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Measurement of the Underlying Event Activity in pp collisions at $\sqrt{s} = 0.9$ TeV and 7 TeV MOHAMMED ZAKARIA, U of Florida, CMS COLLABORATION — A measurement of the underlying activity in scattering processes with a p_T scale of several GeV/c is performed in proton-proton collisions at $\sqrt{s} = 7$ TeV using corrected data collected by the CMS experiment at the LHC. The production of charged particles is studied with reference to the azimuthal direction of the leading track-jet with $|\eta| < 2$ and $p_T > 0.5$ GeV/c. A significant increase of the average number of charged particles and of the average scalar p_T sum is observed followed by a saturation at large values of the p_T scale. A significant growth of the activity in the transverse region is observed when increasing the leading track-jet cut for the same energy or when increasing the energy from $\sqrt{s} = 0.9$ TeV to $\sqrt{s} = 7$ TeV. Various PYTHIA based QCD-inspired models are compared with the data after full detector simulation.

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