

Contribution ID: 9

Type: Parallel session talk

χ_c and χ_b meson produciton in high multiplicity events

Wednesday 28 July 2021 11:15 (15 minutes)

Recently studies of the heavy J/ ψ and D-mesons by ALICE and STAR collaborations revealed a pronounced dependence of the cross-section on multiplicity of co-produced charged particles, and one of the possible explanations of this phenomenon is the enhanced contribution of multipomeron configurations. In this talk we present our theoretical results for the production of P-wave quarkonia (χ_c and χ_b mesons) in proton-proton collisions. We expect that, due to different quantum numbers, the χ_c and χ_b meson production cross-section does not get contributions from 3-pomeron fusion, and for this reason the multiplicity dependence of the cross-section should be significantly milder than that of J/ ψ and D-mesons. We expect that the experimental confirmation of this result could constitute an important test of our understanding of multiplicity enhancement mechanisms in the production of different quarkonia states. We also present detailed production cross-sections in kinematics of ongoing experiments at LHC and RHIC.

This presentation is partially based on our recent publication [Eur.Phys.J.C 80 (2020) 6, 560] and arXiv submission https://arxiv.org/abs/2012.08284

First author

Marat Siddikov

Email

Marat.Siddikov@usm.cl

Collaboration / Activity

UTFSM

Primary authors: Dr SIDDIKOV, Marat (Federico Santa Maria Technical University (UTFSM)); Prof. SCHMIDT, Ivan (Federico Santa Maria Technical University (UTFSM))

Presenter: Dr SIDDIKOV, Marat (Federico Santa Maria Technical University (UTFSM))

Session Classification: T06: QCD and Hadronic Physics

Track Classification: QCD and Hadronic Physics