

Journal Club: Session 12 - 20. Jan 2020

TOPIC: Modern Particle Collider Detectors

Material:

A: Sefkow et al. Experimental Tests of Particle Flow Calorimetry, Rev.Mod.Phys. 88 (2016) 015003

arXiv: 1507.05893

Topics for discussion:

- 1) What kind of demands does the precision physics program at future e^+e^- colliders place on the event (energy) reconstruction?
- 2) What is the difference between classical jet energy measurement and the particle flow approach?
- 3) How does particle flow benefit from highly granular calorimeters?
- 4) What is the preferred ordering of the detector components of a full collider detector system to fully exploit the particle flow approach (from the interaction point outwards)?
- 5) Why are software compensation techniques especially effective in combination with highly granular calorimeters, e.g. the CALICE AHCAL (Analog Hadronic Calorimeter)?