Detector performance studies with fast simulation: Jet Angular and Energy resolution

Study the dependence of the jet Angular and Energy resolution
on the calorimeter granularity and other detector parameters

The study is done using parametrized detector simulation
(DELPHES)

Specific tasks:

1) Study literature on the angular and energy resolution at generator level with different jet definitions

2) Study the limitations of the fast simulation in defining a realistic PF list on which the jet is constructed and overcome them if possible [with a cost vs benefit evaluation]

3) For a given jet algorithm study how the jet angular and energy resolution depends of few detector
parameters: e.g. {solenoidal} Magnetic field, Ecal granularity , track acceptance, photon acceptance, Hcal granularity, Hcal resolution, neutral hadron acceptance. The study should be done vs jet momentum and theta.

4) Study the effect of the material budget of the tracker introducing in the fast simulation the concept of interaction and secondary particles that can be seen in the calorimeters but not necessary reconstructed in the tracker.