

Muon ID for PFA

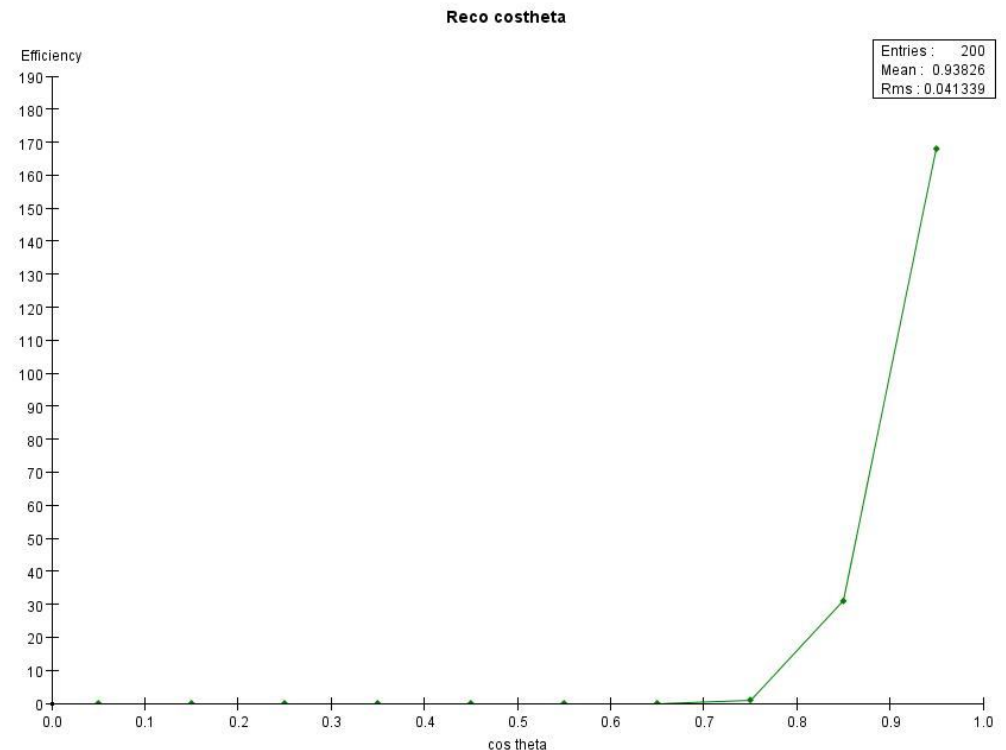
- Identify muon track from track list
 - Use standalone muon direction (track) in Muon Detector.
 - The direction is obtained with first and last hit position of muon MIP.
 - Match the direction of muon with tangent vector at showering point.
- 1000 events muon and pion sample at the range 0-50GeV

Efficiency

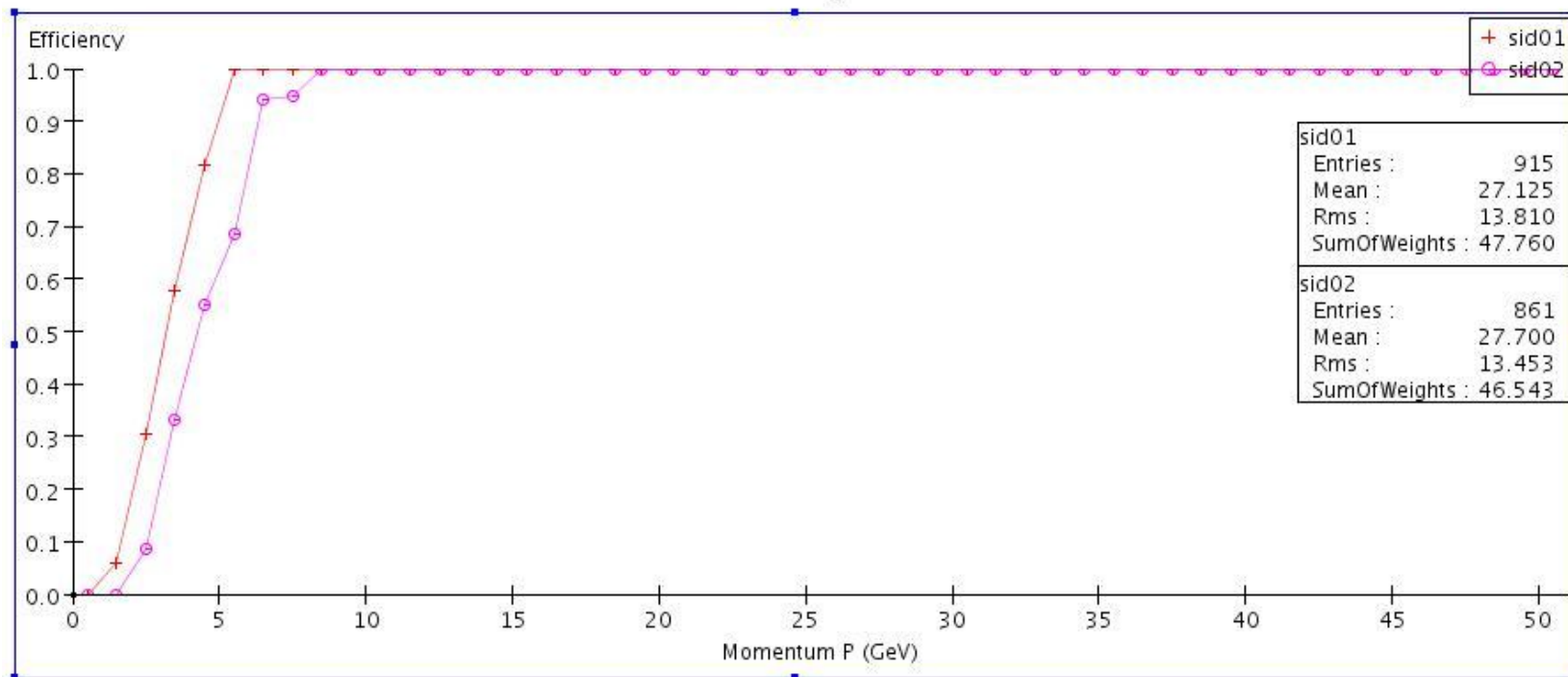
Detector	Muon	Pion
Sid01	92%	8.7%
Sid02	86%	2.0%

- For 1GeV and 2GeV muon sample
Efficiency

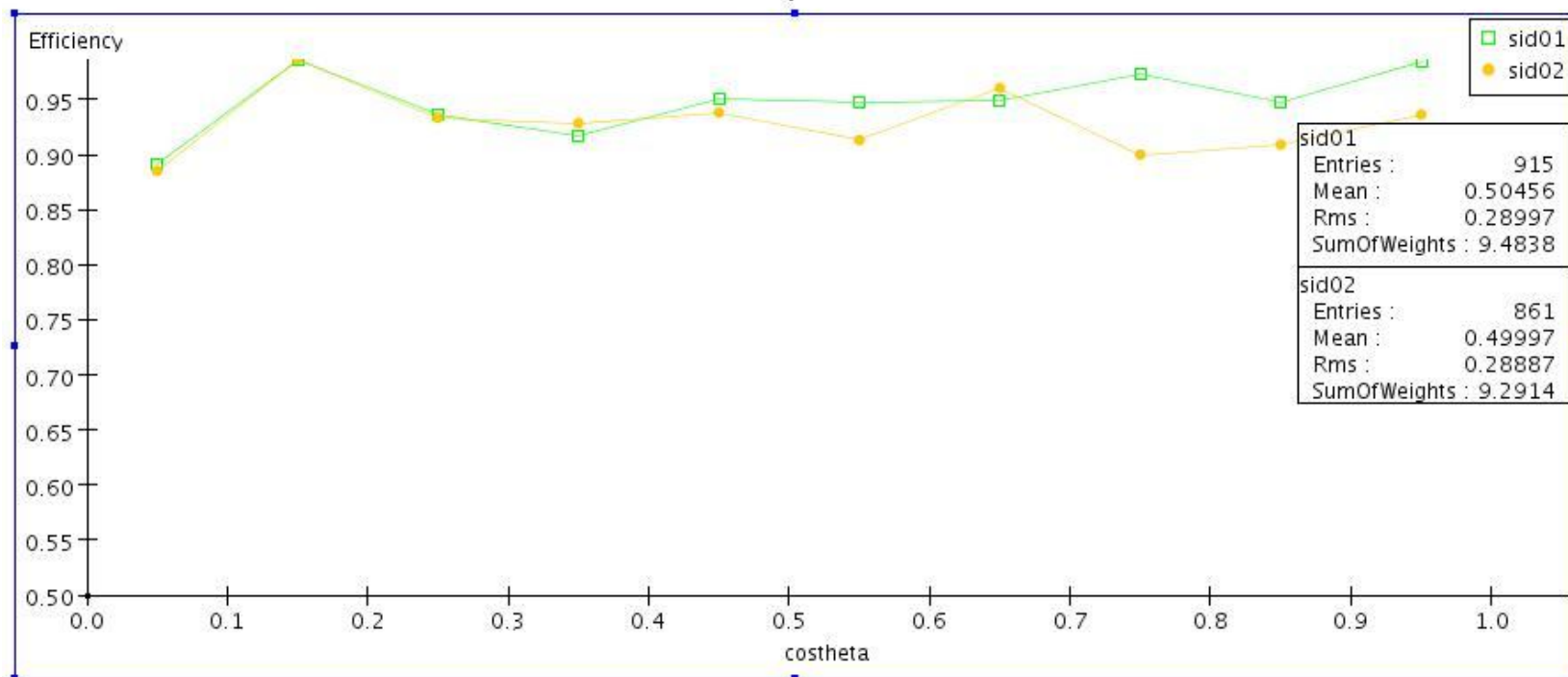
Detector	1GeV	2GeV
Sid01	0%	20%
Sid02	0%	0.5%



Efficiency P



Efficiency costheta



Things to do

- Muon mis-identification from pion
 - It comes from the way to get direction of cluster in Muon Detector.
 - Need to fit to make stand alone track and require chi-square cut.
- Add muon to output list of reconstructed particle.
- How to apply this muon track not to build clustering for this track.
 - Need rearrange the PFA code