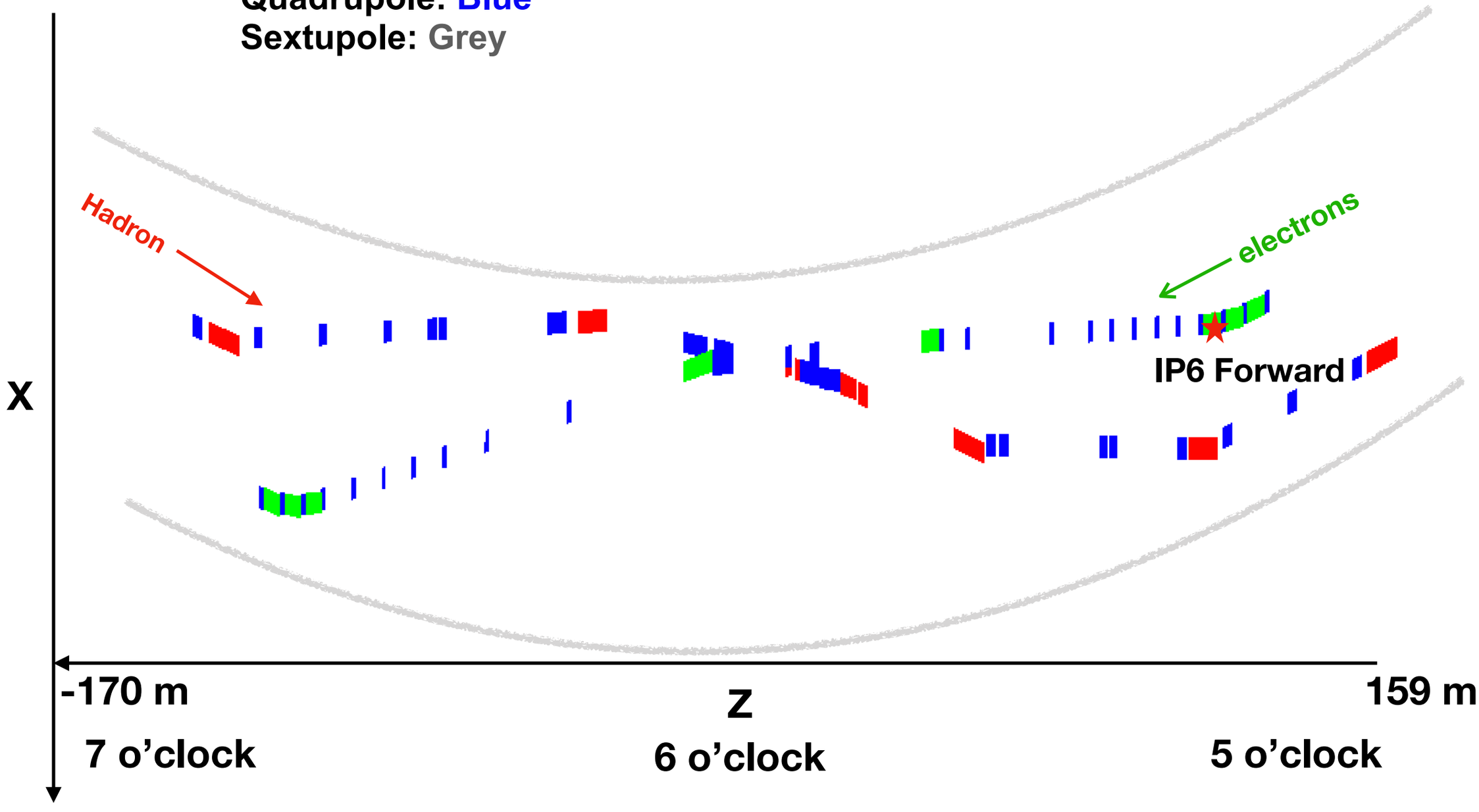
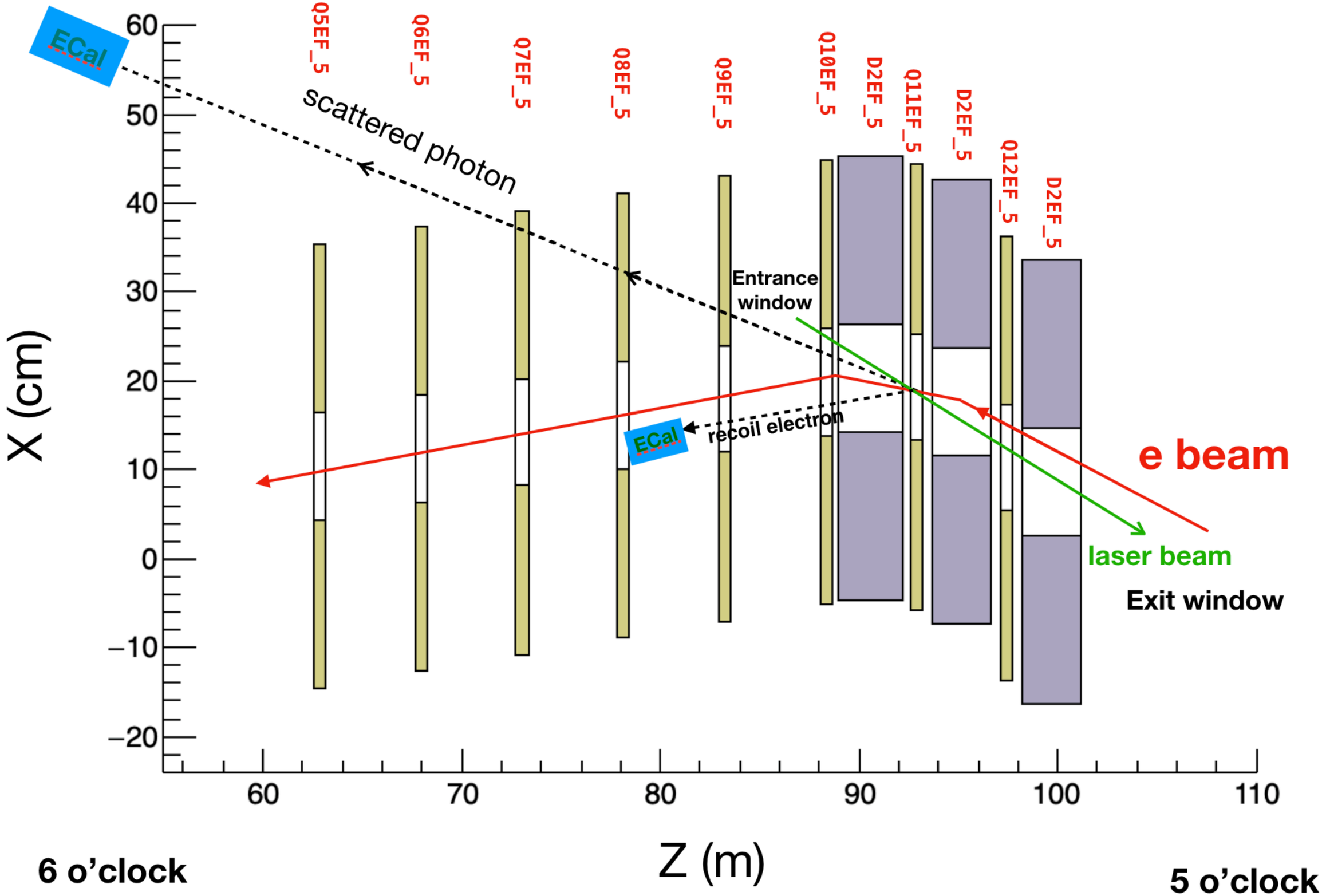
IR6 layout

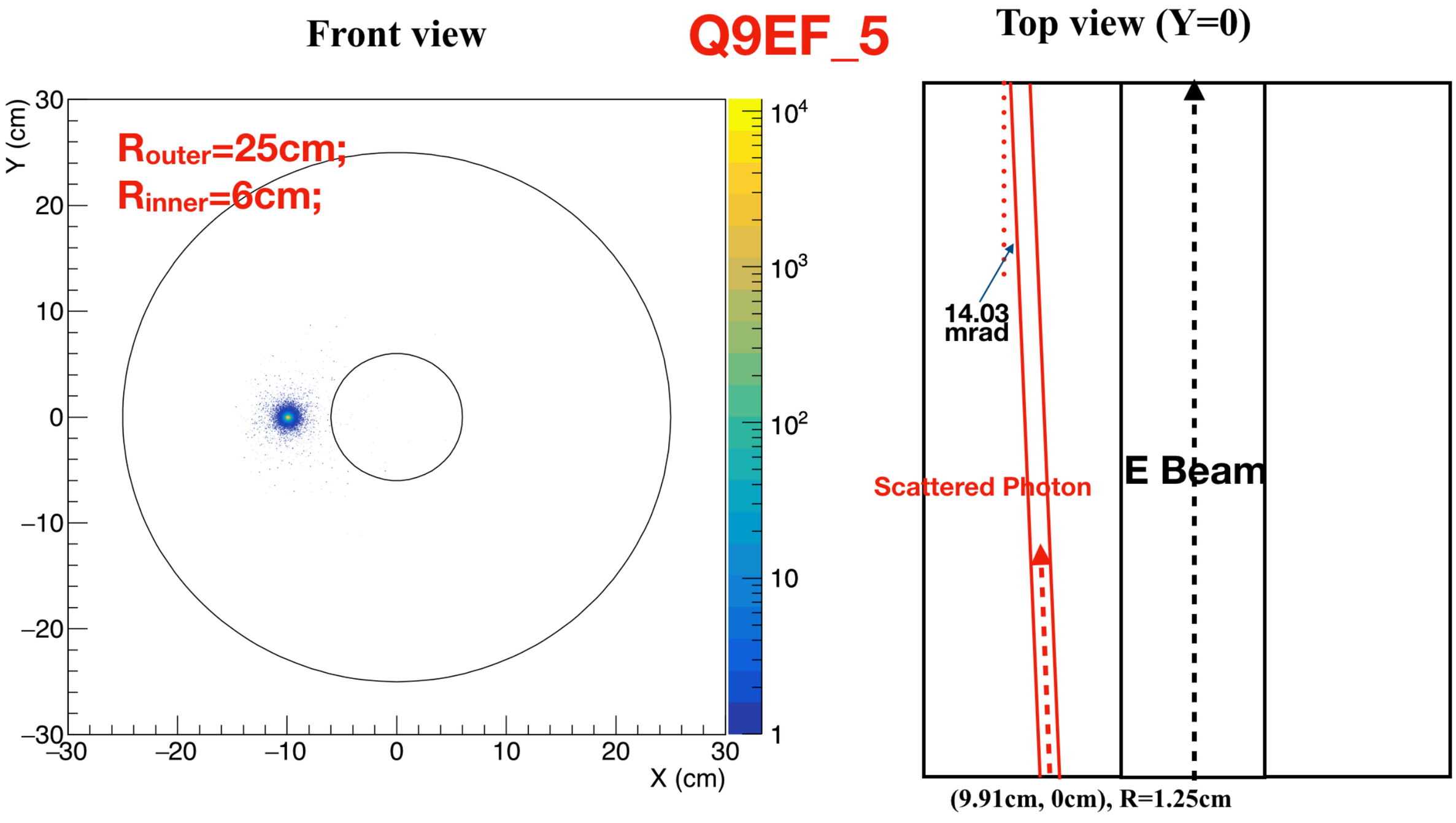
H-Dipole: Red
E-Dipole: Green
Quadrupole: Blue
Sextupole: Grey



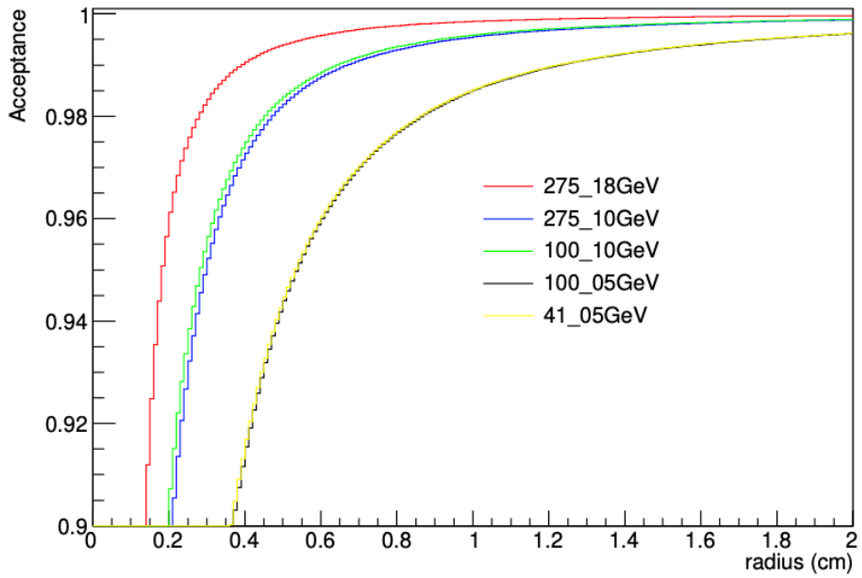
IR6 forward layout



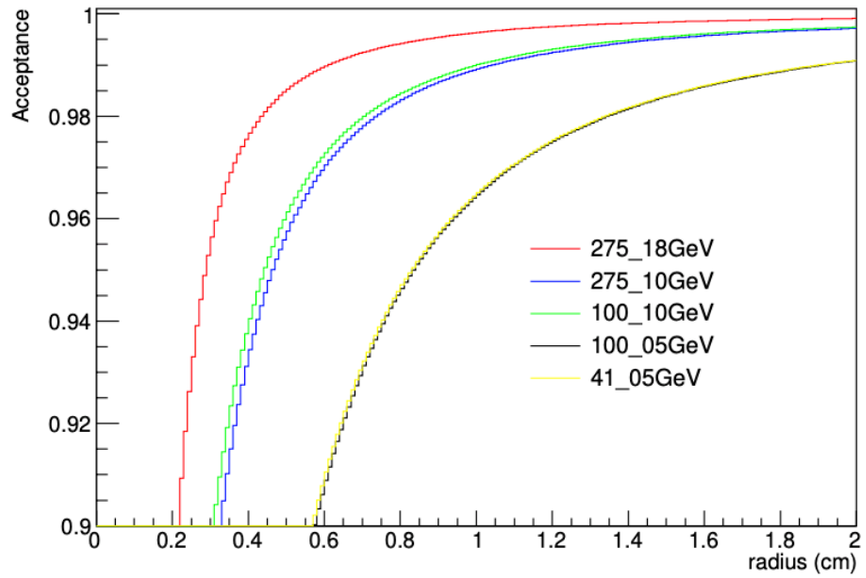
Front view and top view of the magnets



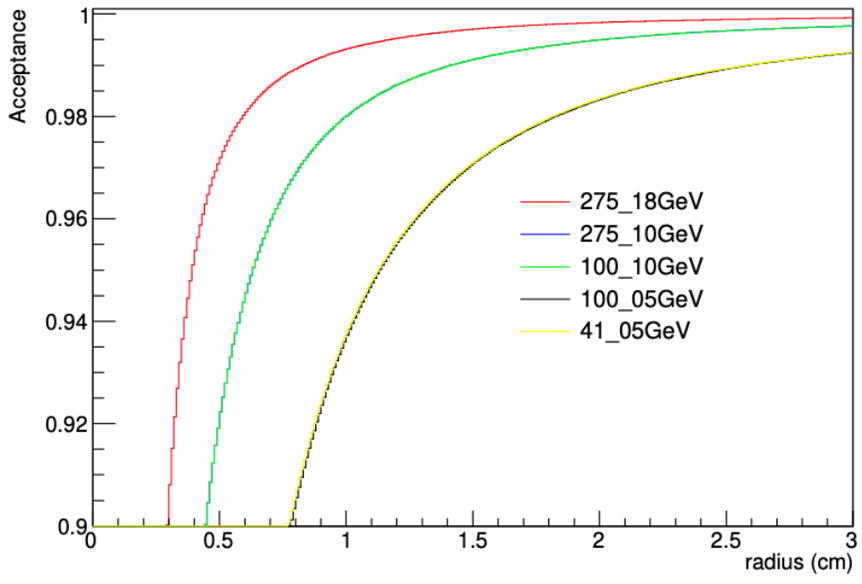
The acceptance vs radius of the cylindrical hole at different configuration



(a) Q9_EF5 magnet.



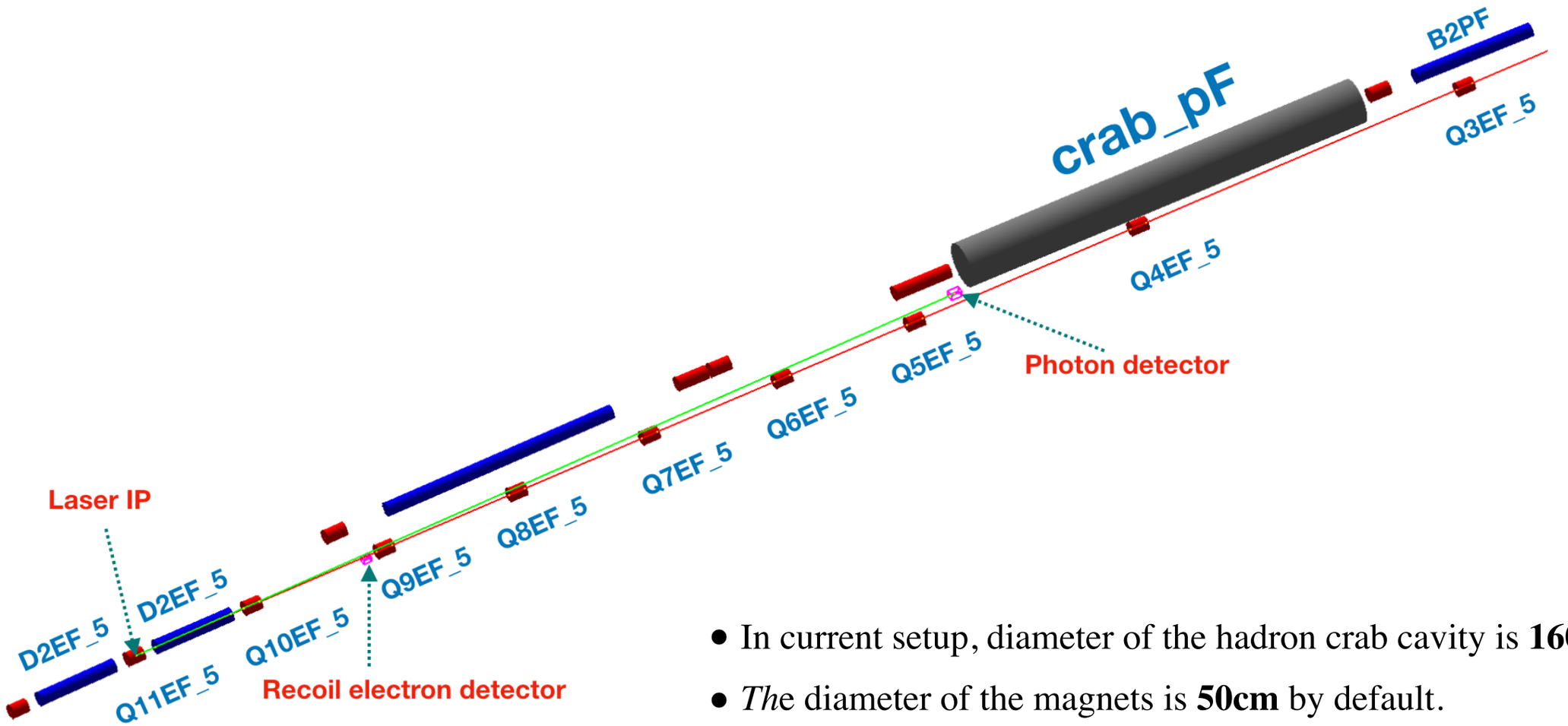
(b) Q8_EF5 magnet



(c) Q7_EF5 magnet

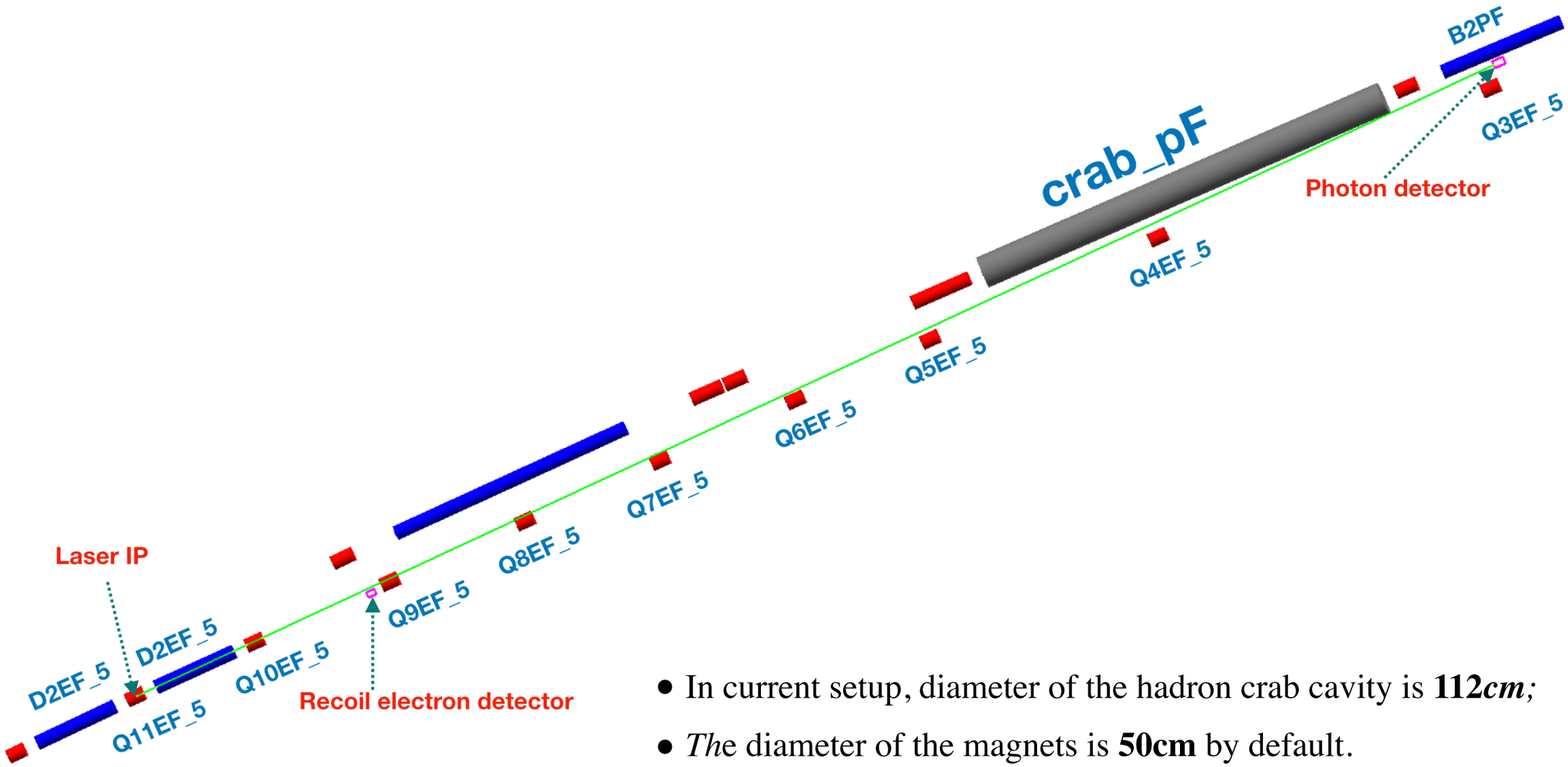
	Hole center at the front of the magnets	Hole radius	Angle of the hole
Q9EF_5	(9.91 cm, 0)	1.25 cm	14.03 mrad
Q8EF_5	(17.06 cm, 0)	2.00 cm	14.03 mrad
Q7EF_5	(24.22 cm, 0)	2.50 cm	14.03 mrad

Position of the photon detector



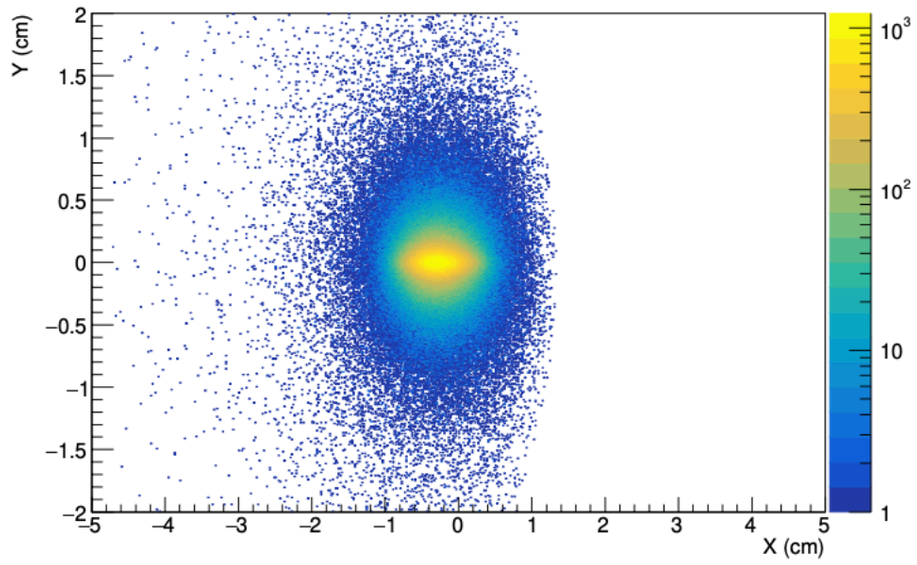
- In current setup, diameter of the hadron crab cavity is **160*cm*;**
- *The* diameter of the magnets is **50cm** by default.
- *We* put the photon detector just in front of the hadron crab cavity;
- The distance between the photon detector and the laser IP is **32*m***.

Position of the photon detector

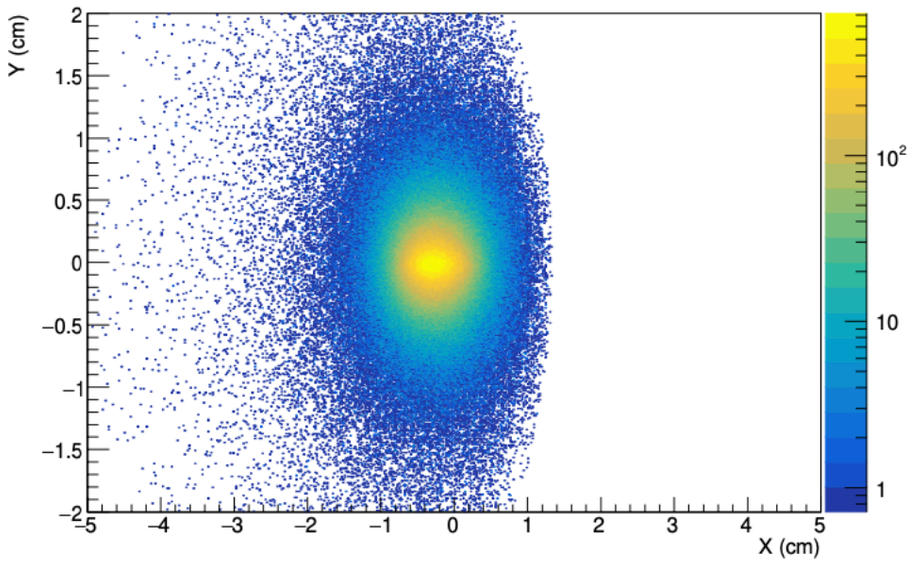


- In current setup, diameter of the hadron crab cavity is **112*cm*;**
- *The* diameter of the magnets is **50cm** by default.
- *We* put the photon detector just in front of the hadron crab cavity;
- The distance between the photon detector and the laser IP is **52*m***.

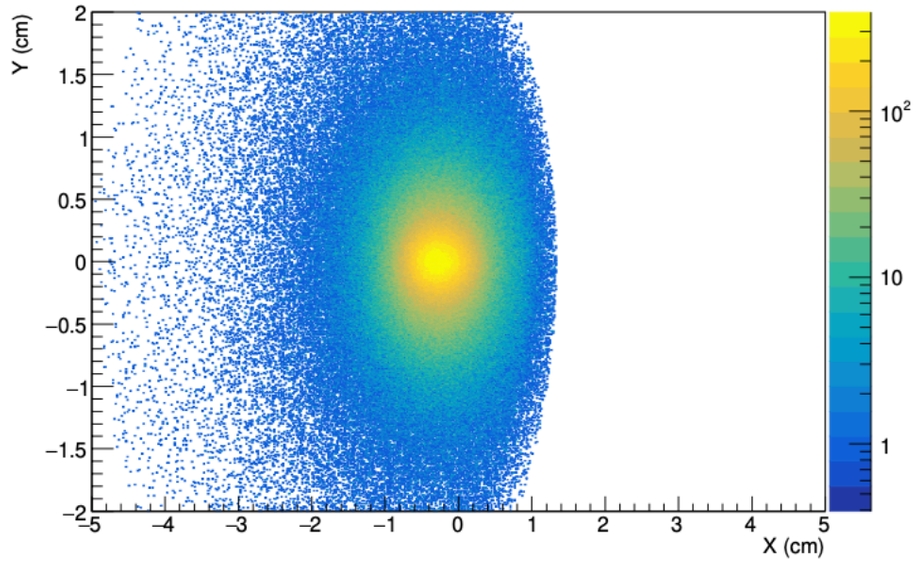
XY distribution in the photon detector



(a) xy distribution for 18GeV.



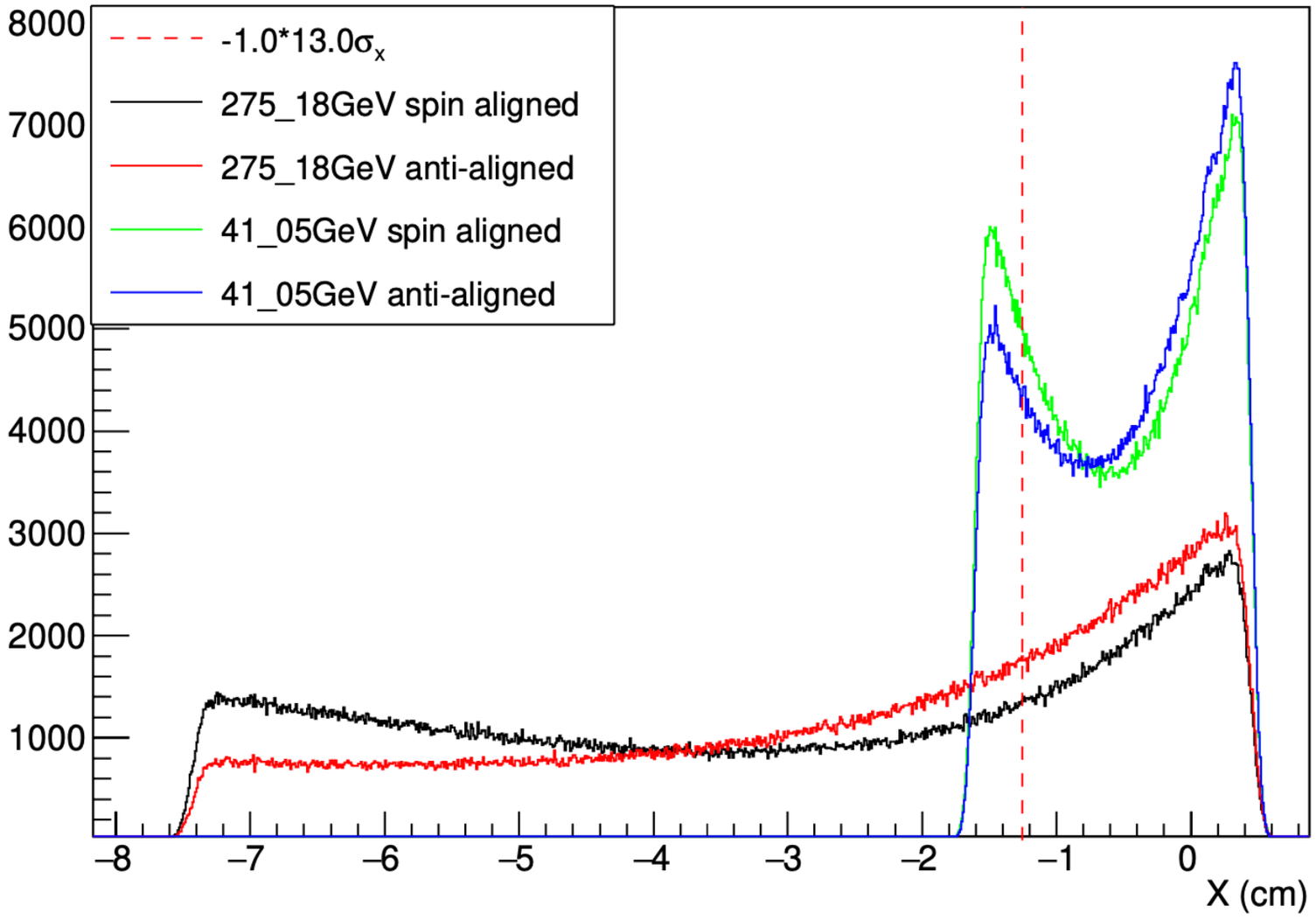
(b) xy distribution for 10GeV



(c) xy distribution for 5GeV

Here the distance between the photon detector and the laser IP is **32*m***.

X distribution of the recoil electron



- The recoil electron detector is placed before the *Q9EF*_5;
- The recoil electrons in the right side of the dashed line would not be detected;
- The acceptance for the 275_18GeV configuration is about 65% (spin aligned) and 59% (anti-aligned);
- The acceptance for lower beam energy configuration is too low

Thanks.