



Contribution ID: 40

Type: **Parallel talks**

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

Friday 21 July 2023 15:00 (20 minutes)

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

M. Y. Hussein

Search Center

Shaikh Ebrahim Bin Mohammed Al-Khalifa Center for Culture and Research

Muharraaq, P.O Box 13725

Kingdom of Bahrain

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.

Author: MUSTAFA, Mohammad

Presenter: MUSTAFA, Mohammad

Session Classification: Higgs theory and experiment

Track Classification: Higgs theory and experiment