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Soft QCD measurements with the CMS experiment

A measurement of the underlying event activity in pp collisions is performed using events with a leading charged particle or charged particle jet produced at central pseudorapidity and of transverse momentum in the range of 1 to 100 GeV. The underlying event activity is measured independently in the two halves of the transverse region with the maximum as well as minimum activities. The results obtained from pp collisions at center-of-mass energies of 0.9, 2.76 and 7 TeV are presented and compared to model predictions. In addition, some of the highlights in the small-x QCD and forward physics programme in terms of testing QCD at low-pt and at high pseudorapidities with jets and charged particles are summarized. Also extremely rare processes, as the measurement of exclusive W-pair production in photon-photon collisions in pp data are discussed. The range of physics results is complemented with studies of diffractive collisions, as well as of multi-parton interaction and soft-QCD phenomena. An outlook to the prospects at 13 TeV is given.

Author: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

Presenter: MEYER, Arnd (Rheinisch-Westfaelische Tech. Hoch. (DE))

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