

Jet Areas pile-up
subtraction
meeting with
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Event density

- Towers vs. Topo-clusters:
 - Topo-towers are built with a 4/2/0 noise threshold, based on the RMS of the electronic + pile-up noise.
 - noise-suppression affects low and high p_T jets differently
 - relative effect of background fluctuations (σ/ρ) seems to be larger for topo-clusters ($\langle\rho\rangle$ is significantly smaller for clusters, but σ is about the same as for towers)
 - $(\sigma/\rho) > \sim \sqrt{A}$
- Out-of-time pile-up effects:
 - How to treat negative energy deposits from out-of-time pile-up:
 - consider negative energy constituents to build k_T jets?
 - allow negative energy jets to compute ρ ?
 - Can assume high p_T “signal” jets are always above out-of-time fluctuations such that negative energy constituents are not relevant to build jets?
- Eta range, jet algorithm, and jet area
 - Balance between accounting for eta-dependences and statistical fluctuations from reduced number of jets
 - Preferred jet algorithm to compute ρ ? Preferred area calculation?
 - Does the R parameter of jets used to calculate ρ need to match the R parameter of the signal jets? (zero-suppression, showering effects)

Physics effects, jet shapes, jet-by-jet information

- Effects of UE, ISR, and FSR.
 - Is it possible (desirable?) to subtract out the UE contribution of the jet-areas method to only correct for multiple interactions? Would an average ρ computed from events with one interaction be enough? Sensitivity to selection cuts?
 - Effect of event selection topology to compute/apply the jet areas pile-up subtraction?
- How to correct jet shapes:
 - Broadening
 - N-subjettiness
 - ...
- Incorporation of jet-by-jet information:
 - Use of track-jet-vertex association to re-scale the jet area?

