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Multiplicity dependence of quarkonia and open heavy flavour mesons

Thursday 10 September 2020 17:20 (25 minutes)

In this talk we present our theoretical results for the multiplicity dependence of open heavy flavour mesons (D- and B-mesons) and prompt quarkonia production in pp collisions. For the quarkonia production we found that rapidly growing multiplicity dependence could be interpreted as a strong evidence in favor of multigluon fusion contributions in production of the quarkonia states, and demonstrate that the 3-gluon fusion can describe the recent data on multiplicity from STAR and ALICE collaborations. We also demonstrate that 2-gluon fusion approaches predict milder dependence on multiplicity, at tension with data. We also analyze the role of the 3-gluon contributions for the case of open heavy meson production and find that they are pronounced, especially for D-mesons at small transverse momenta p_T. Their inclusion improves agreement with experimental data. However, the corrections have midler effect on observed multiplicity dependence (compared to that of quarkonia) due to partial compensation of multiplicity dependence of certain process-specific interference contributions. These findings are in agreement with data from ALICE.

This presentation is partially based on our recent publications Phys.Rev.D 101 (2020) 9, 094020 and Eur.Phys.J.C 80 (2020) 6, 560.

Is this abstract from experiment?

No

Internet talk

Yes

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

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