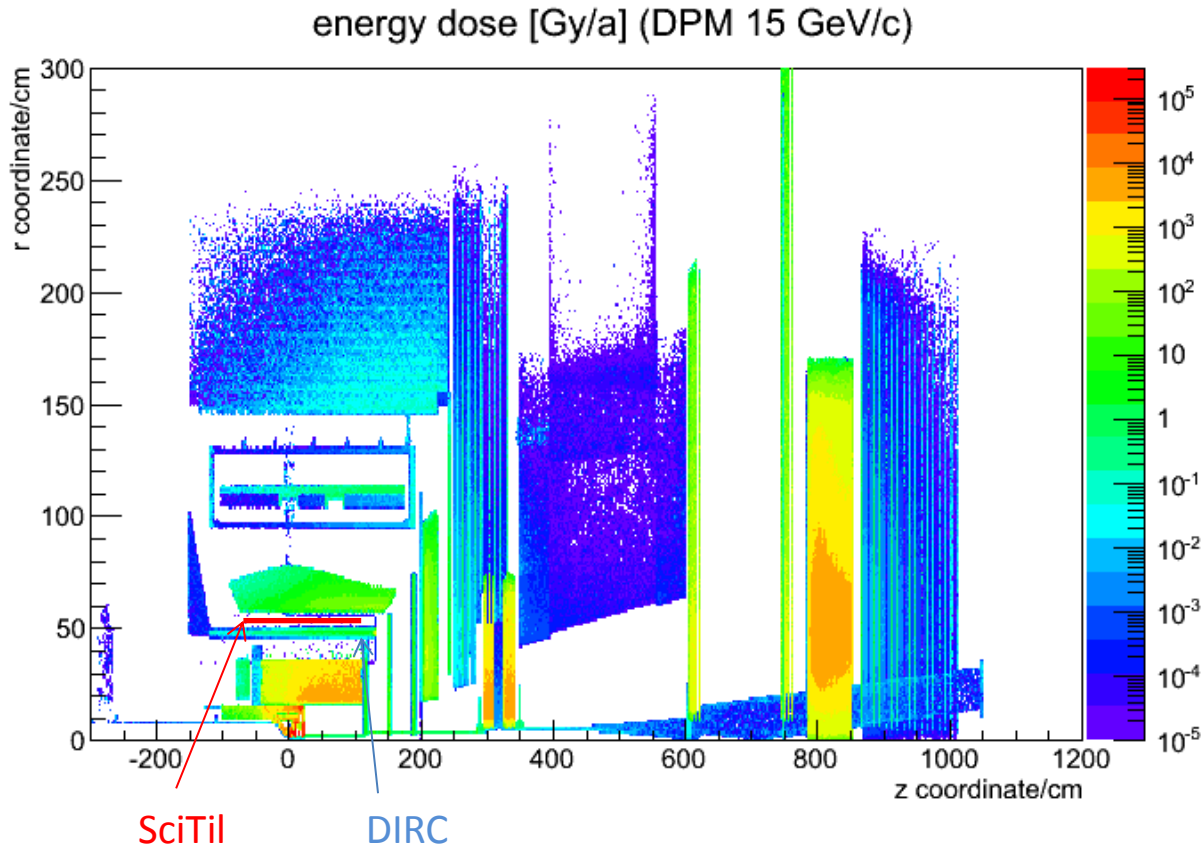


# Estimated Radiation at SciTil

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# Panda Radiation Map



- DIRC:
  - $dE/dm \approx 1$  Gy per year
  - $R \approx 48$  cm
- SciTil (SiPM)
  - $R \approx 50$  cm
  - $\rho = 2,3$  g/cm<sup>2</sup>

# Estimated Radiation (RadMap)

- $\frac{dE}{dm} = 1 \text{ Gy/a} = 6,25 * 10^9 \frac{\text{MeV}}{g} / \text{a}$

- $\Rightarrow \approx 3,12 * 10^9 \frac{\text{mip}}{a * \text{cm}^2}$

- $\approx 100 \frac{\text{mip}}{s * \text{cm}^2}$

(mip)  
minimum ionizing particle:  
 $\frac{1 dE}{\rho dx} = 2 \frac{\text{MeV cm}^2}{g}$

# Estimated Radiation (Event Rate)

- $D = \dot{N}_{avg} * P * \frac{1}{\Omega}$
- average collision rate:
  - $\dot{N}_{avg} = 20 \text{ MHz}$
- Particle production per event
  - $\dot{P} \approx 10$
- Solid angle
  - $r \approx 50 \text{ cm}$
  - $\Omega = 1000\pi$

SciTil (SiPM)  
R  $\approx$  50 cm

- $D \approx 6400 \frac{\text{Hz}}{\text{cm}^2}$
- $\Rightarrow \approx 60 \frac{\text{Gy}}{a}$