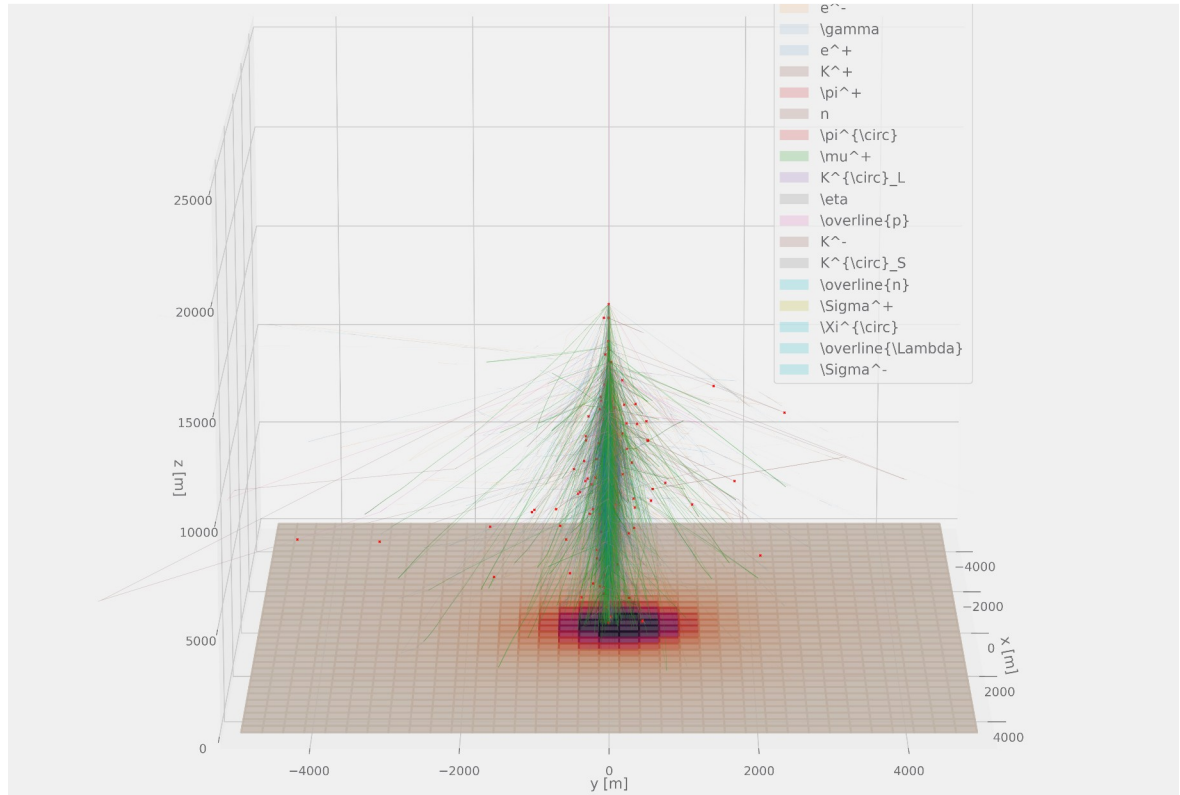
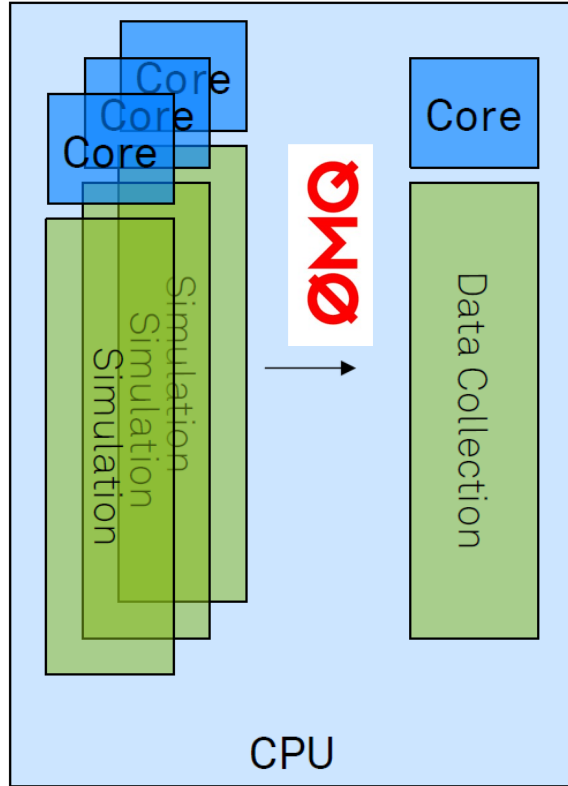


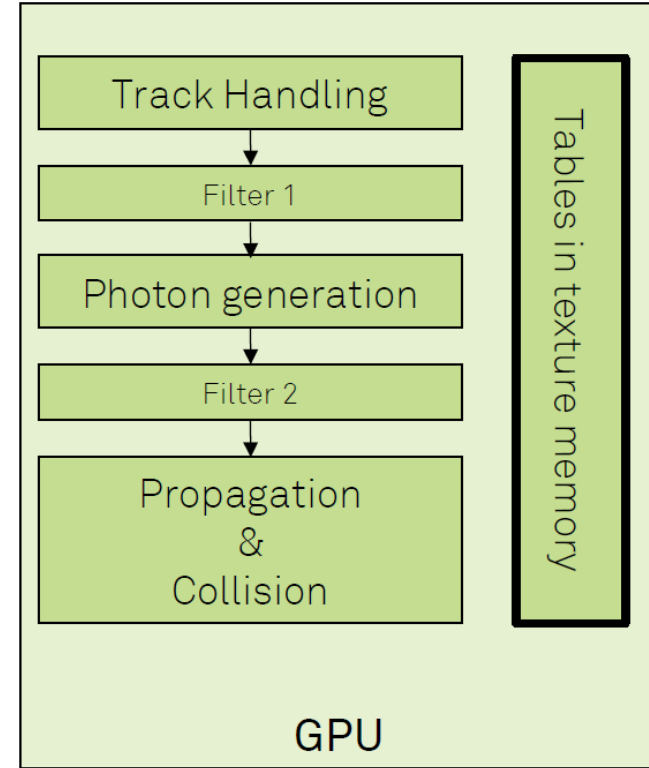
# GPU Cherenkov



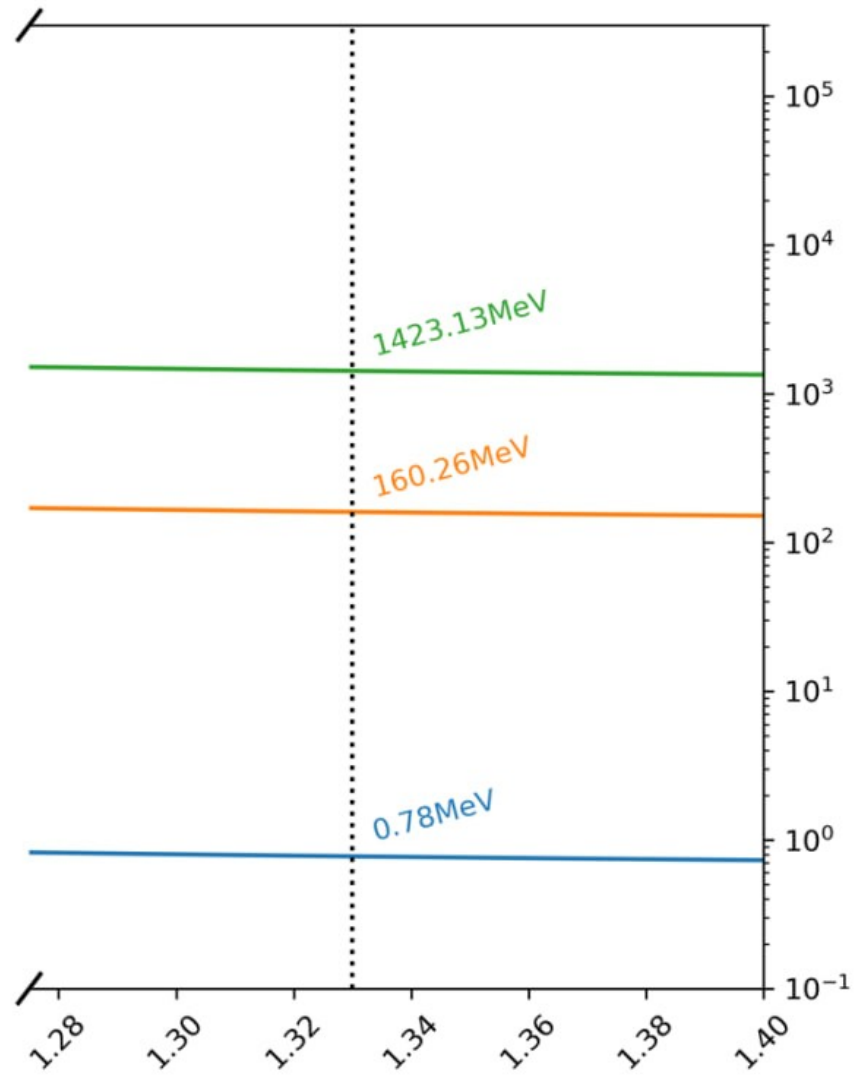
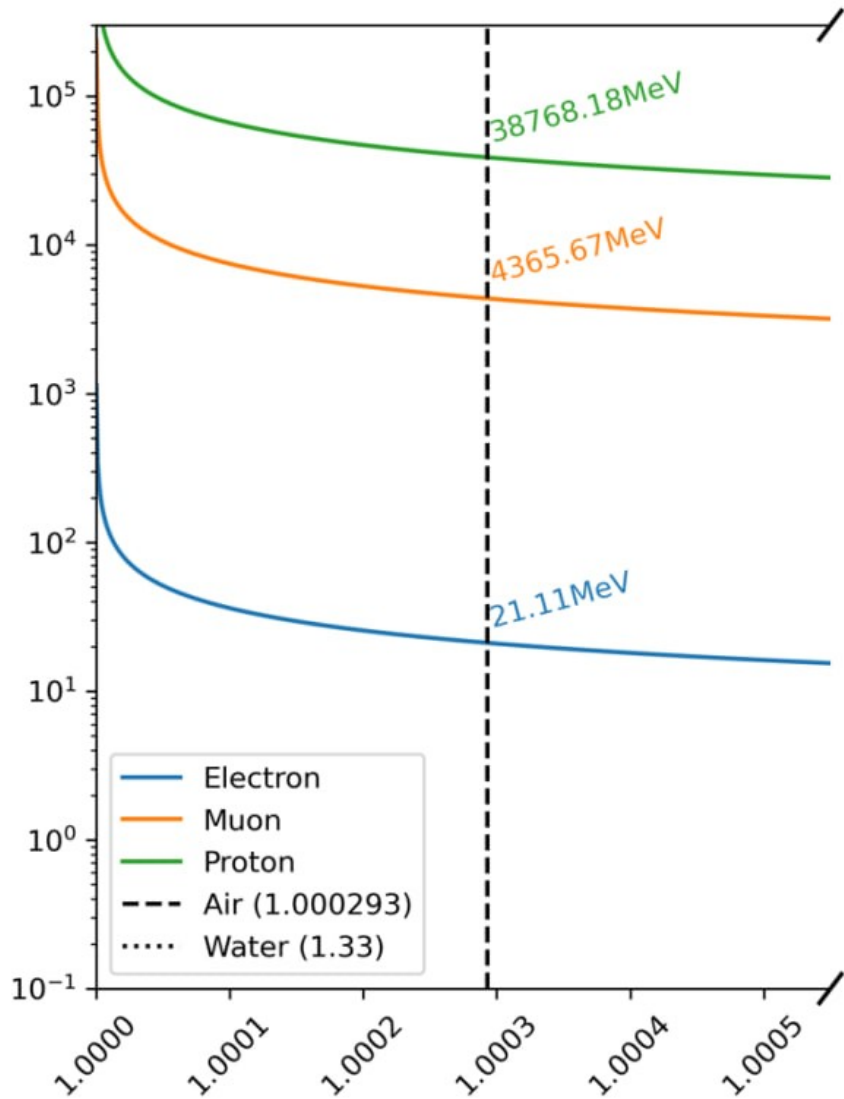


Particle tracks →

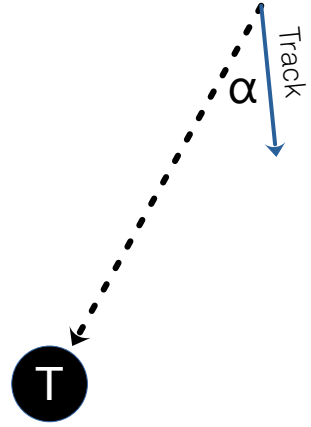
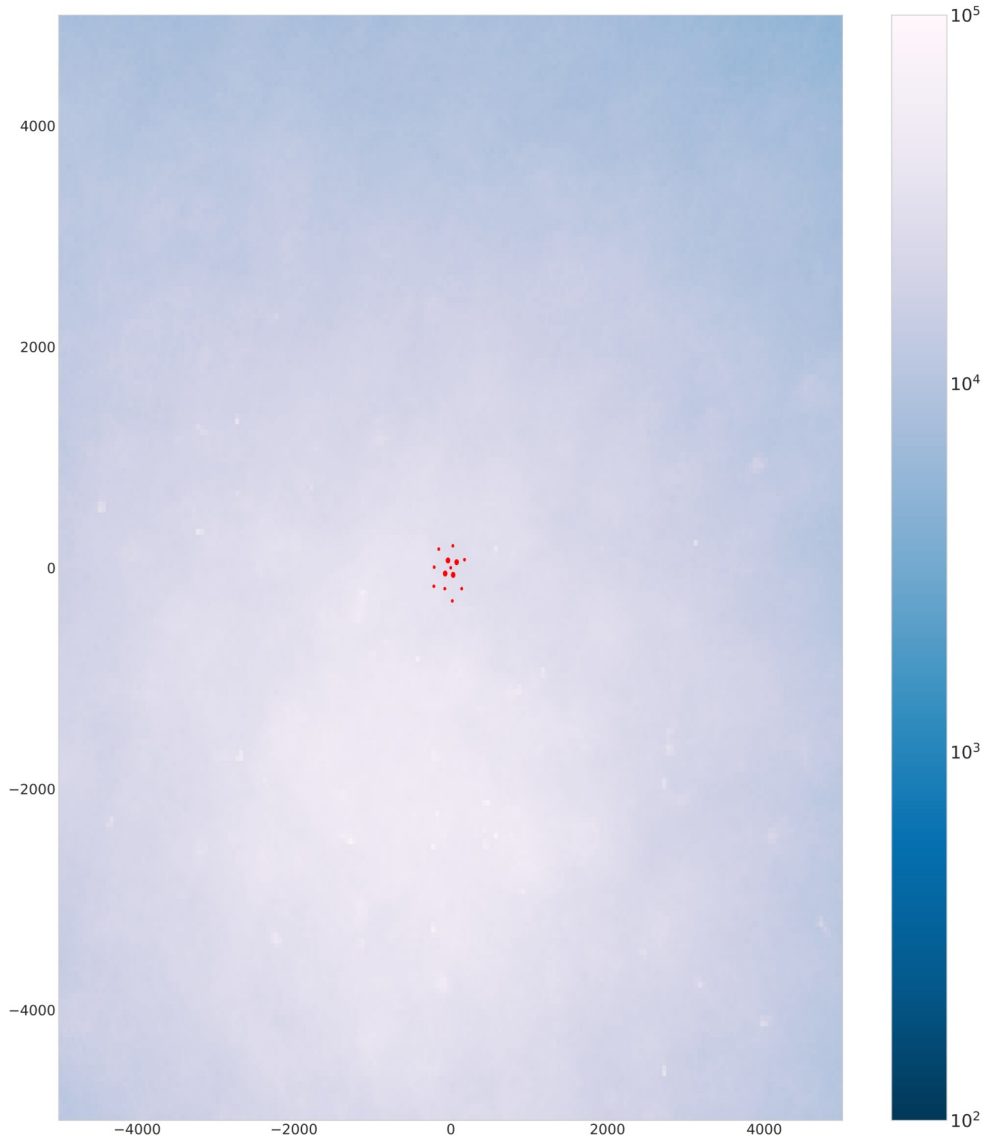
← Photon impact points and angles



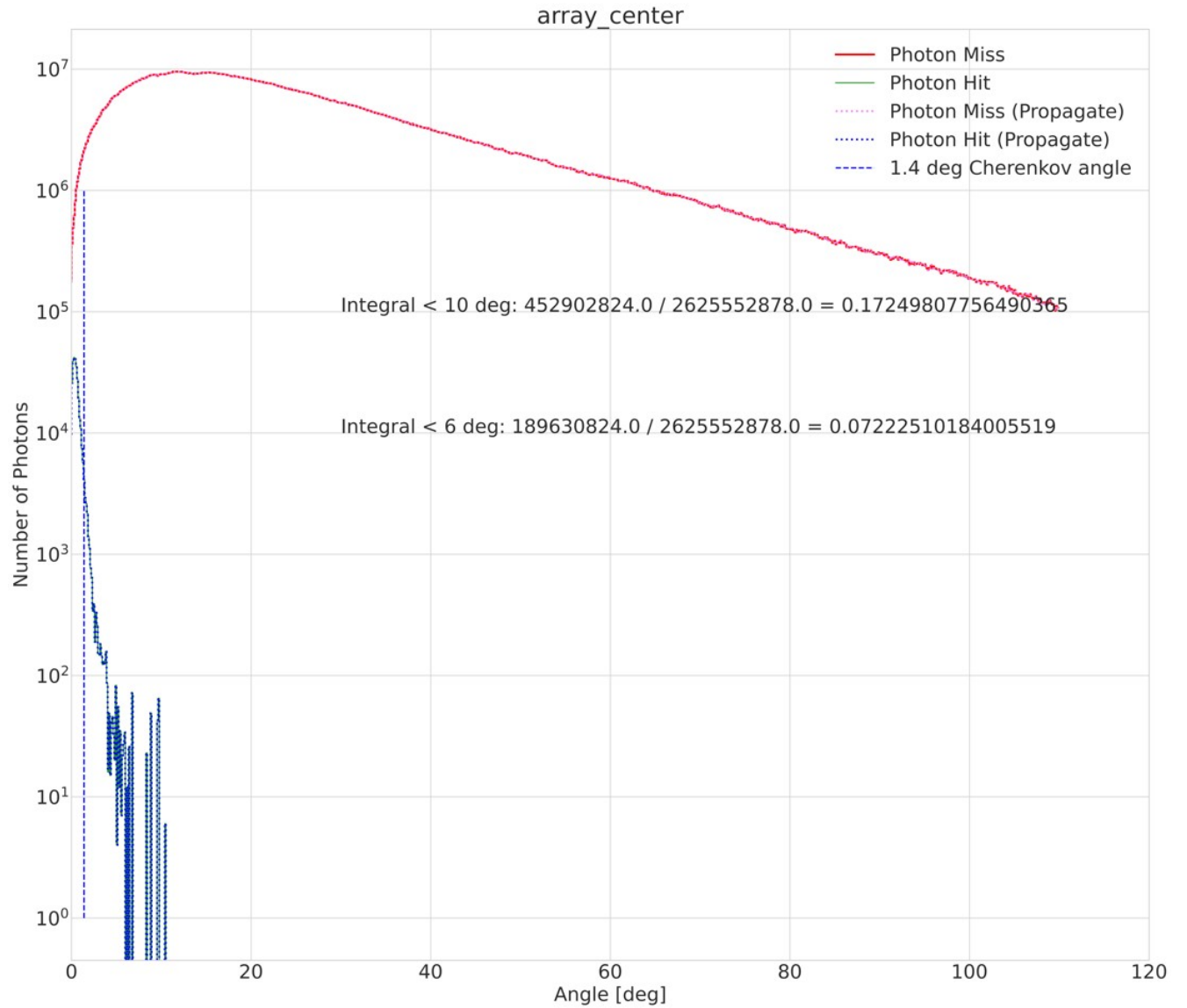
# Energy Limits



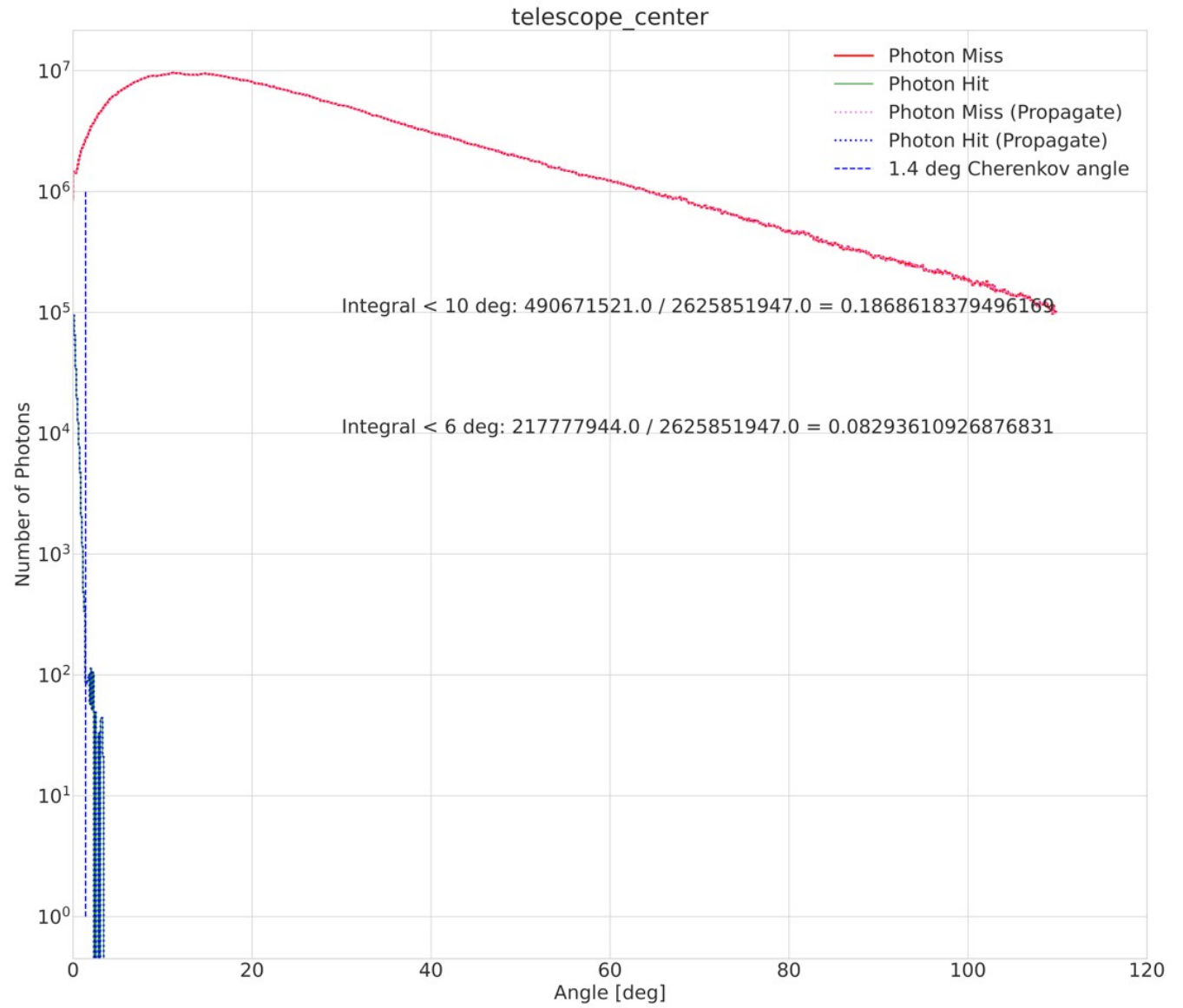
# Lv1 Filter Stage



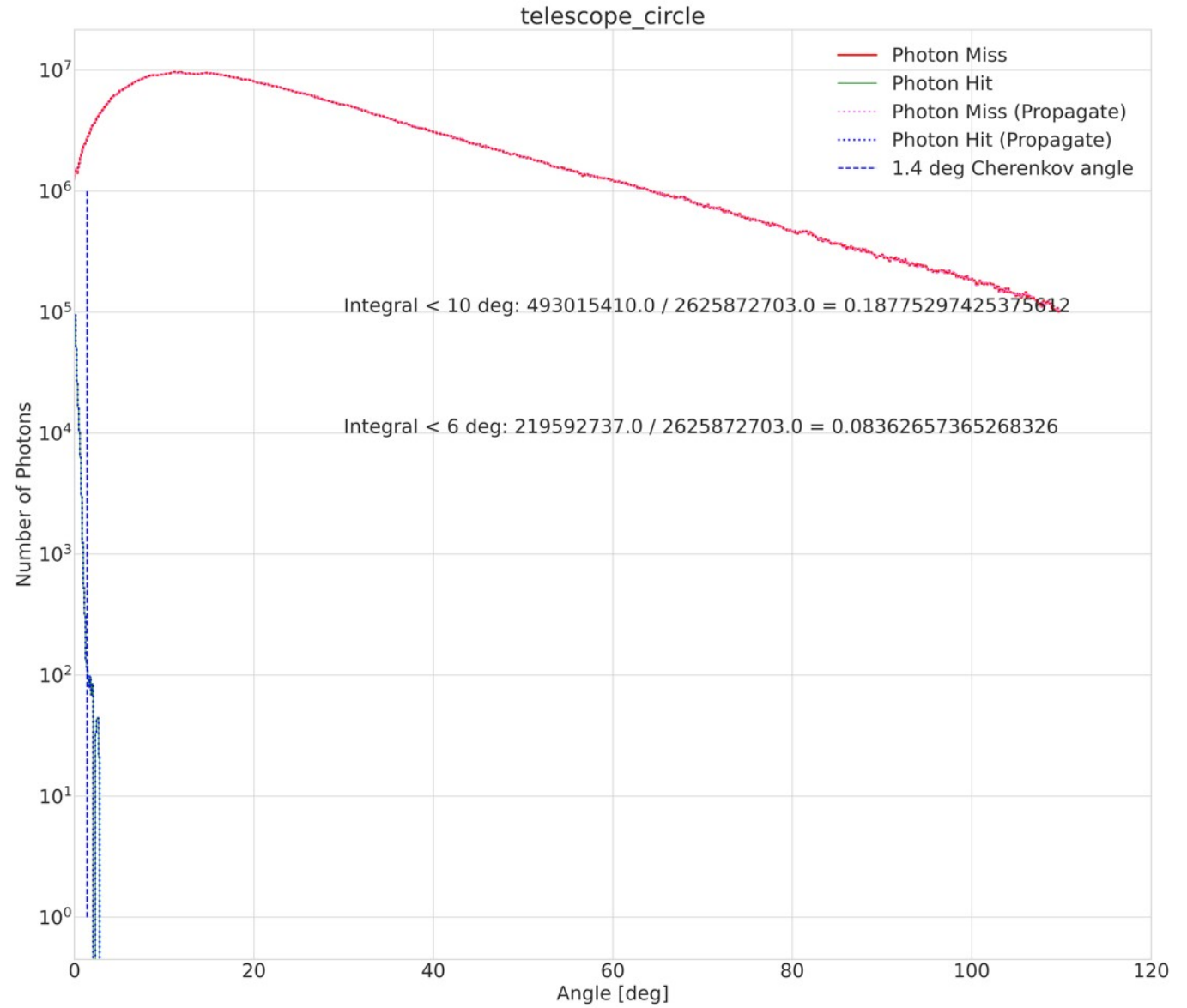
# Lv1 Filter Stage



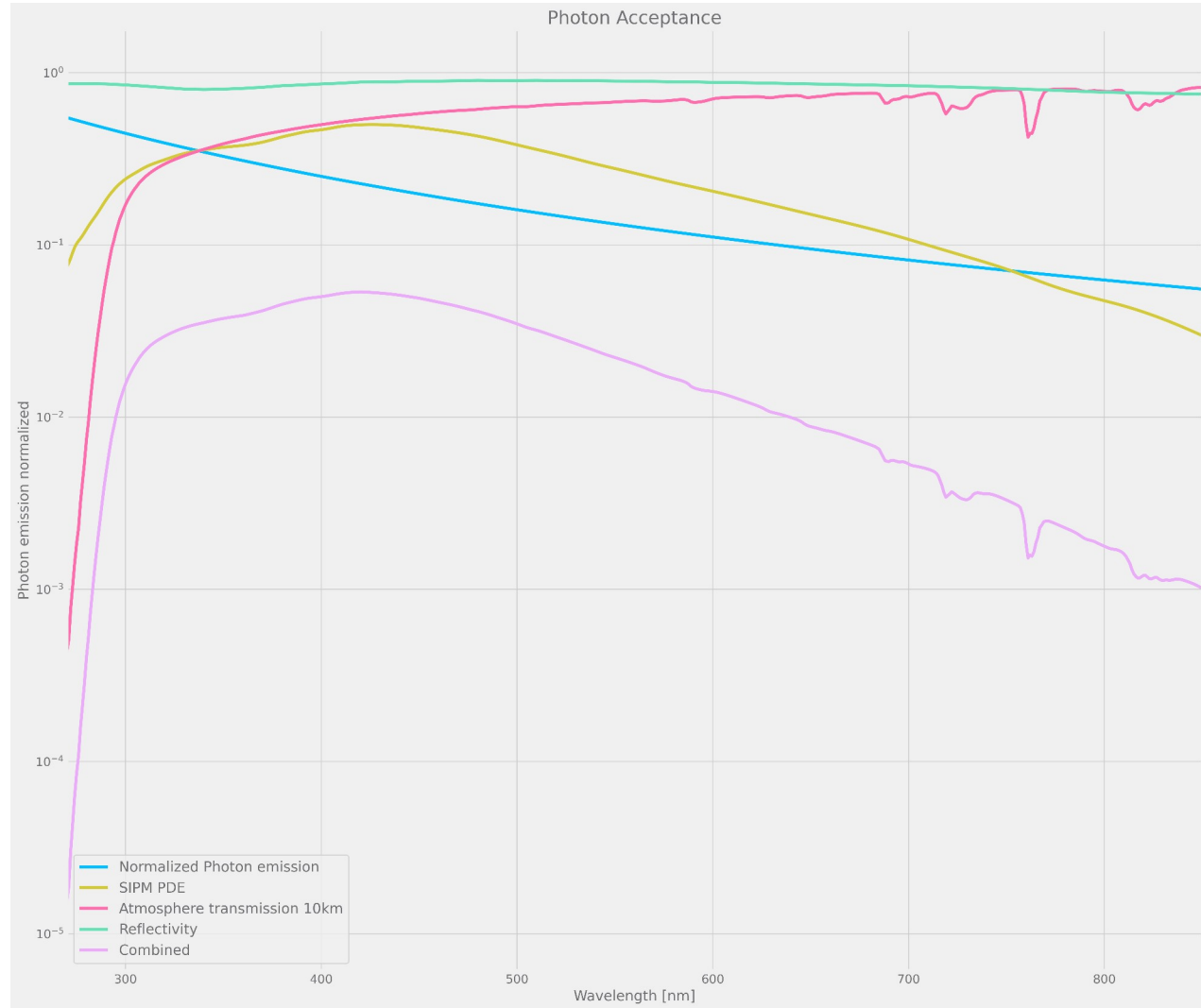
# Lv1 Filter Stage



# Lv1 Filter Stage



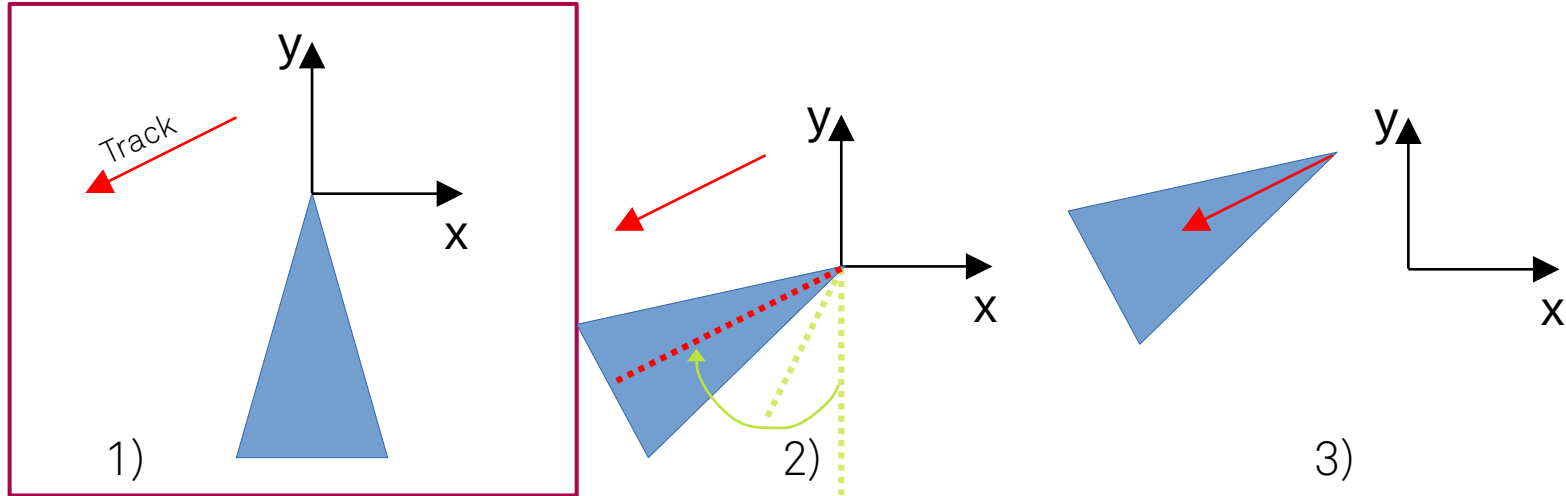
# Relative Photon acceptance





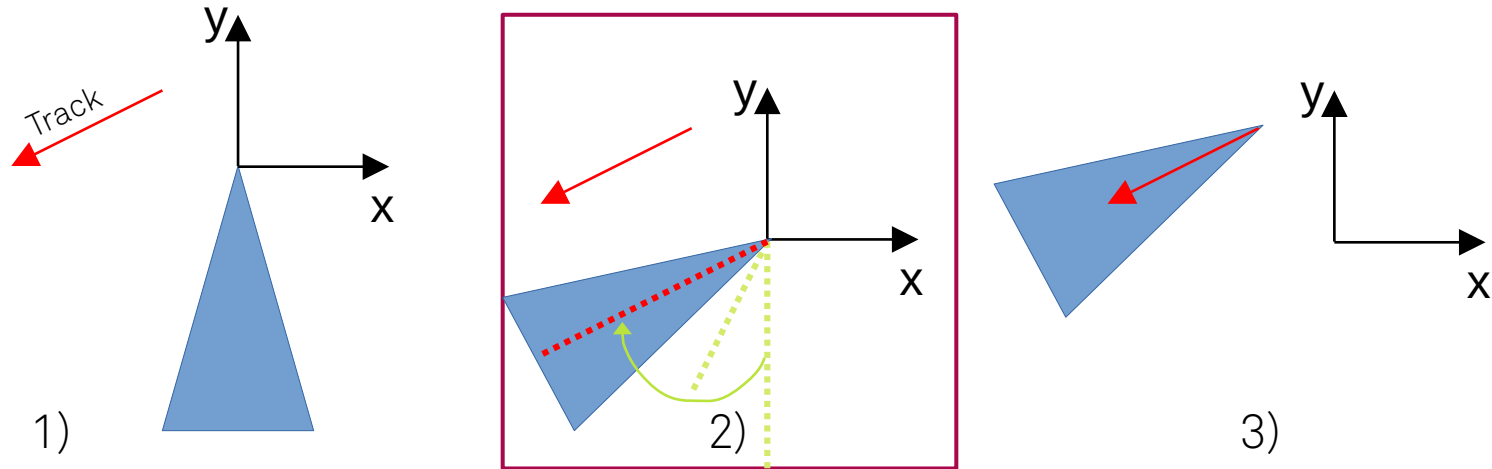
## Frank-Tamm

$$\frac{\partial^2 N}{\partial x \partial \lambda} = 2\mu_r \pi z^2 \alpha \frac{1}{\lambda^2} \sin^2(\theta)$$

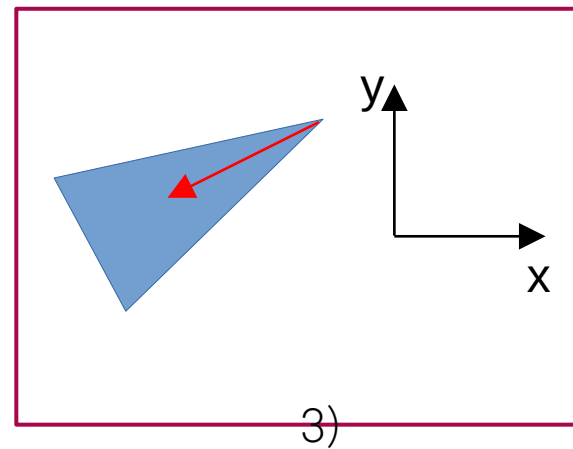
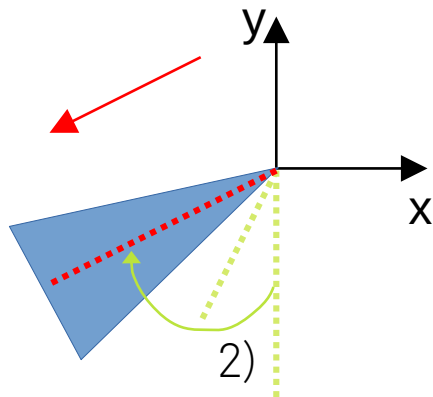
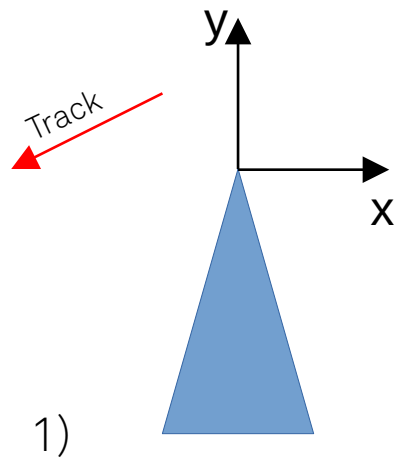


## Rodrigues' Rotation Formula

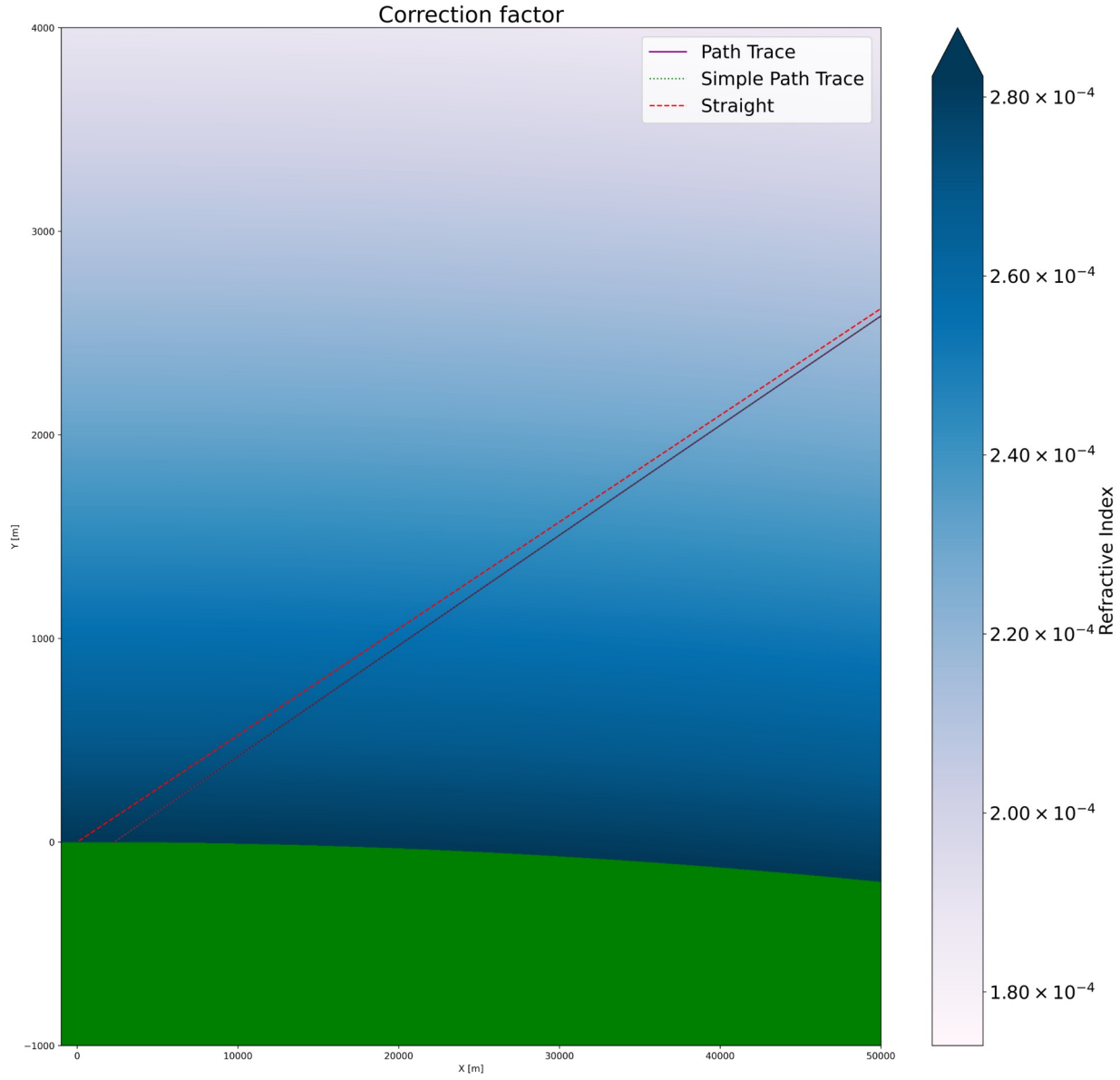
$$\begin{aligned}
 \mathbf{R}_{\tilde{\omega}}(\theta) &= e^{\tilde{\omega}\theta} \\
 &= \mathbf{1} + \tilde{\omega} \sin \theta + \tilde{\omega}^2 (1 - \cos \theta) \\
 &= \begin{bmatrix} \cos \theta + \omega_x^2 (1 - \cos \theta) & \omega_x \omega_y (1 - \cos \theta) - \omega_z \sin \theta & \omega_y \sin \theta + \omega_x \omega_z (1 - \cos \theta) \\ \omega_z \sin \theta + \omega_x \omega_y (1 - \cos \theta) & \cos \theta + \omega_y^2 (1 - \cos \theta) & -\omega_x \sin \theta + \omega_y \omega_z (1 - \cos \theta) \\ -\omega_y \sin \theta + \omega_x \omega_z (1 - \cos \theta) & \omega_x \sin \theta + \omega_y \omega_z (1 - \cos \theta) & \cos \theta + \omega_z^2 (1 - \cos \theta) \end{bmatrix},
 \end{aligned}$$



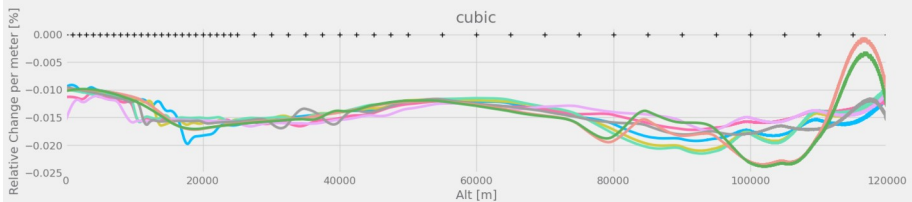
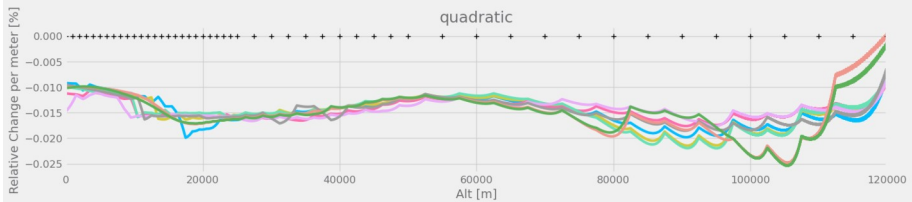
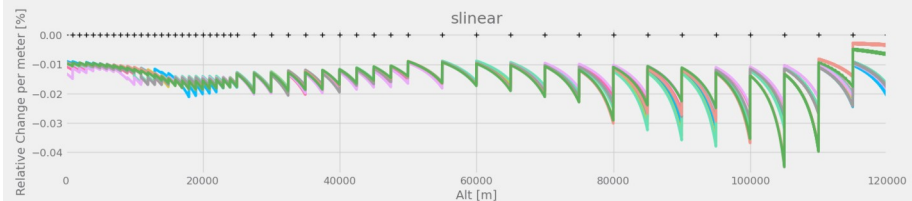
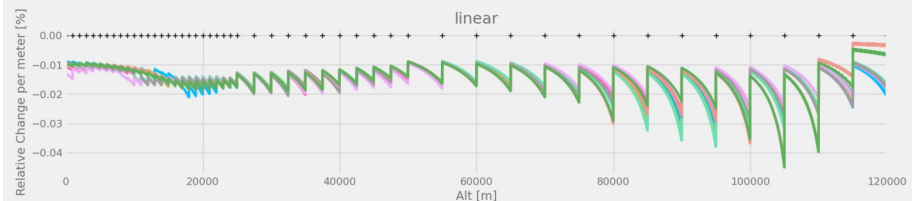
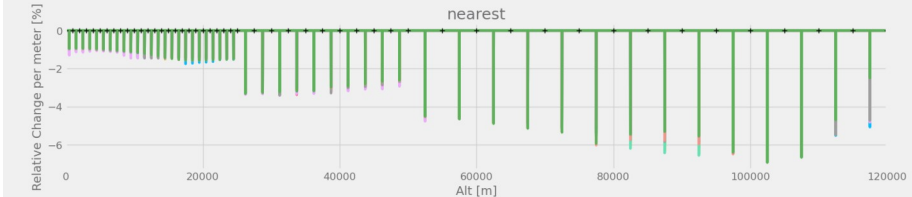
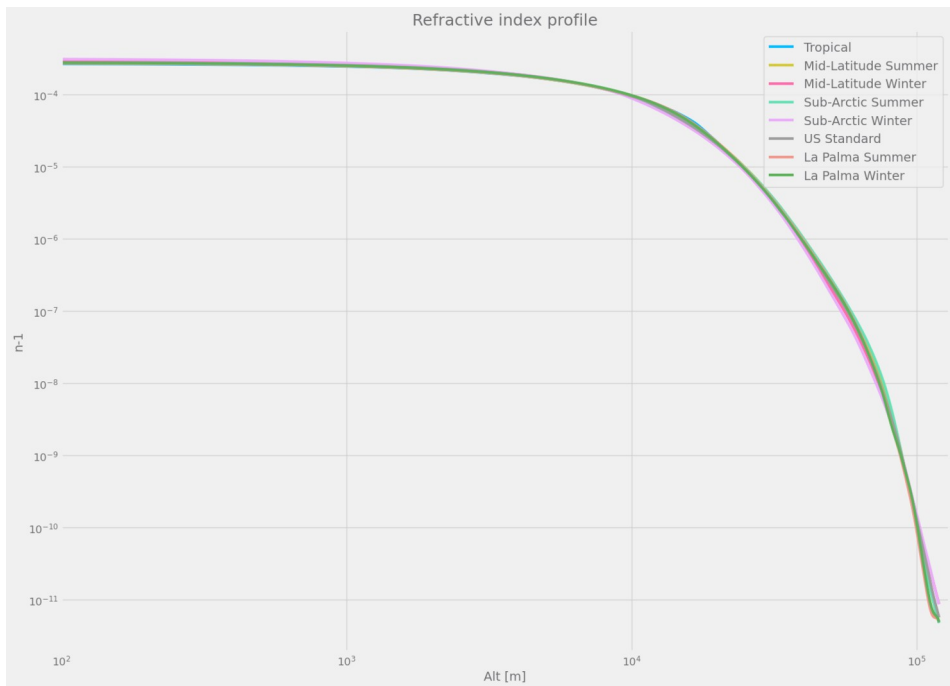
# Translation



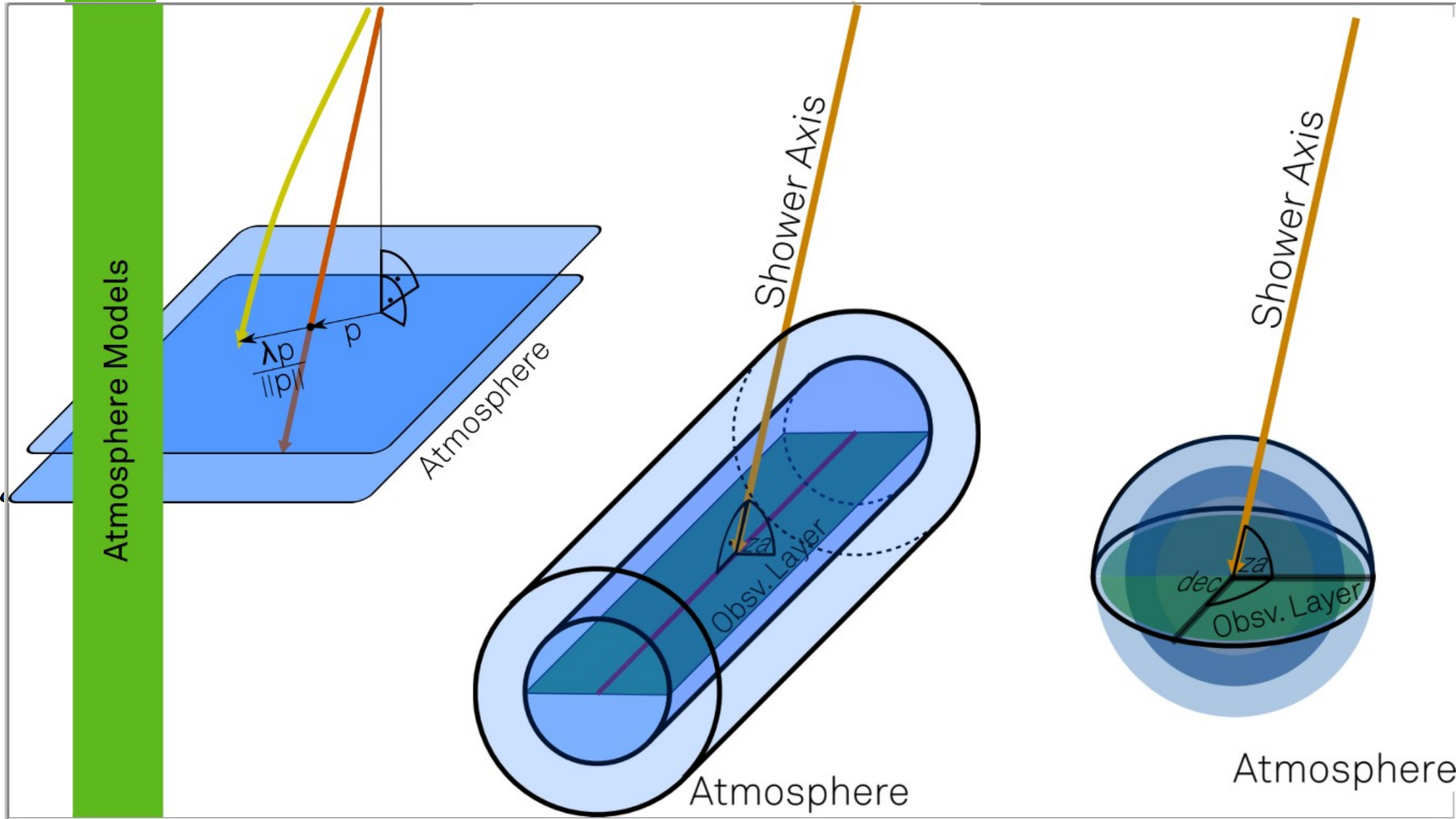
# Atmosphere Models



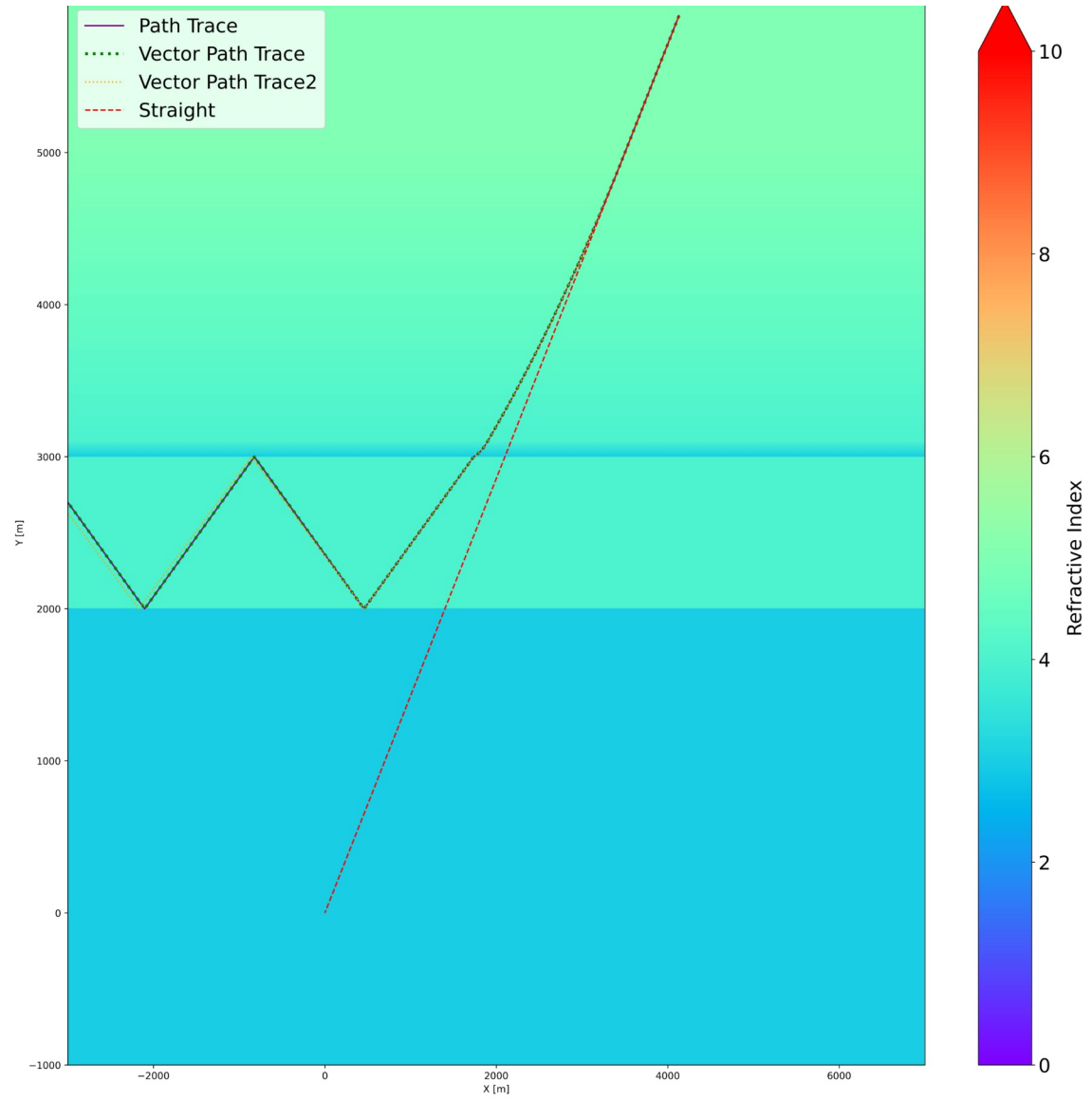
# Atmosphere



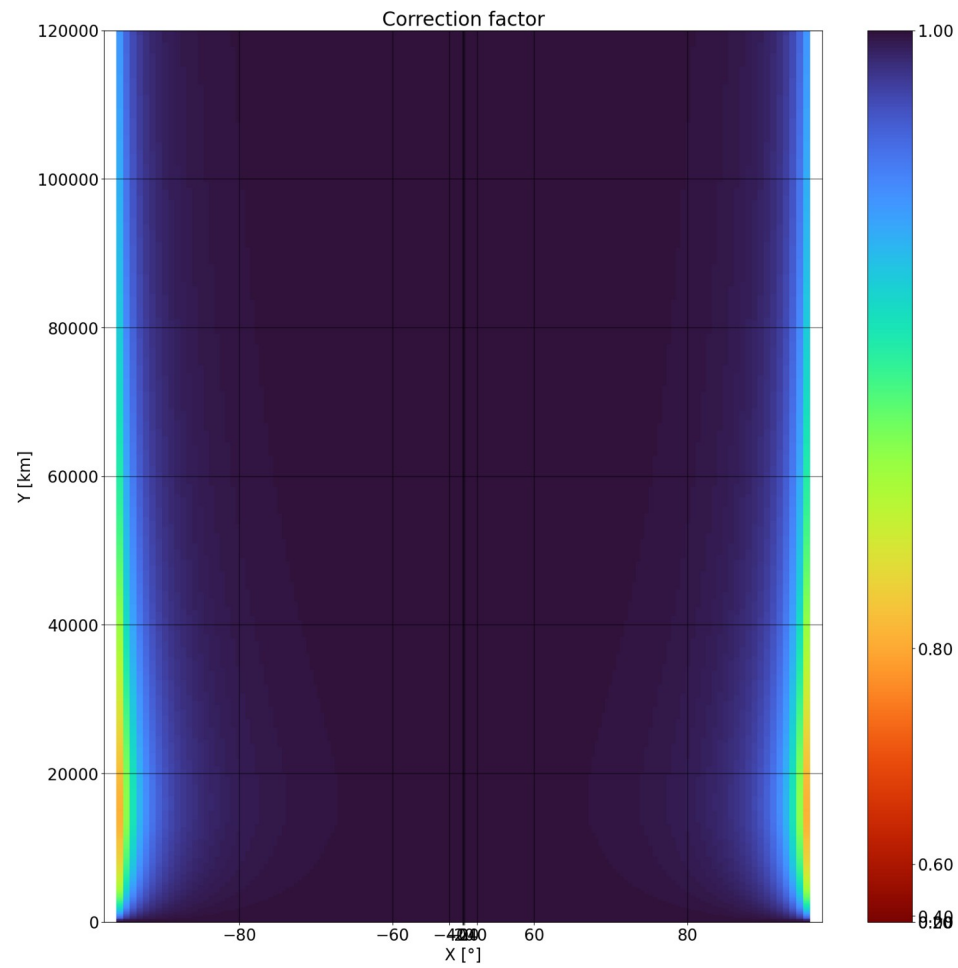
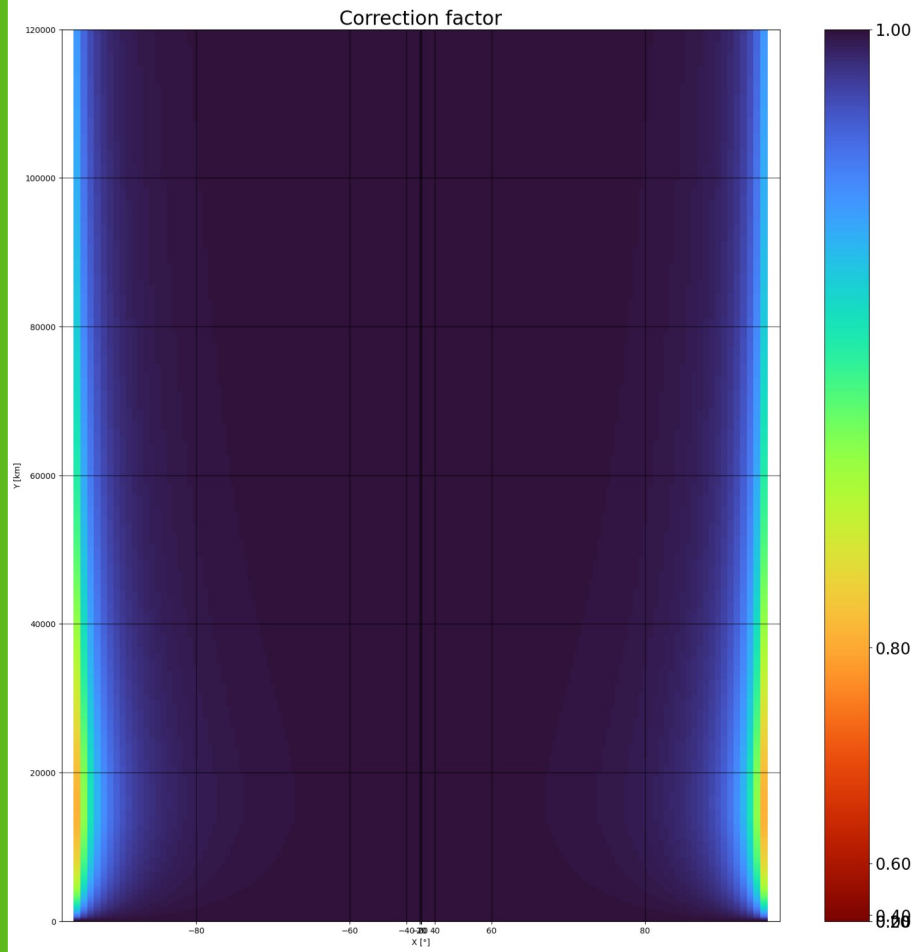
# Atmosphere Models



# Or Step by Step

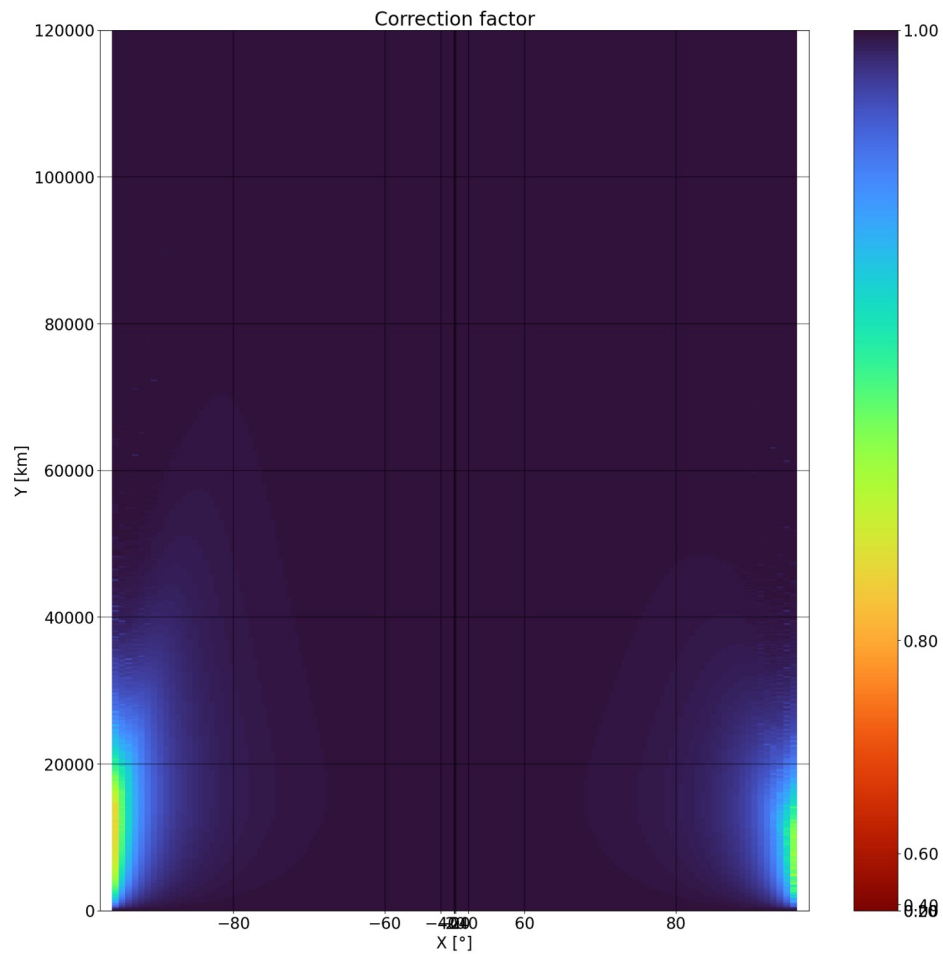
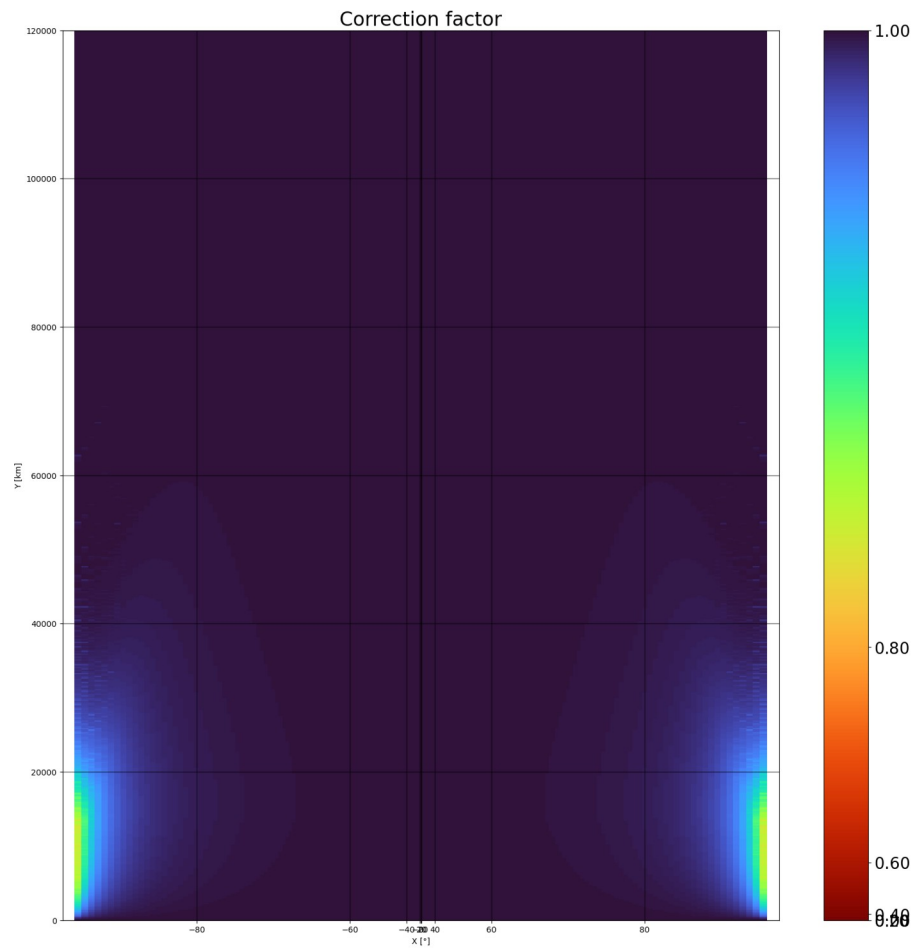


# Correction Factor Planer

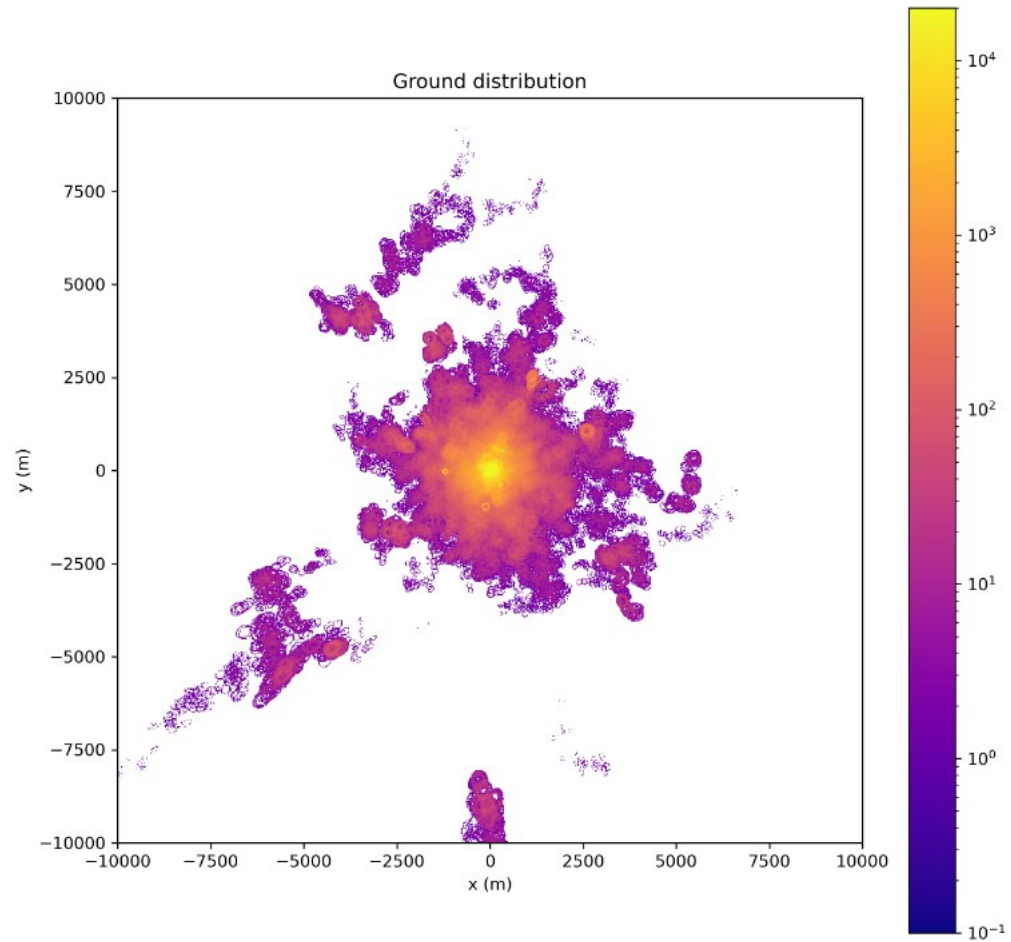
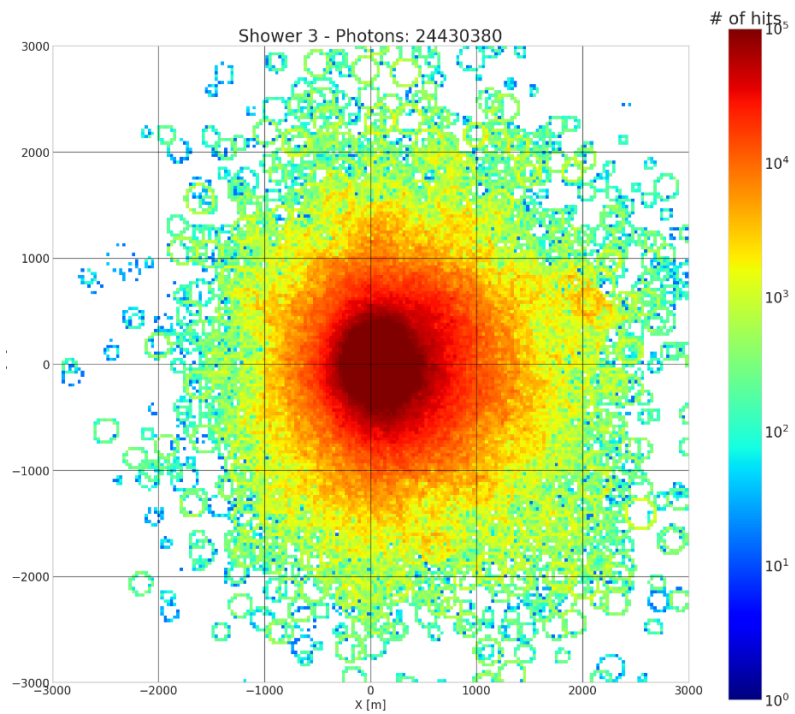




# Correction Factor Circular



# First light

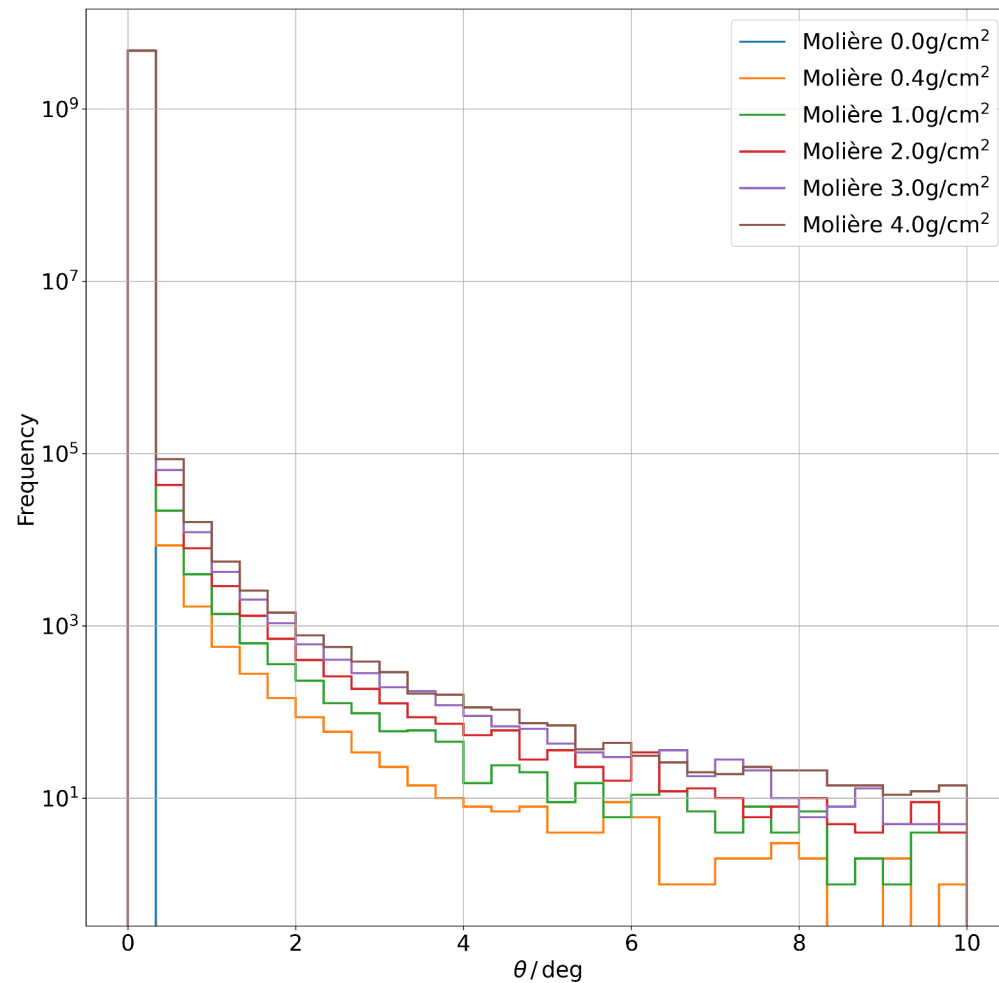


Problem: Substeps → Tomorrow

$$\vec{F} = q\vec{E} + q\vec{v} \times \vec{B}$$

*Electric force*      *Magnetic force*

Molière



- Comparison of radial profile with Corsika7 IACT through ZMQ Playback

Top-Level runtime comparison → Quiet difficult where to start?