

Jet finding applied to topological clusters at the EM scale.

Changes the jet direction to point to the hard-scatter vertex. Does not affect E.

Applied as a function of event pile-up p_T density and jet area.

Removes residual pile-up dependence, as a function of μ and N_{PV} .

Absolute MC-based calibration

Global sequential calibration

Residual in situ calibration

Corrects jet 4-momentum to the particle-level energy scale. Both the energy and direction are calibrated.

Reduces flavor dependence and energy leakage effects using calorimeter, track, and muon-segment variables. A residual calibration is derived using in situ measurements and is applied **only to data**.