

Status Report

GRAiNITA

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Status of PSD study

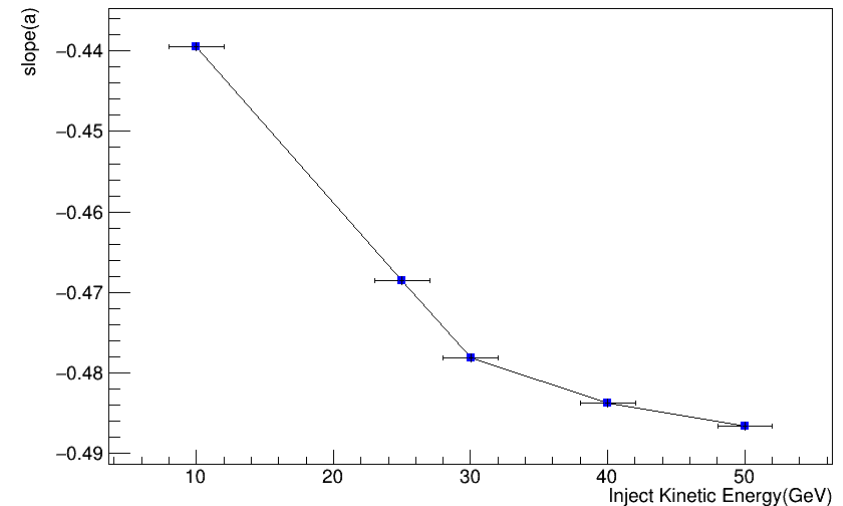
- Formalism

- $E_{dep} = E_{offset} + aE_{had} = E_{em} + E_{had}$
- $E_{had}^0 = \min(E_{had})$
- Rotating the raw $(E_{had}: E_{dep})$ based on (E_{had}^0, a)

- Simulation [w/o scintillation decay time constants in G4]

- Geometry: simple crystal, ZnWO4/BGO
- Energy vs crystal size vs particles
- Toys: decay time + 10000PE/GeV

- Remaining problem:
 - The energy dependency of a
 - Possible solution:
 - Generate a (E, a) map
 - Decide the actual a in a iteration way



Status of PSD study (plans)

- Simulation [w/ scintillation decay time constants in G4]
 - Crystal+fiber (initially implemented by Herve) or Crystal+siliconPM
 - Add decay time constants for materials(ZnWO₄/BGO) & particles in G4 (from Refs)
 - Use measured decay constants (from beam test)
 - Beam test
 - Compare the result with simulations
 - Check the σ_E
- Timeline => Target: ~end of this year
- Simulation: summarize and conclude before Autumn