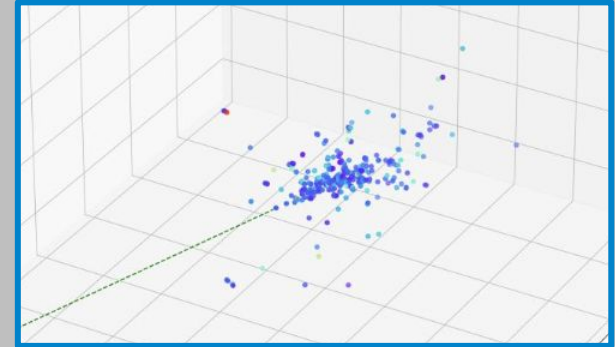


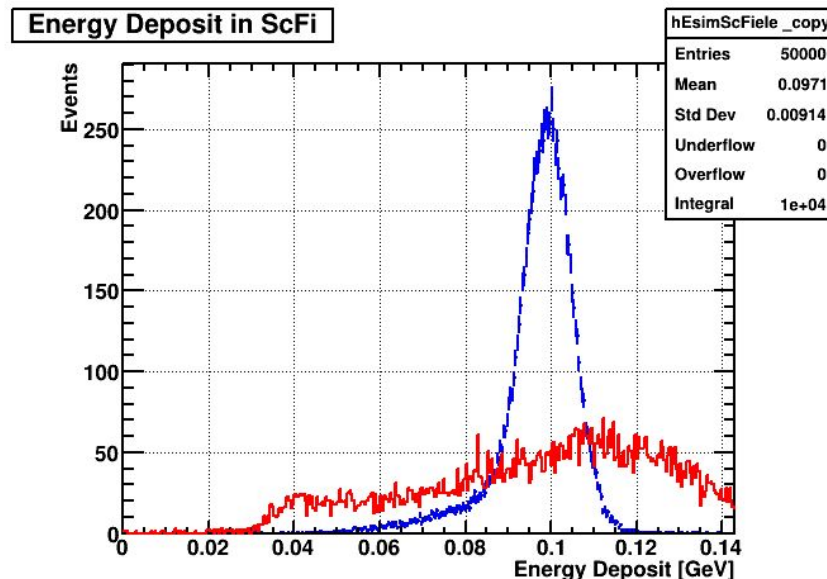
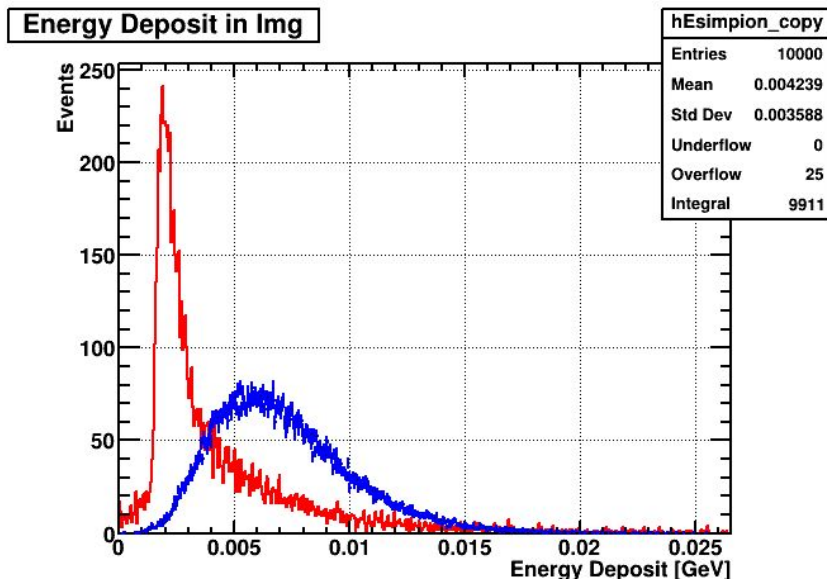
Calorimetry Studies Pion Responses in Barrel Ecal



C. Peng, M. Žurek

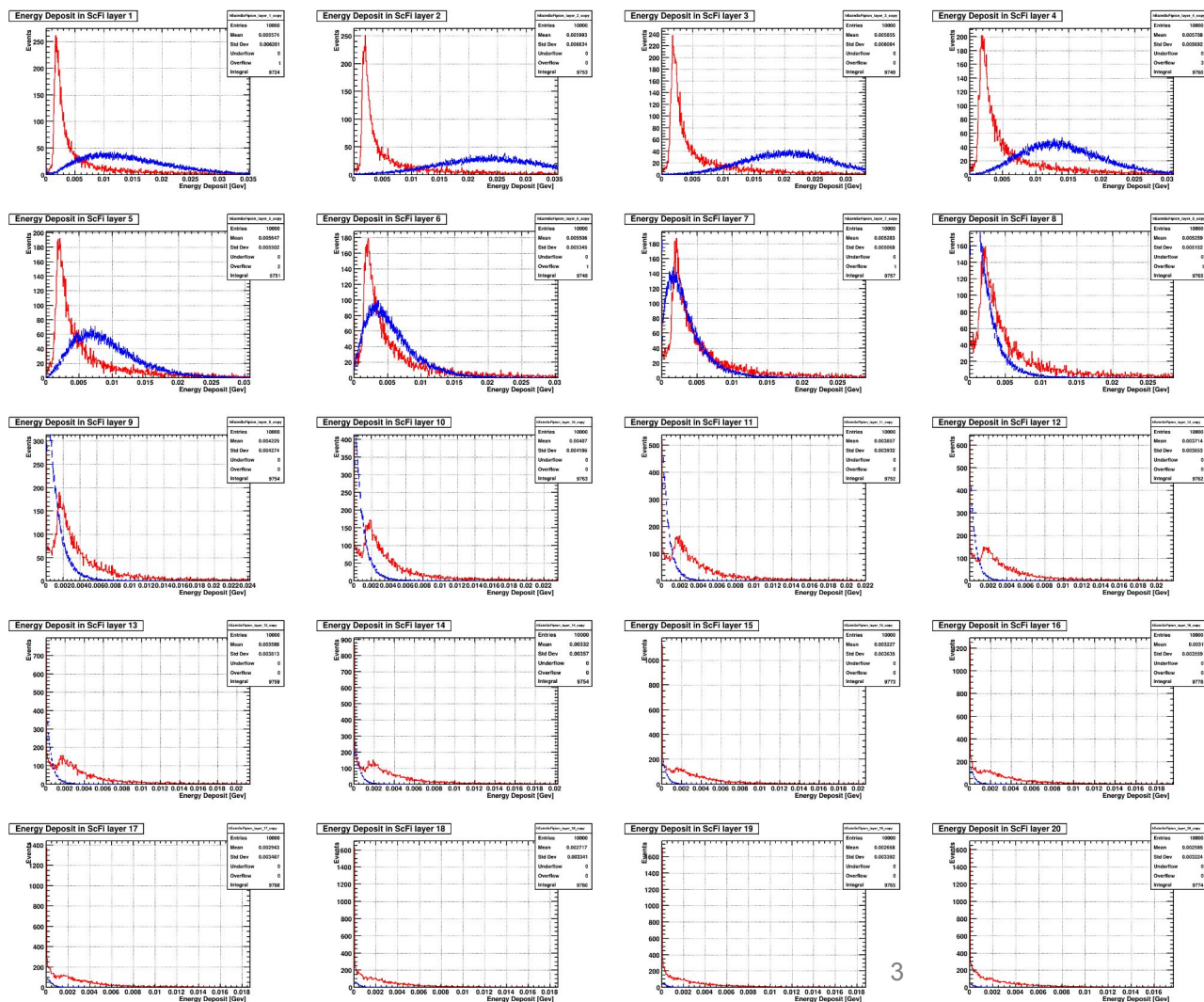
All particles generated in the range of eta (-0.5, 0.5)

electron and pion calo responses (1 GeV)



electron and pion ScFi calo responses

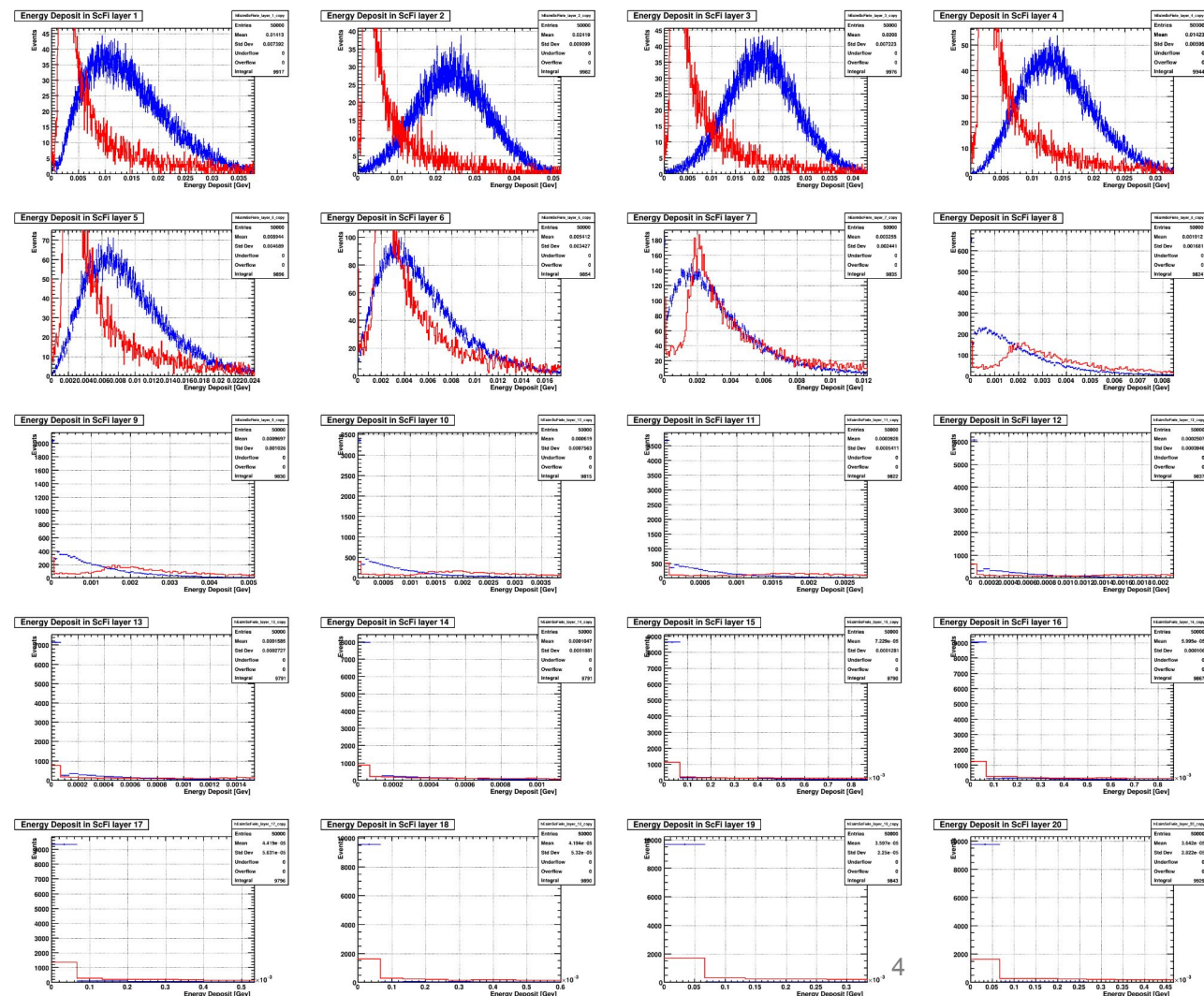
- 1 GeV particles
- **20 ScFi layers** (~1 X₀)
- First 8 interlayers with imaging layers



electron and pion ScFi calo responses

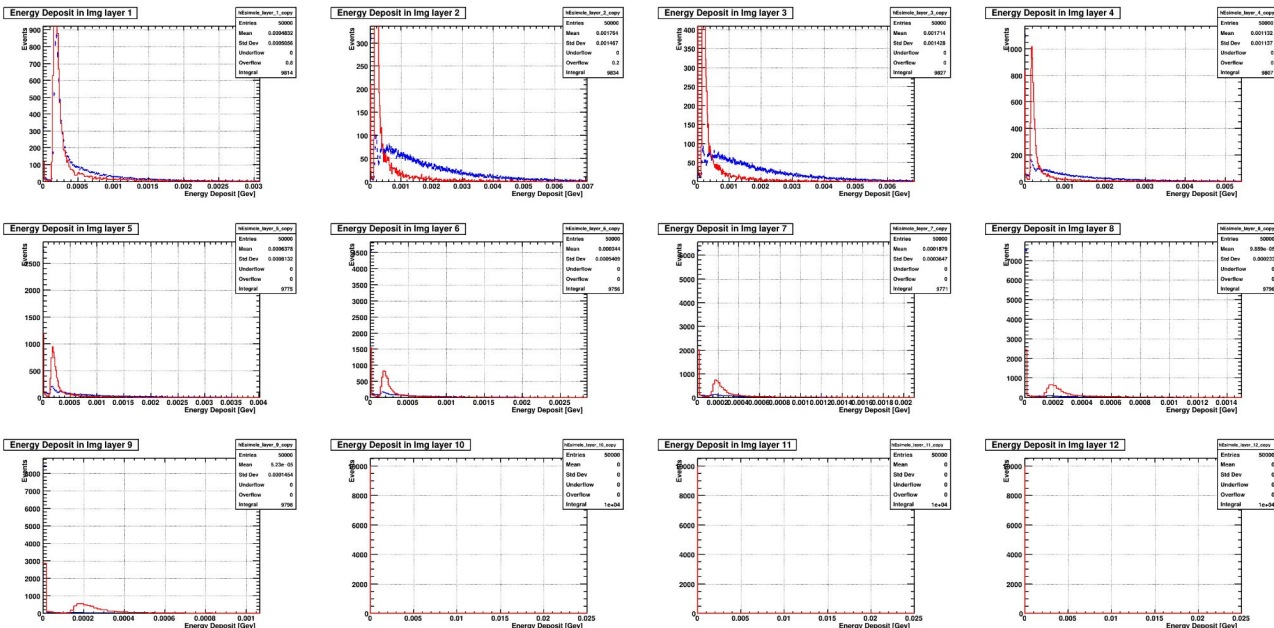
zoom on electrons

- 1 GeV particles
- **20 ScFi layers** (~1 X0)
- First 8 interlayers with imaging layers

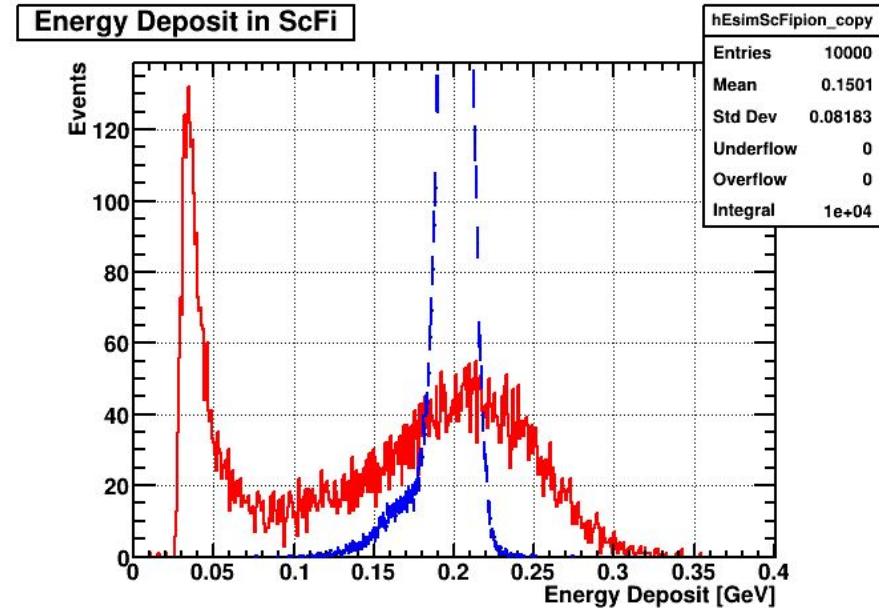
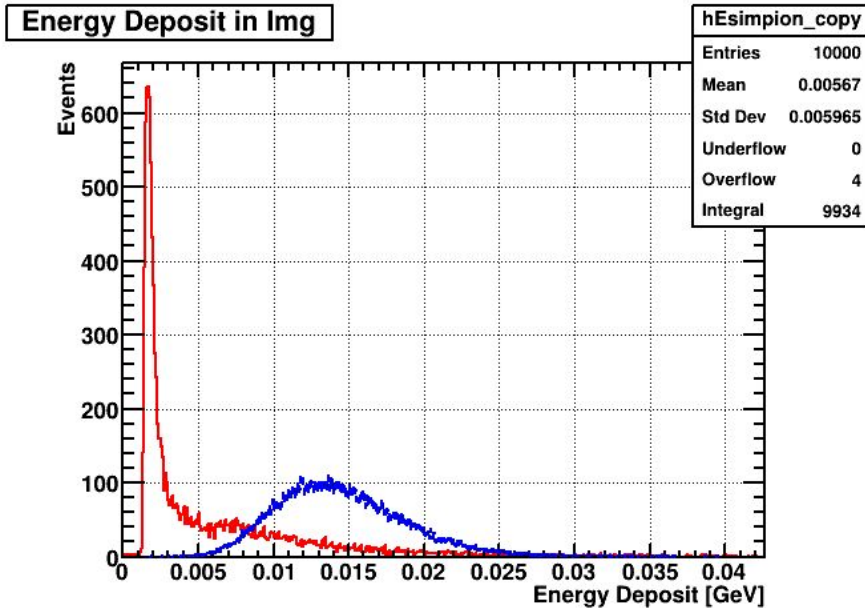


electron and pion Img calo responses

- 1 GeV particles
- 9 Img layers

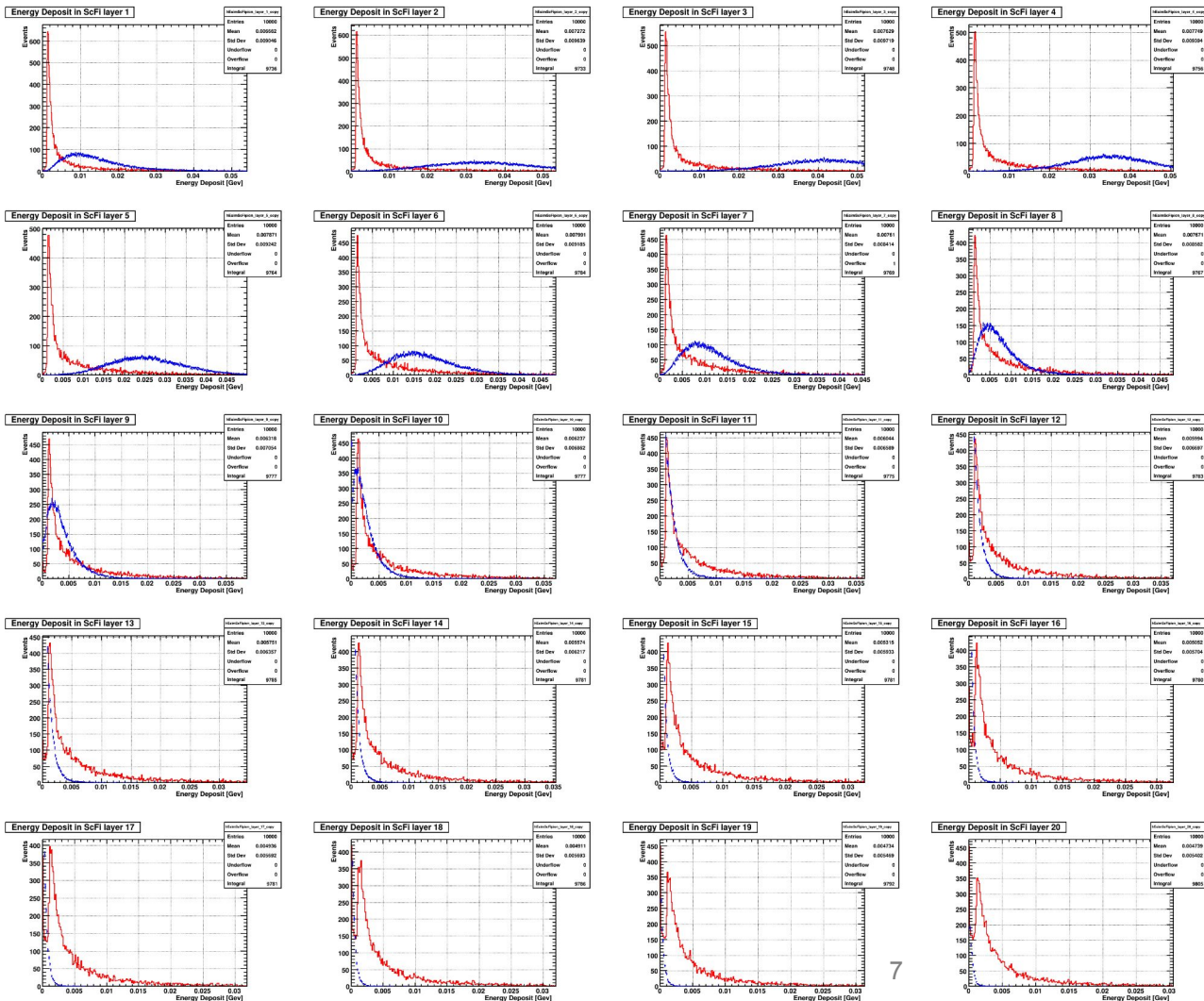


electron and pion calo responses (2 GeV)



electron and pion ScFi calo responses

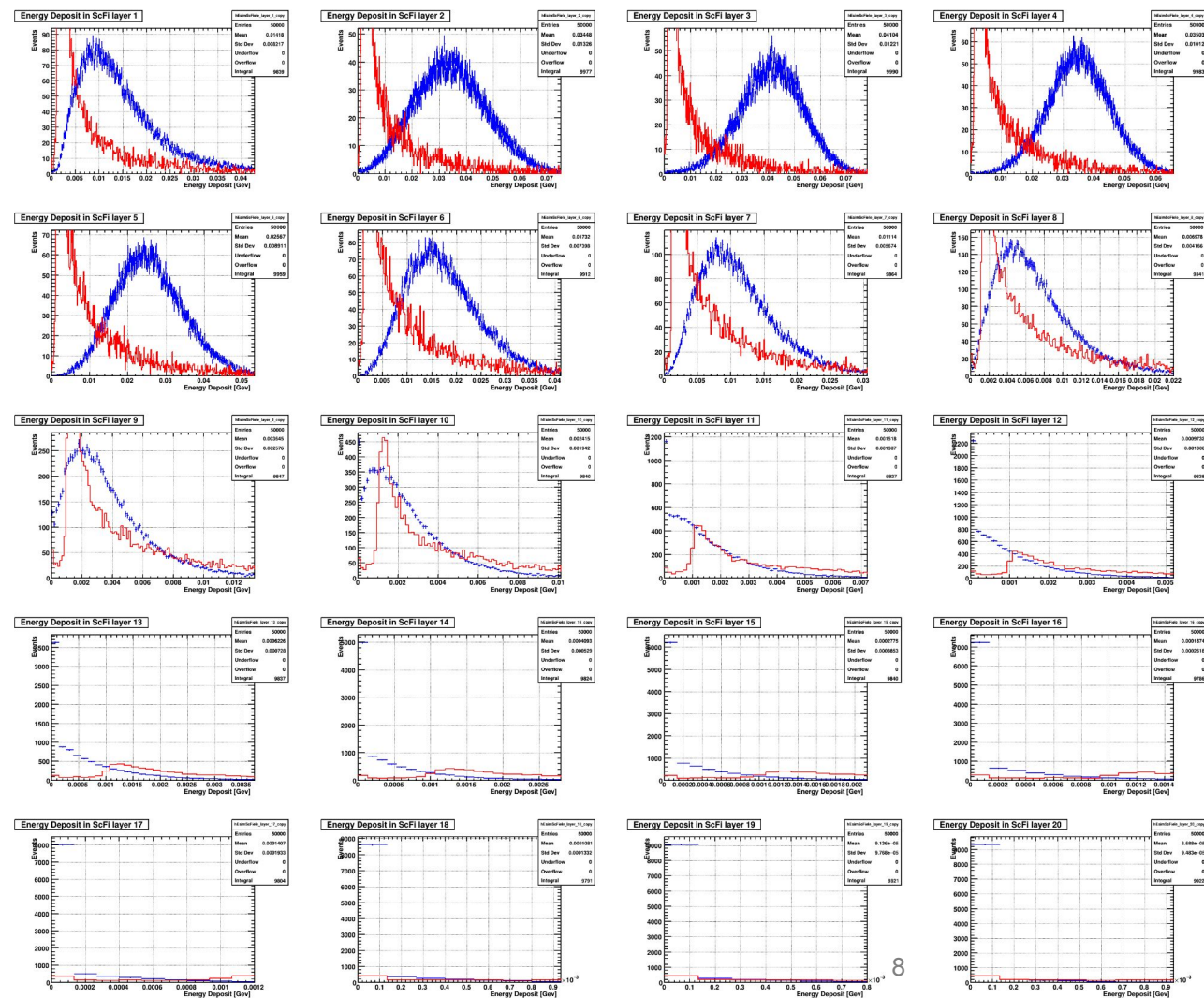
- 2 GeV particles
- **20 ScFi layers** (~1 X₀)
- First 8 interlayers with imaging layers

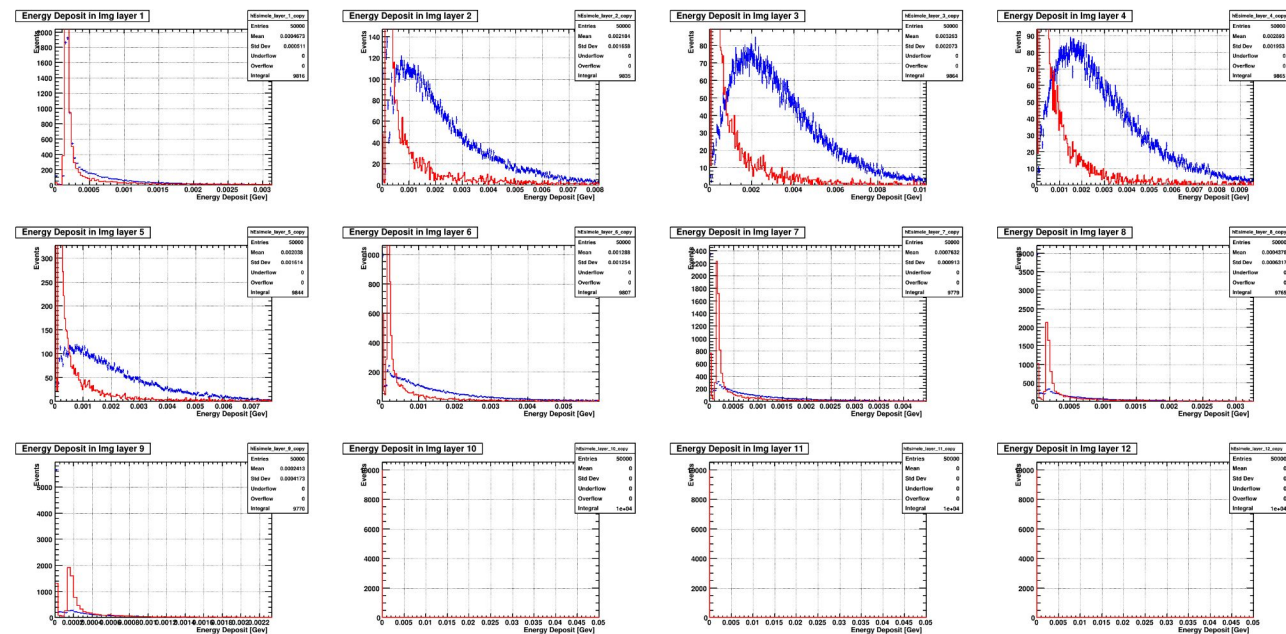


electron and pion ScFi calo responses

zoom on electrons

- 2 GeV particles
- **20 ScFi layers** (~1 X0)
- First 8 interlayers with imaging layers



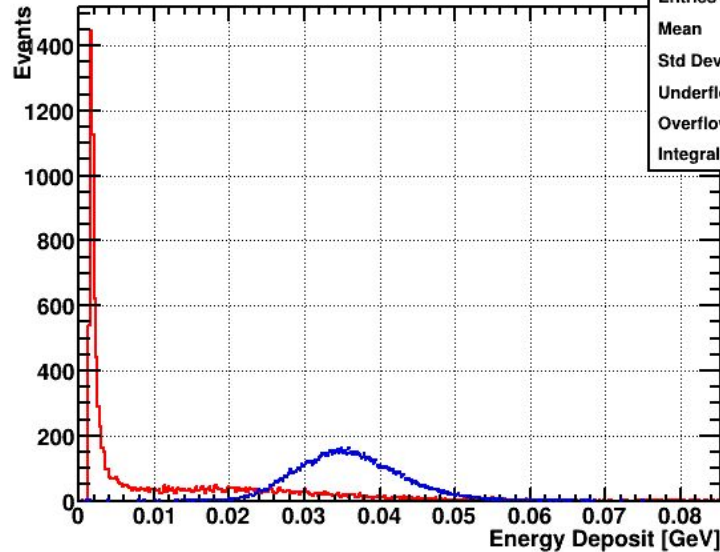


electron and pion lmg calo responses

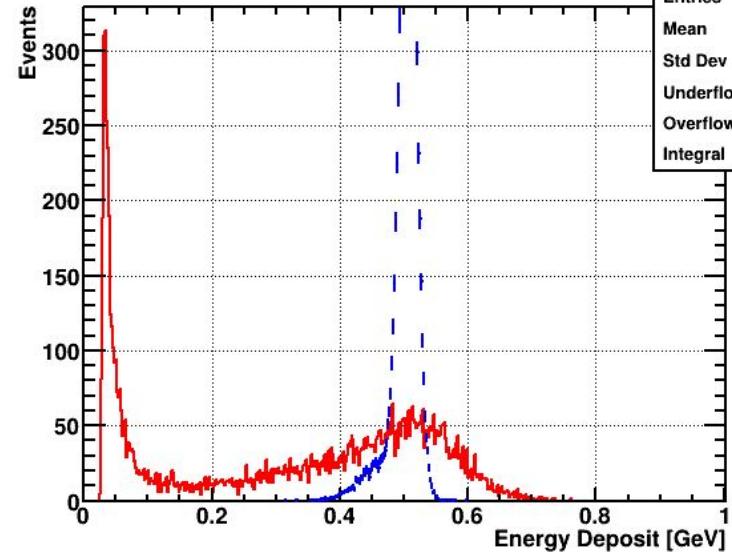
- 1 GeV particles
- 9 lmg layers

electron and pion calo responses (5 GeV)

Energy Deposit in Img



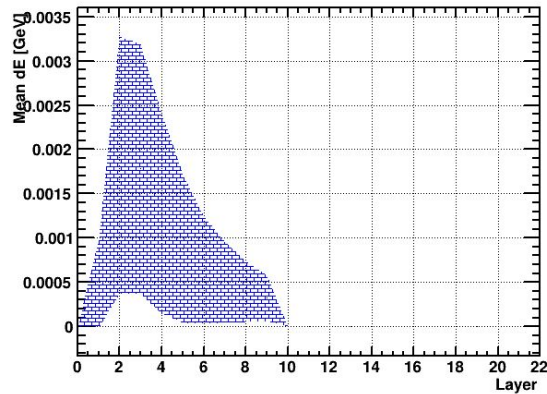
Energy Deposit in ScFi



electron responses - shower profile

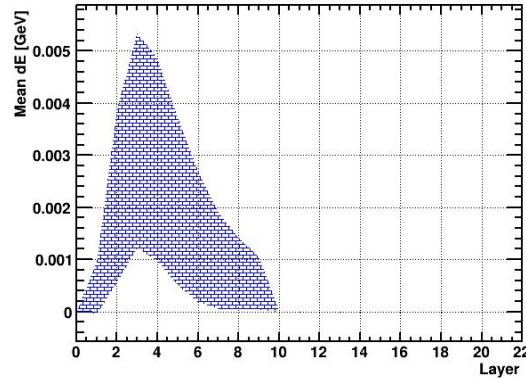
1 GeV

Mean and RMS of energy deposit



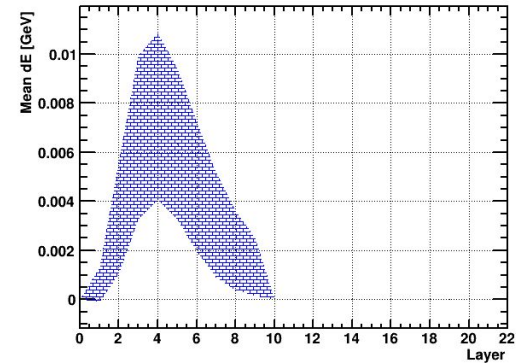
2 GeV

Mean and RMS of energy deposit



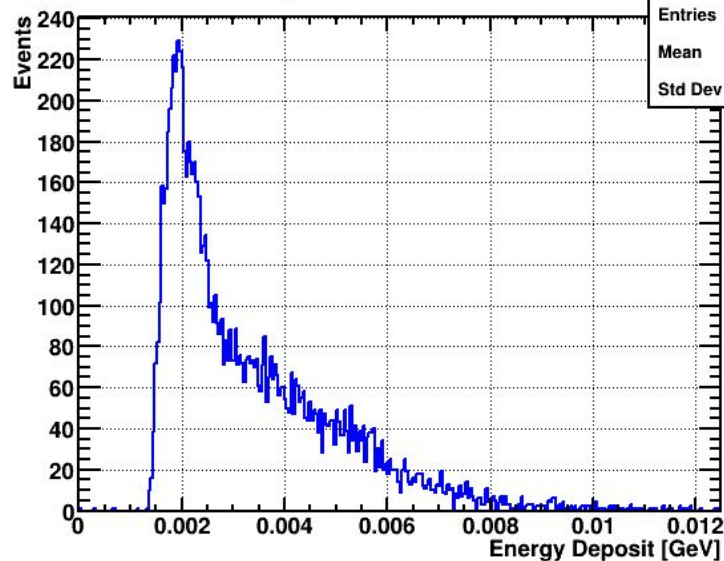
5 GeV

Mean and RMS of energy deposit

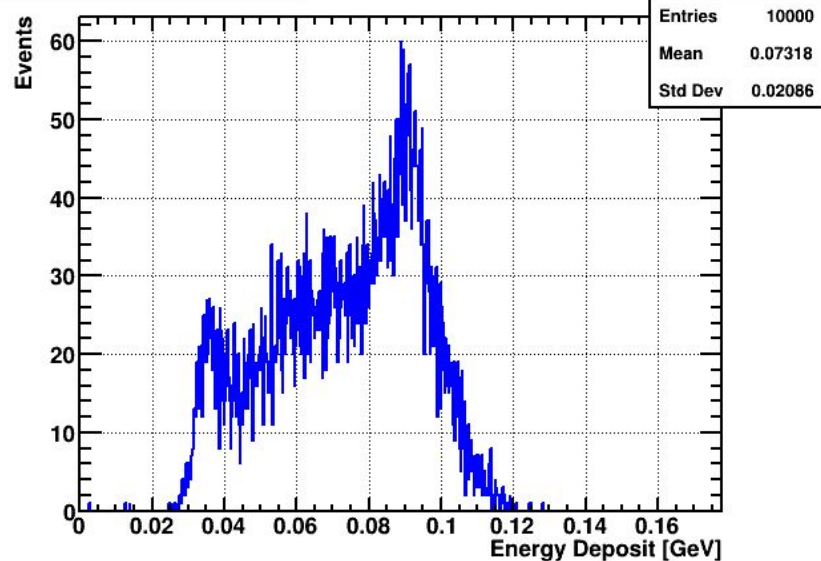


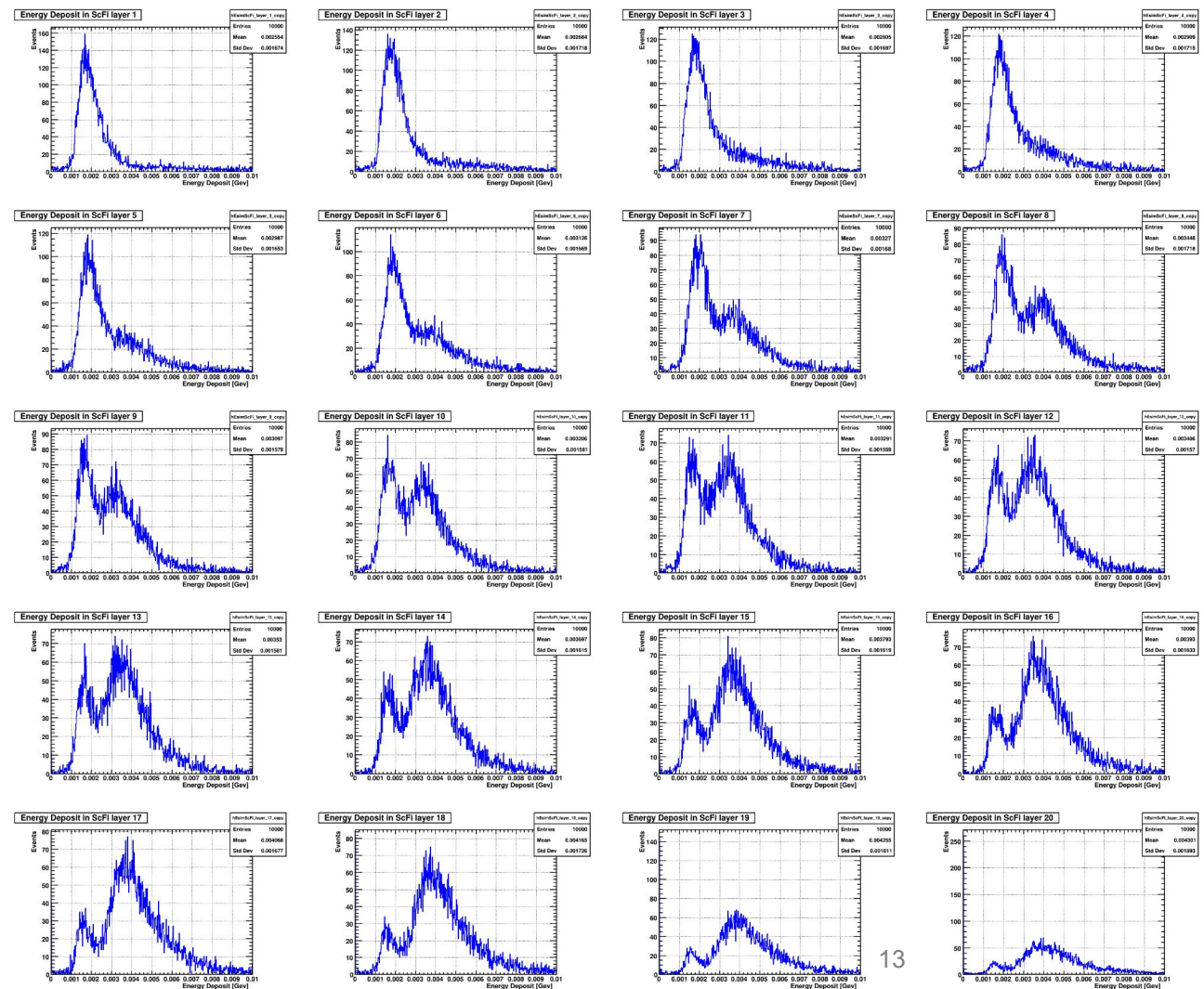
Deposited energy for muons (1 GeV)

Energy Deposit in Img



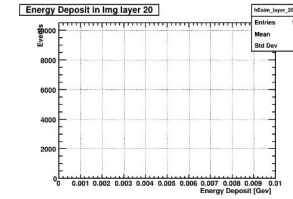
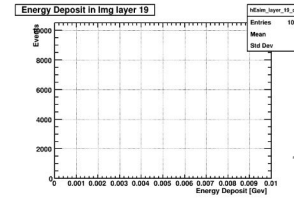
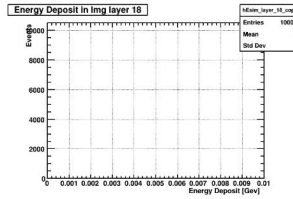
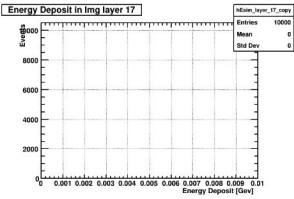
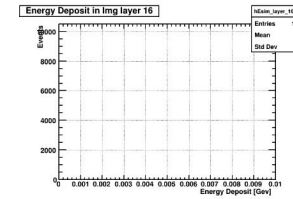
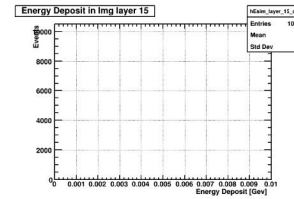
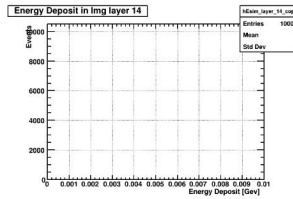
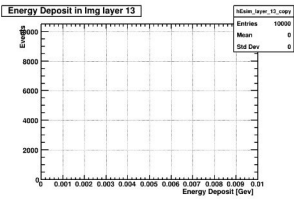
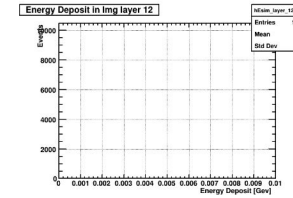
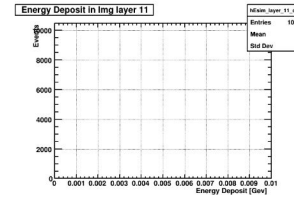
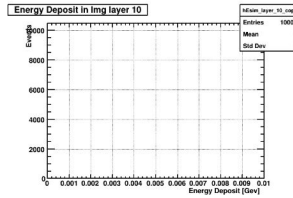
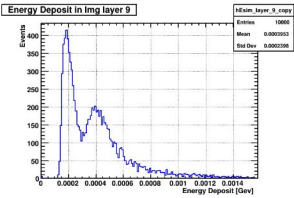
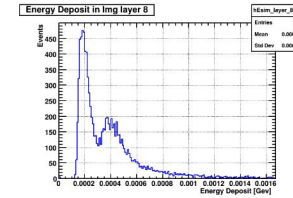
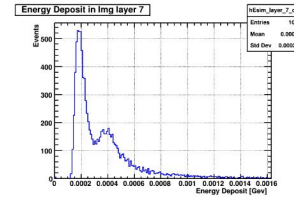
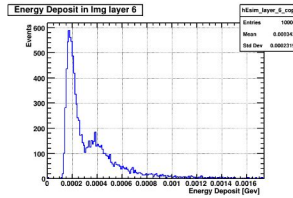
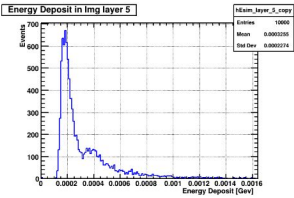
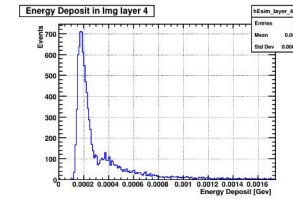
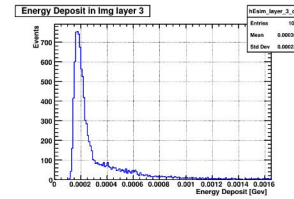
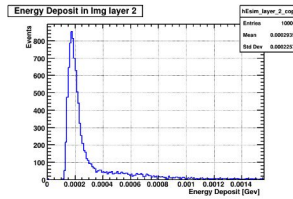
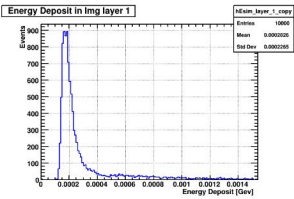
Energy Deposit in ScFi





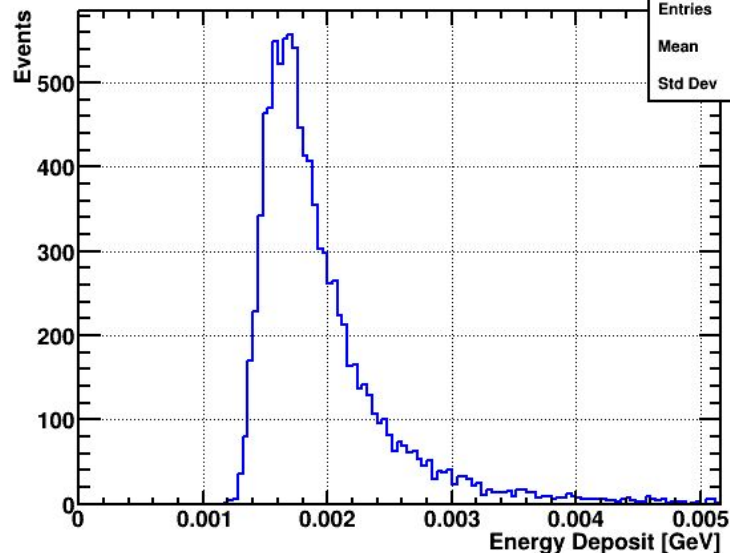
- 1 GeV muons
- **20 ScFi layers** (~1 X0)
- First 8 interlayers with imaging layers

- 1 GeV muons
- 9 Img layers

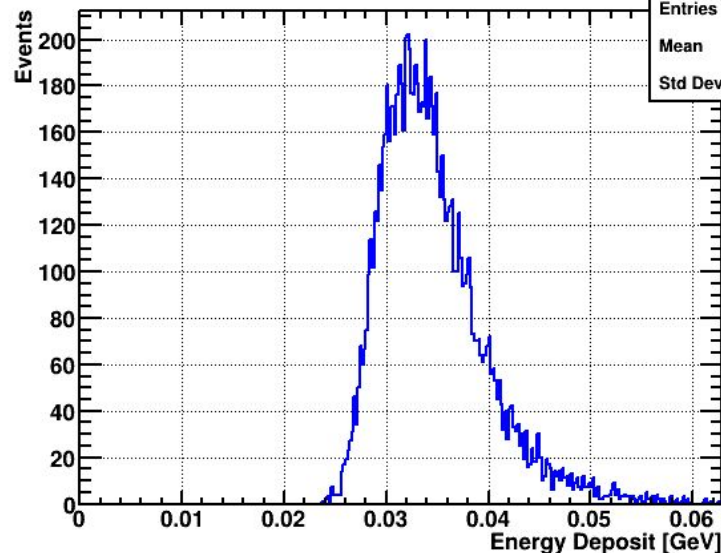


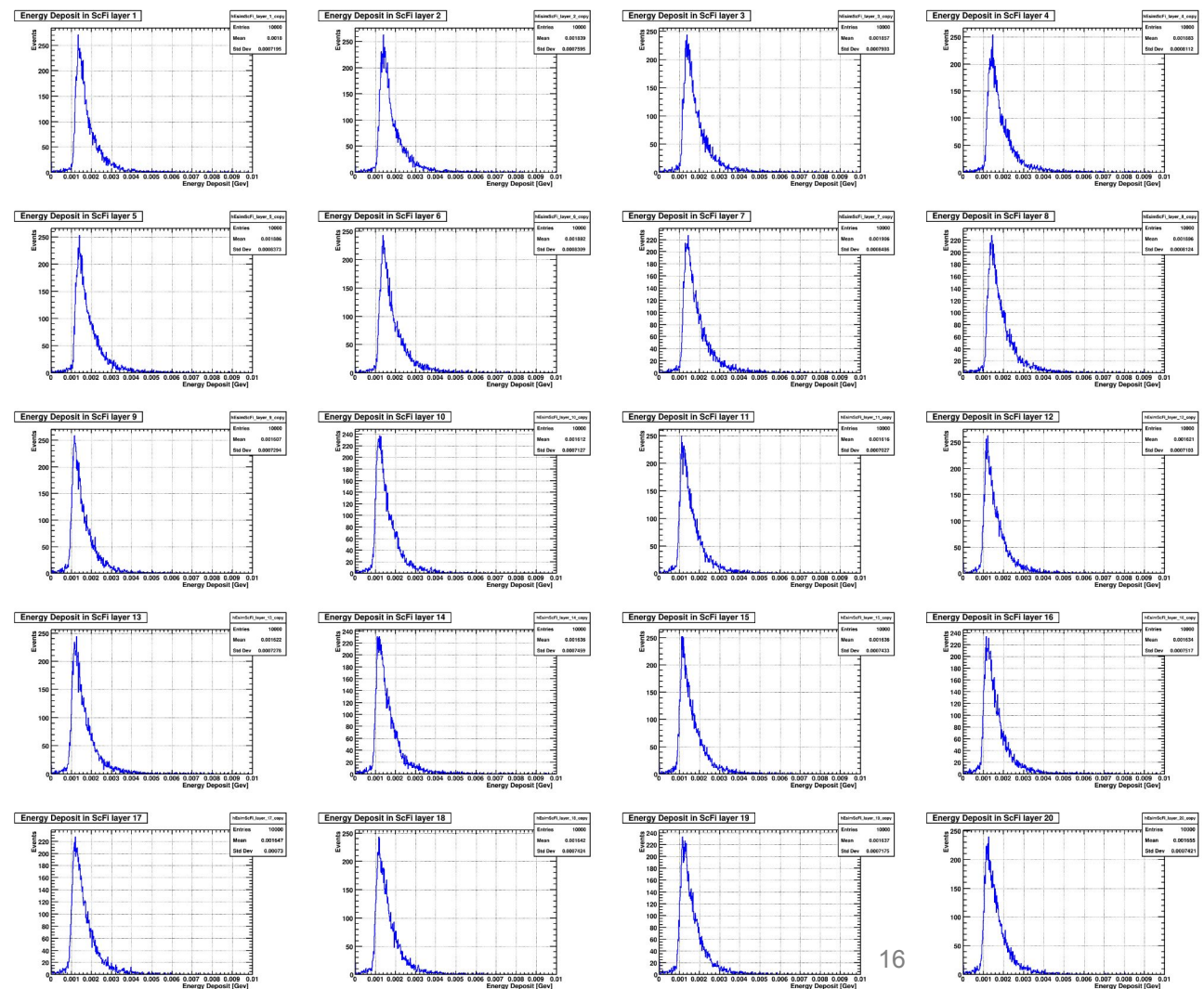
Deposited energy for muons (2 GeV)

Energy Deposit in Img



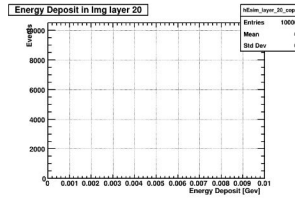
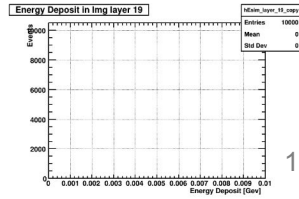
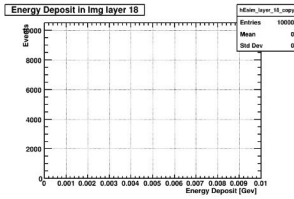
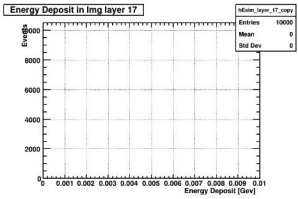
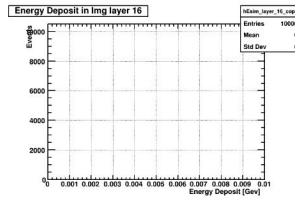
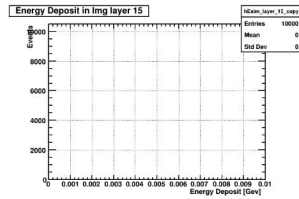
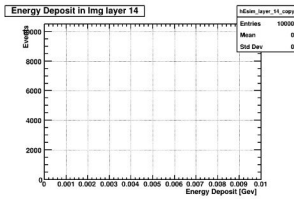
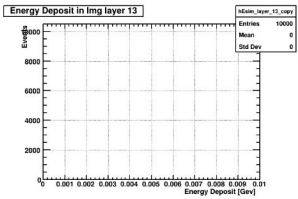
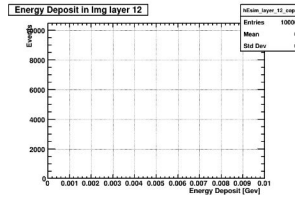
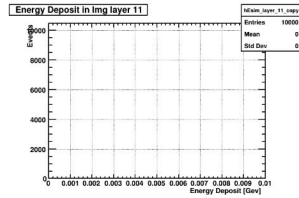
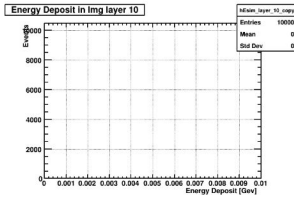
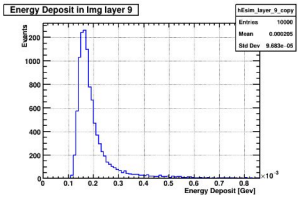
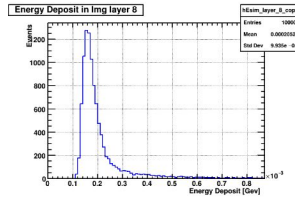
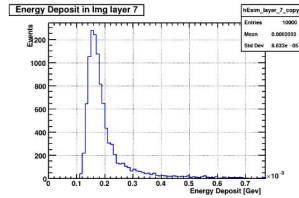
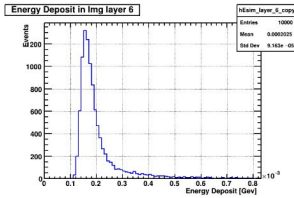
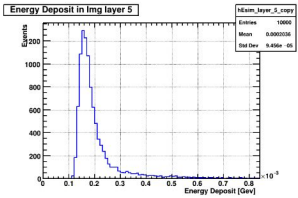
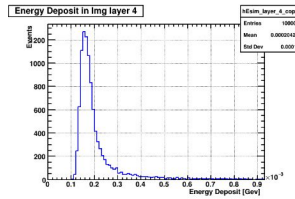
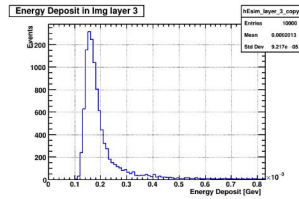
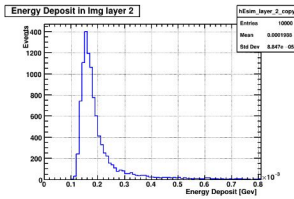
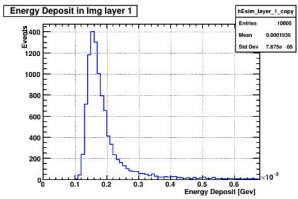
Energy Deposit in ScFi





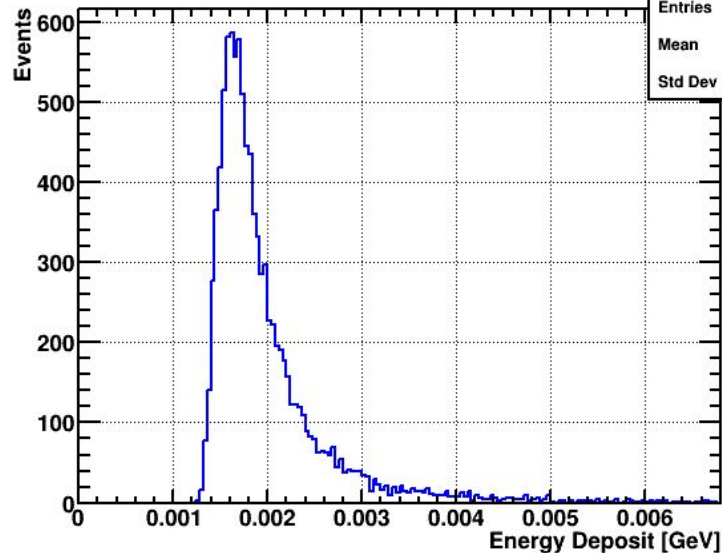
- 2 GeV muons
- **20 ScFi layers** (~1 X0)
- First 8 interlayers with imaging layers

- 2 GeV muons
- 9 Img layers

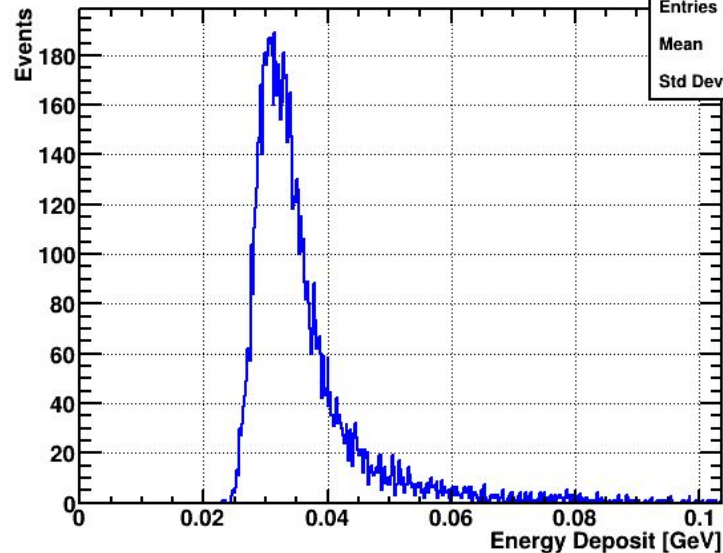


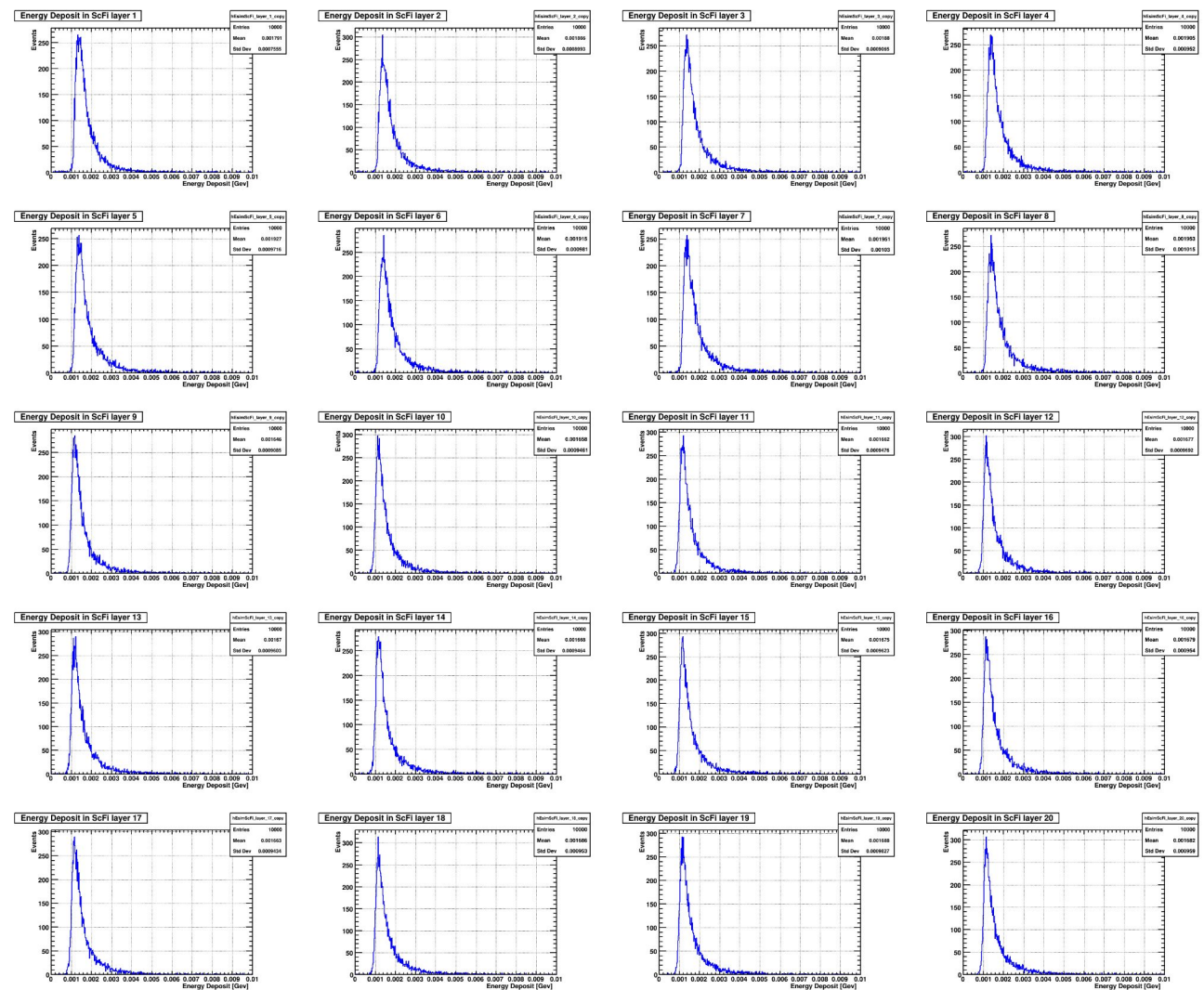
Deposited energy for muons (10 GeV)

Energy Deposit in Img



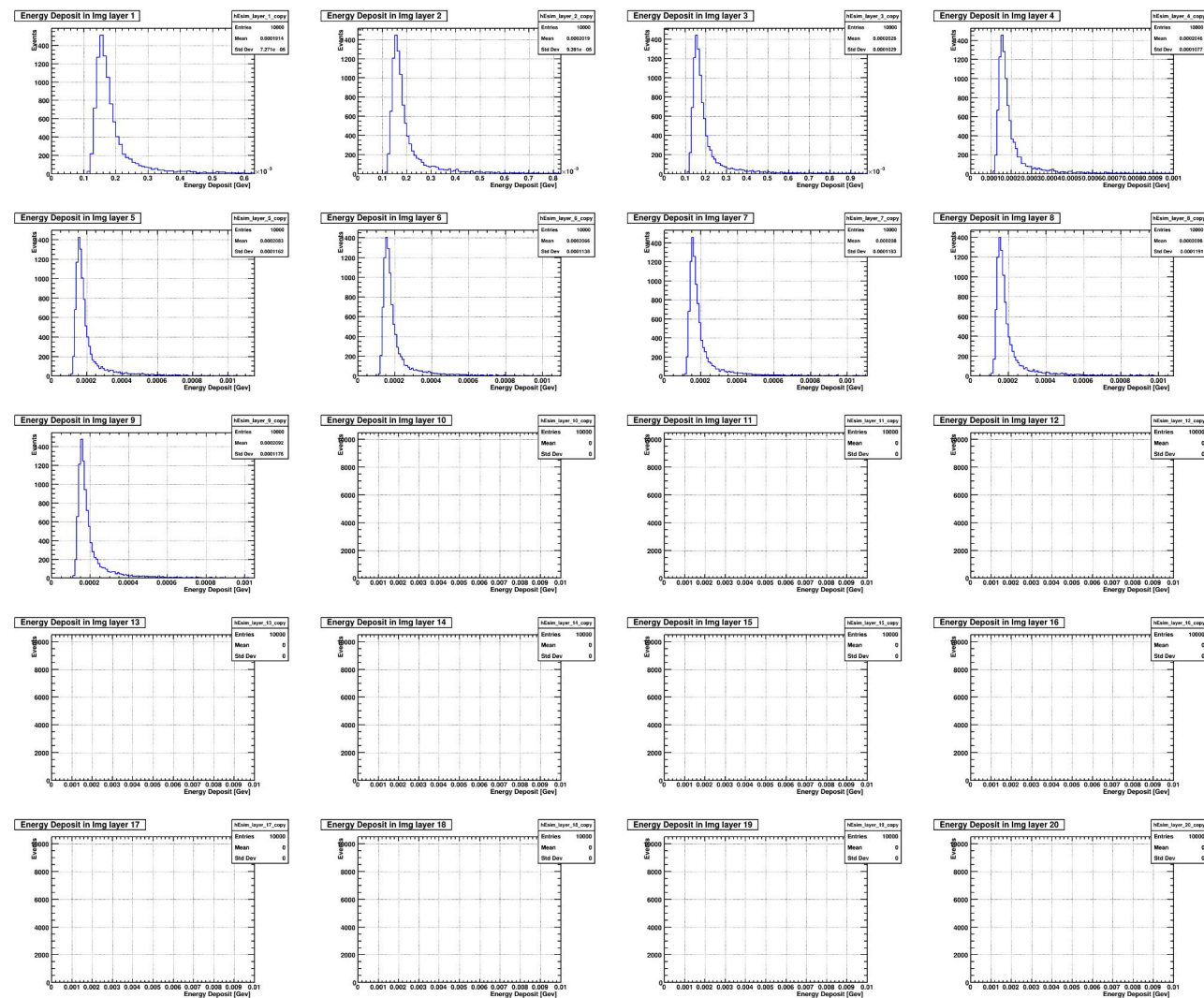
Energy Deposit in ScFi





- 10 GeV muons
- **20 ScFi layers** (~1 X0)
- First 8 interlayers with imaging layers

- 10 GeV muons
- 9 Img layers



Applying Birks Constant

1 GeV particles, $k_B = 0.126 \text{ mm / MeV}$

