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Observation of Multiple Parton Scattering at High Energy Proton-Proton Collisions

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Observation of Multiple Parton Scattering at High Energy Proton-Proton Collisions

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Multiple parton scattering “MPS” occurs when two or more independent identified hard particle from each proton takes place in the same proton-proton collision. Multiparton scattering mechanism got a new interest at the large hadron collider ‘LHC’, where much higher collision energies available. The field has received a new impulse and several experimental and theoretical studies address the problem of pinning down MPS effects. We perform an investigation of double and triple parton scattering.

A generic expression to compute double and triple parton scattering in high energy proton- proton (pp) collisions is presented as a function of the corresponding single parton cross sections and the transverse parton distribution in the proton and effective cross-section parameter in double and triple parton scattering.

The framework to compute the cross sections for the production of particles “Associate Higgs boson with bottom quarks, like charge W production ...” with high mass and/or large transverse momentum in double DPS, triple TPS; and in general n-parton scatterings from the corresponding single parton scattering cross section value in high energy proton- proton collisions are reviewed.

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