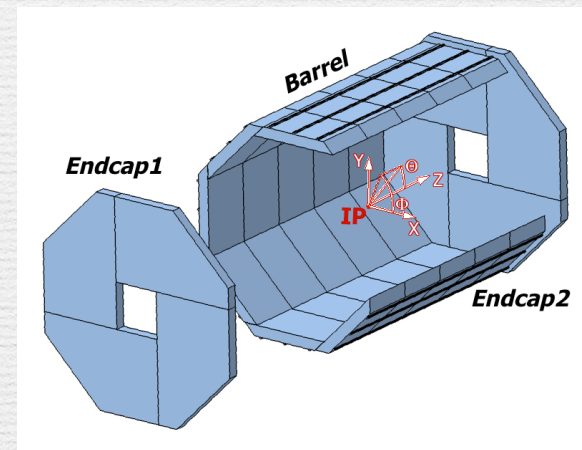


ILD SiW ECAL Geometry

Standard Geometry

- $R = 1843\text{mm}$
- 30 Si layers
- Cell Size = 5mm
- Si thickness = (0.5mm)

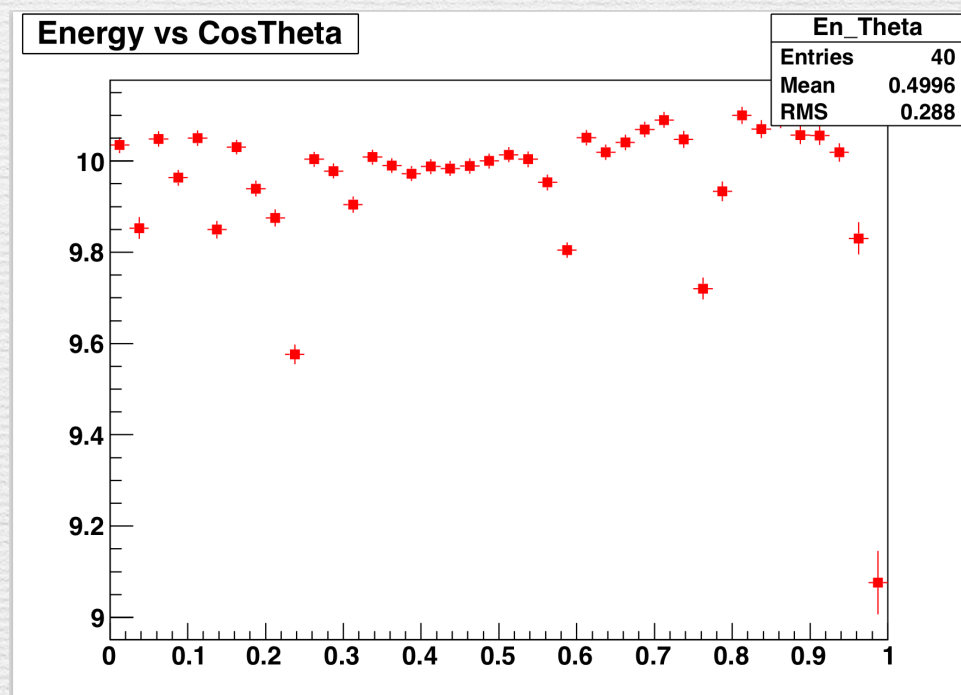
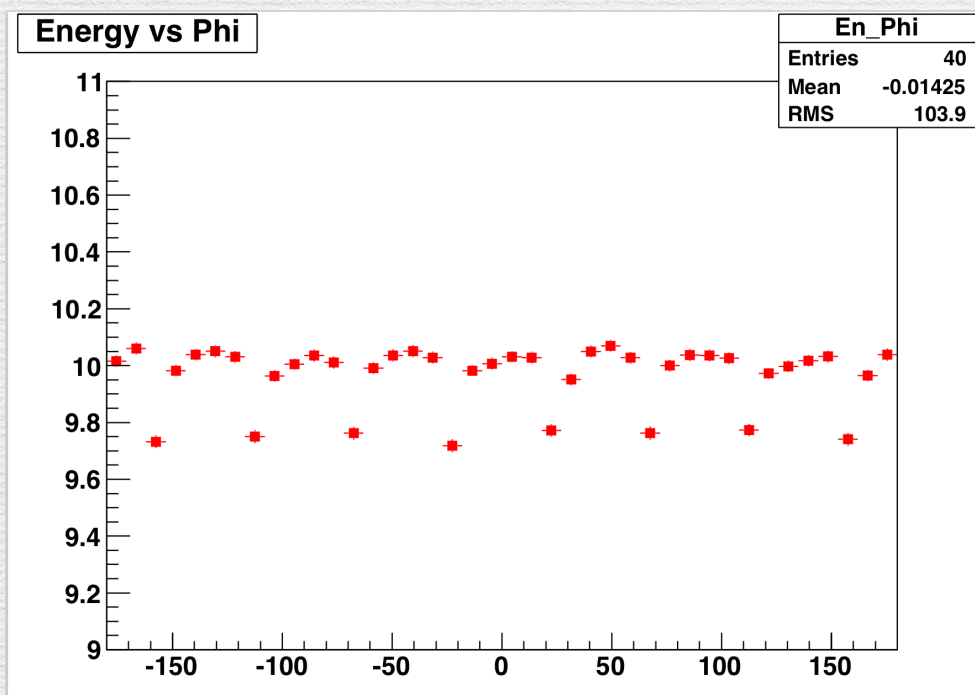


Optimisation

- Aim: cost reduction
- Performance: energy resolution (JER)
- Parameters:
 - $R = 1843\text{mm} \longrightarrow R = 1450\text{mm}$
 - 30 Si layers \longrightarrow 26 Si layers (20 Si layers)
 - Cellsize = 5mm \longrightarrow Cellsize = 2mm ??
 - Si thickness = 0.5mm \longrightarrow Si thickness = 0.7mm

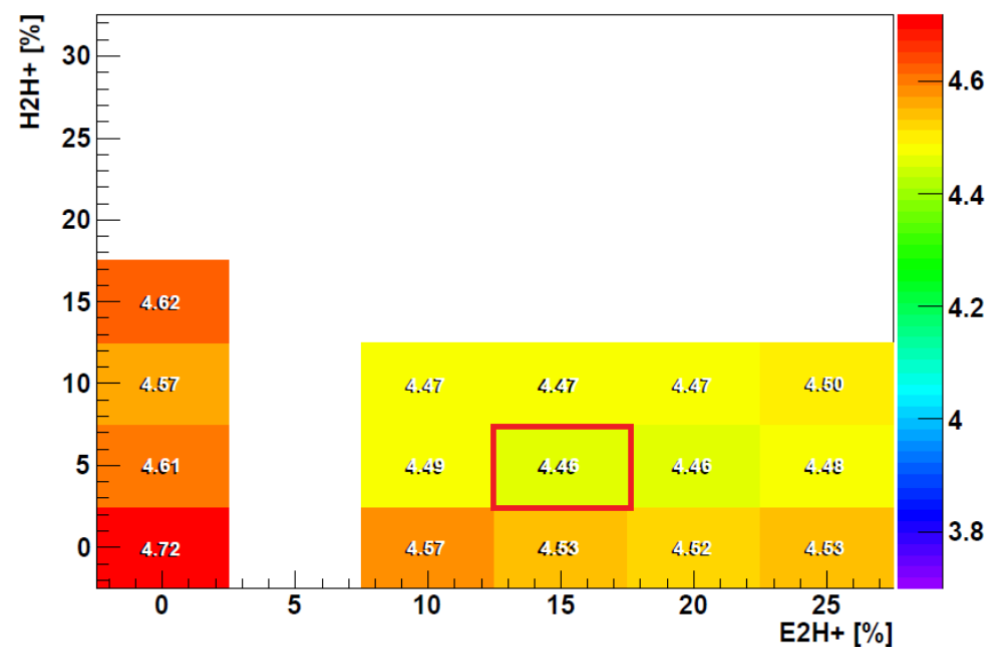
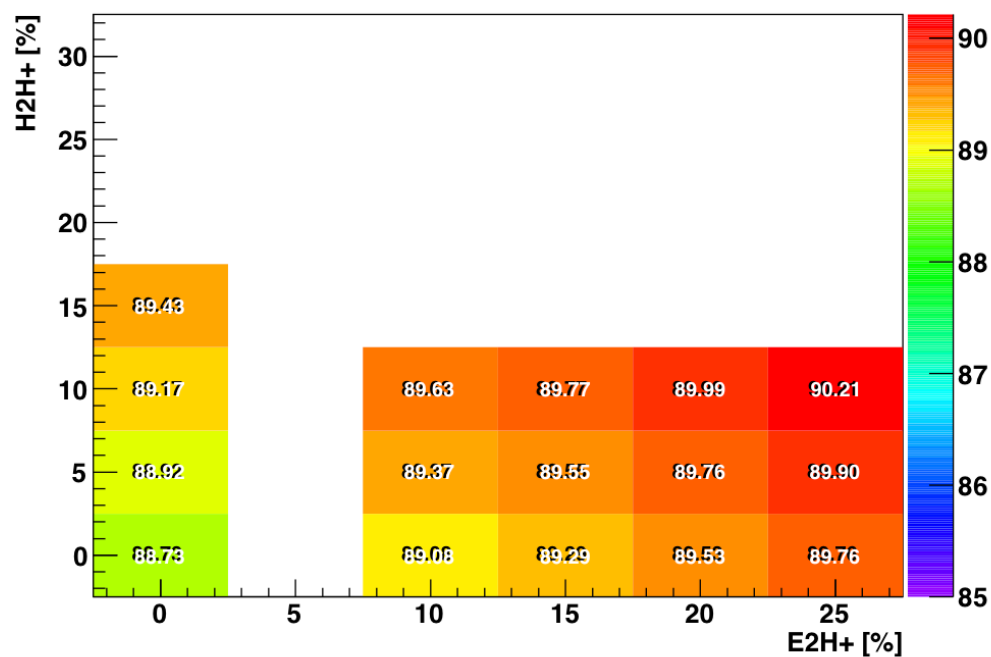
Former works

- Geometry: ILD_o2_v06
- Reconstruction: PandoraPFA v00-09-02
- Events: 10000 uds events at 91GeV, 140GeV, 200GeV, 360GeV, 500 GeV
- JER: rms90
- Calibration: Sampling fraction + Angular correction (charged & neutral PFO) + hadronic shower (E2H & H2H)



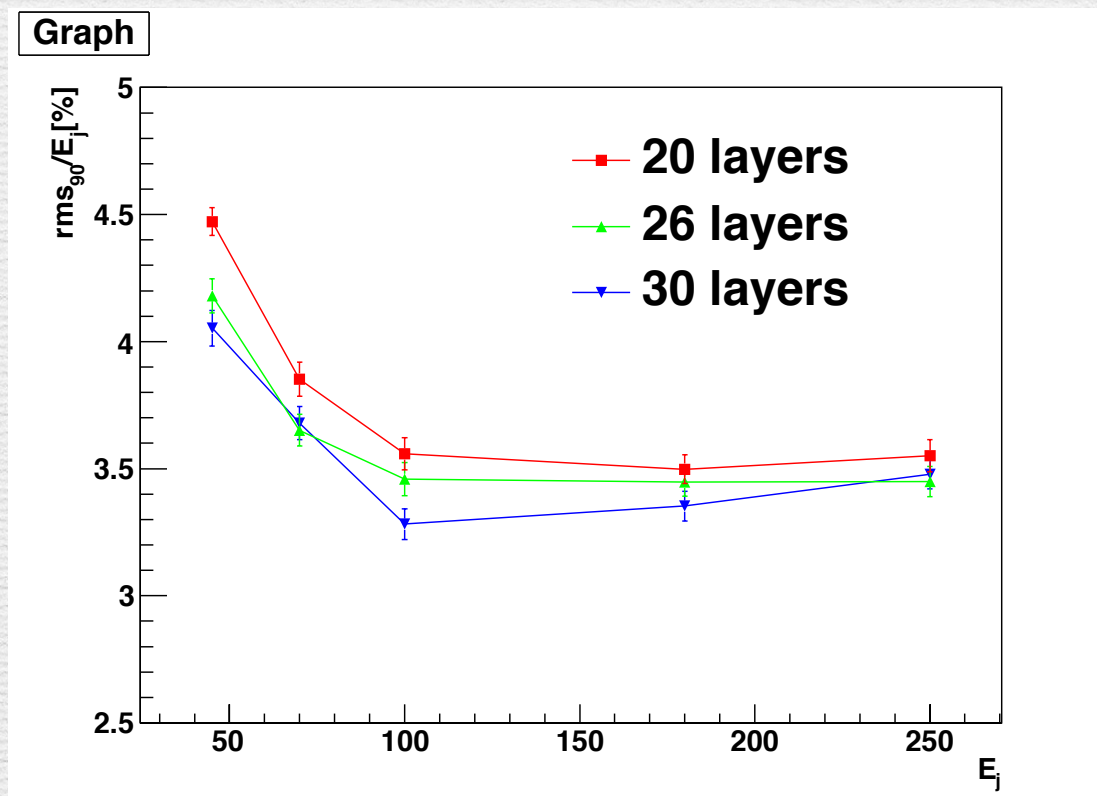
Former works

- Geometry: ILD_o2_v06
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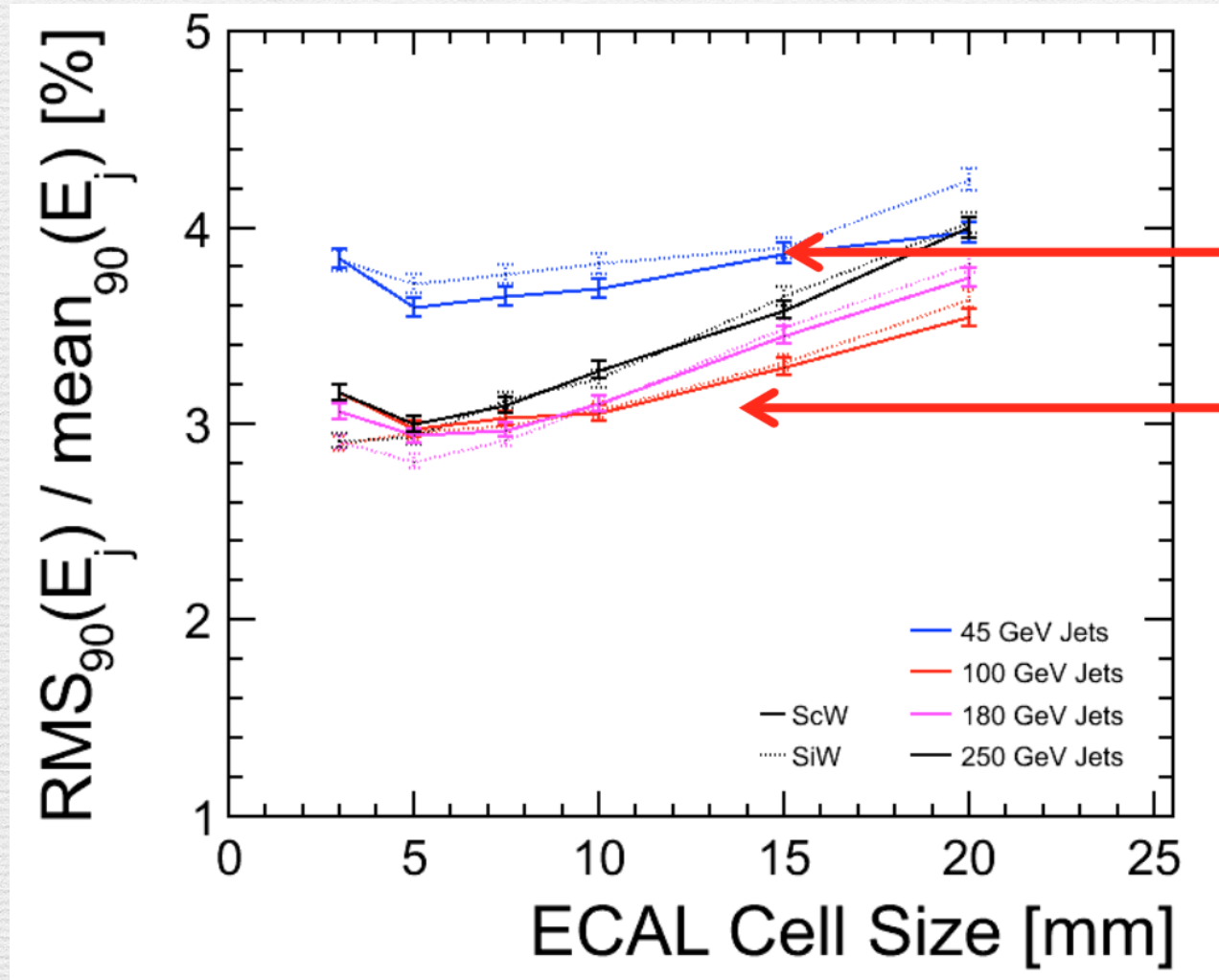


Former works

- Geometry: ILD_o2_v06
- Reconstruction: PandoraPFA v00-09-02
- Events: 10000 uds events at 91GeV, 140GeV, 200GeV, 360GeV, 500 GeV
- JER: rms90
- Calibration: Sampling fraction + Angular correction (charged & neutral PFO) + hadronic shower (E2H & H2H)



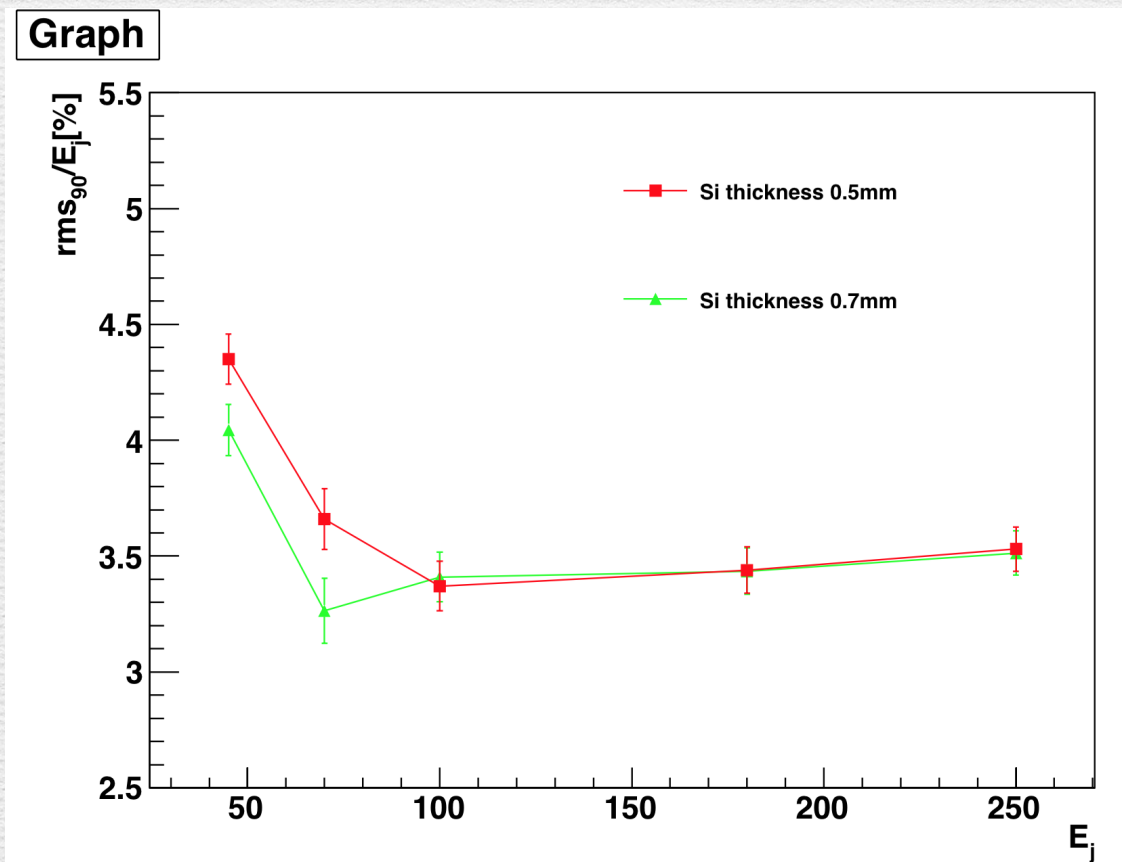
Cellsize



From M. Thomson's presentation meeting 2014, Oshu

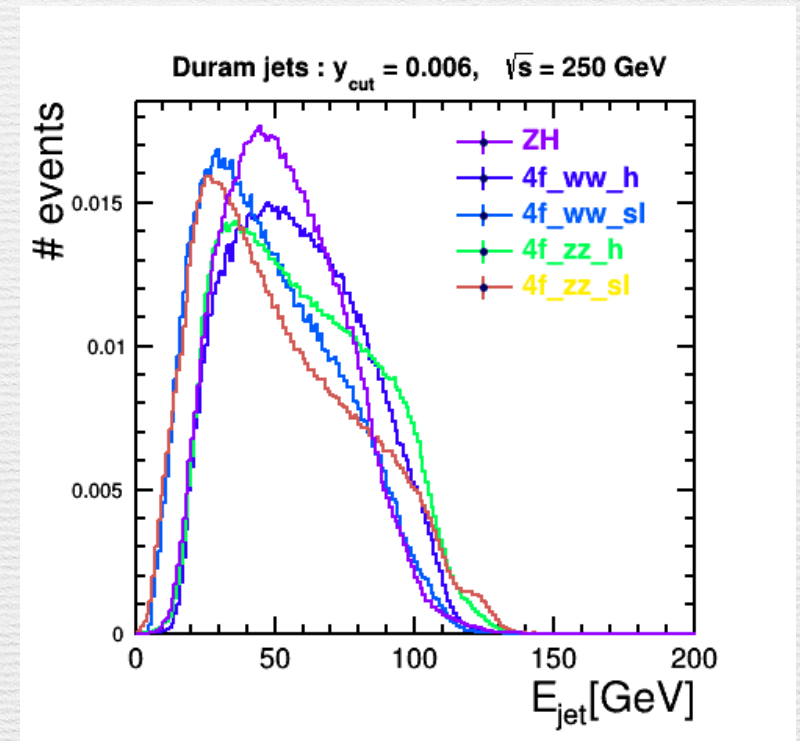
JER thickness dependence

- Geometry: ILD_o2_v06
- Reconstruction: PandoraPFA v00-09-02
- Events: 10000 uds events at 91GeV, 140GeV, 200GeV, 360GeV, 500 GeV
- JER: rms90
- Calibration:



Summary

- JER degradation for Si layers number: 10 % (45GeV)
- JER improvement for Si thickness: 8 % (45GeV)
- Q: A solution for both cost and performance?



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Thank for your attention !