

Measurement of eta meson production in pp collisions at $\sqrt{s} = 7$ TeV with the ALICE electromagnetic calorimeter

The measurement of the neutral meson transverse momentum (p_T) spectra in the new energy regime of the LHC is an important input to constrain theoretical models describing hadron production within the perturbative quantum chromodynamics. Such measurements are the first ones that have been performed by the ALICE electromagnetic calorimeter (EMCal) in proton-proton collisions at $\sqrt{s}=900$ GeV, 2.76 TeV and 7 TeV over a wide transverse momentum range at mid-rapidity $|y|<0.7$.

The complete chain of the neutral meson analysis which includes data quality assessment, data correction and Monte Carlo tuning, reconstruction of the raw eta p_T spectrum from invariant mass analysis and efficiency calculations will be presented. Special emphasis on systematic uncertainty evaluation will be made. The direct comparison of the p_T spectra obtained by EMCal, with complimentary measurements by other ALICE detectors allows independent cross-checks of the EMCal results and provides a first test bench for the pQCD predictions at LHC energies in a wide kinematic range. The measured ratio of eta meson and pi0 production will be presented and compared with results obtained at lower energies.

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