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Double parton scattering and exclusive hadron productions in CMS

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Double parton scattering (DPS) is investigated using a states of a Z boson and jets, and of four jets, with CMS proton collisions data at 13 TeV. Final state distributions are studied as functions of several observables that exploit correlations between the jets, and the Z boson, with sensitivity to different aspects of the underlying event, parton shower, and matrix element calculations. Values of the effective DPS cross section are calculated and discussed. The central exclusive production of charged hadron pairs in pp collisions at a center- of-mass energy of 13 TeV is also examined with the CMS experiment. Differential cross sections as functions of the polar scattering angle of the incoming protons and several squared four-momenta are measured in a wide region of scattered proton transverse momenta. The dynamics of nonresonant continuum is determined and compared to models.

Collaboration / Activity

CMS

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