



Contribution ID: 623

Type: Poster

## Study of the underlying event with the CMS detector at the LHC

The underlying event in pp interactions at both 900 GeV and 7 TeV is studied exploiting the performances of the powerful CMS tracking system. Charged multiplicity and energy densities are measured in charged jet events concentrating in the regions perpendicular to the plane of the hard 2-to-2 scattering which includes the beam and the jet directions. A significant underlying event activity increase with the jet transverse momentum is reported, confirming the so called "Pedestal Effect". A factor two increase of the Underlying activity is observed at 7 TeV with respect to 900 GeV. These studies allow to discriminate between various QCD Monte Carlo models which correctly reproduce the Tevatron Underlying Event phenomenology but achieve different predictions at different energies. The knowledge of some key aspects of the models is improved, in particular for what concerns the energy dependency of the phenomenological parameters regulating the minimal scale of the Multiple Parton Interactions.

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**Track Classification:** 03 - Perturbative QCD, Jets and Diffractive Physics