



中国科学院高能物理研究所
Institute of High Energy Physics Chinese Academy of Sciences

Simulation with Glass Scintillator in CEPC_v4

Peng Hu

2022/08/24

Simulation Setup

□ Glass Scintillator Setup

- Current Candidate: Ga₂O₃-B₂O₃-Gd₂O₃-GdF₃-CeF₃
- Density: 5.91 g/cm³
- Light yield: 550 ph/MeV
- Decay time: 148 ns(24%) & 1954 ns

□ CEPC_v4 Setup

- Scintillator cell size: 3x3x1 cm³
- Absorber thickness: 1.5 cm
- HCAL total layers: 40
- HCAL total thickness: 1 cm

➤ Fix the composition of glass scintillator and investigate the impact of density on the BMR

Glass_Temp1_6.0gccm		6	0	0	solid
Glass_Temp1_5.5gccm		5.5	0	0	solid
Glass_Temp1_5.0gccm		5	0	0	solid
Glass_Temp1_4.5gccm		4.5	0	0	solid
Glass_Temp1_4.0gccm		4	0	0	solid