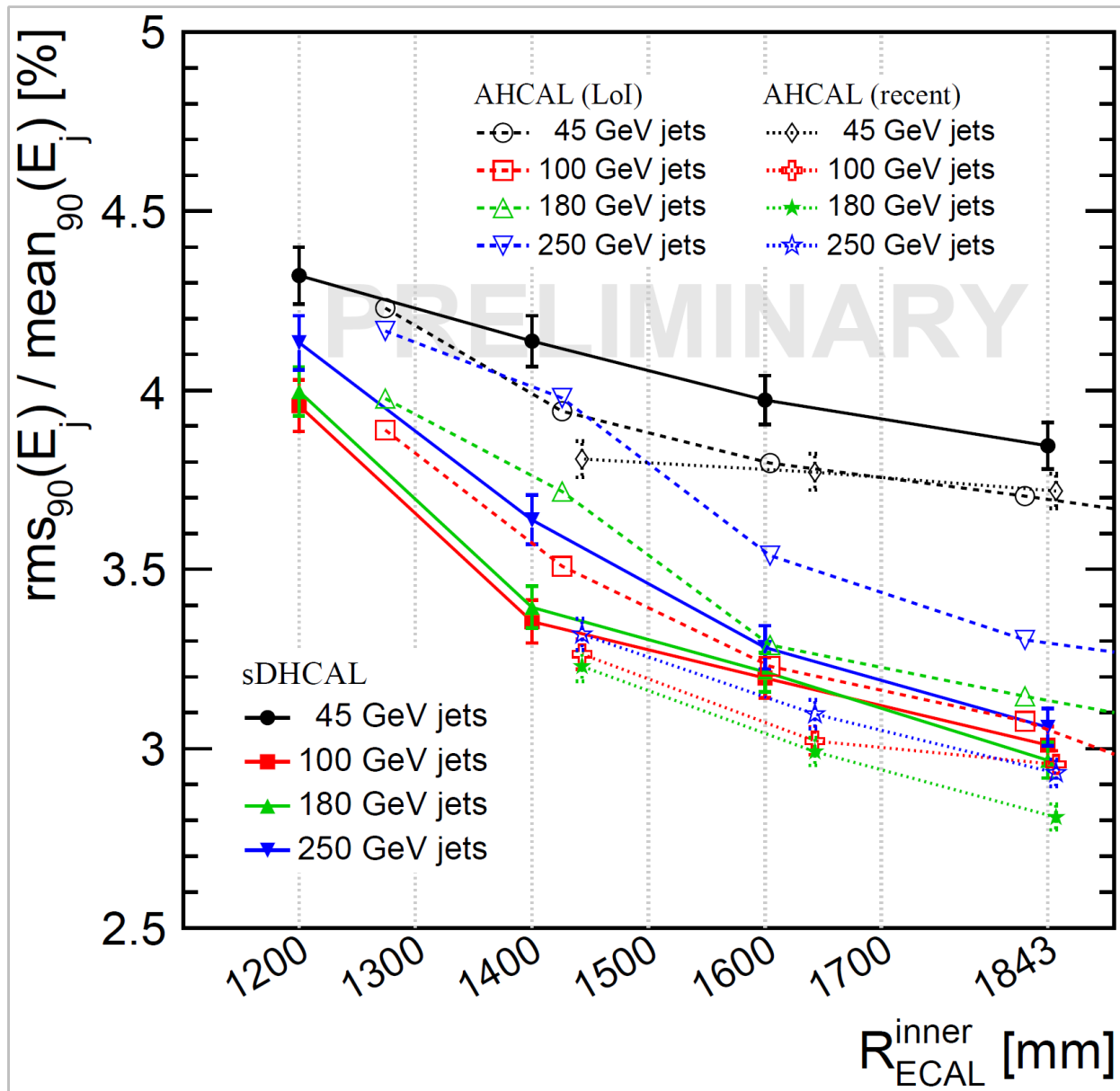# Jet energy resolution vs Radius

- JER is determined using Z → uds (Z decaying at rest– qqbar)
- CM energies: 91, 125, 200, 380, 500 GeV → Jet energies: 45, 62, 100, 180, 250 GeV

- This study: **solid lines**, PandoraPFANew v0.09
- Results for AHCAL @ LoI – **dashed lines**, PandoraPFA
- recent updates for AHCAL – **dotted lines**, PandoraPFANew v0.12 (cf. J. Marshall's talk.)

- PandoraPFANew is not optimized for 1×1 cm² sDHCAL
- even though, sDHCAL seems to have similar resolution at medium energies as AHCAL

SiW ECAL: 5×5 mm², AHCAL: 3×3 cm², sDHCAL: 1×1 cm²

Next

- For sDHCAL: trunk version of PandoraPFANew gives worse results
- JER vs Radius:
  - Include energy correction to sDHCAL, take into account compensation,
  - X-check with AHCAL: reduce only radius (not length)
  - Repeat with R=1450mm, ecal Nb layers = 25
- ...
- Check Mokka simulation for radius reduction
  - 3,4,5 modules
  - identical size modules or with different sizes, ...
  - For now 5 modules are reduced together
- Revise study of Ecal number of layers: with new Pandora, change also sampling fraction