Contribution ID: **201** Type: **Oral presentation**

Diffractive production of open charm and bottom at the LHC

Wednesday, 30 April 2014 09:45 (25 minutes)

We discuss diffractive production of open charm and bottom mesons at the LHC [1].
The differential cross sections for single- and central-diffractive mechanisms for $c\bar{c}$ and $b\bar{b}$ pairs
are calculated in the framework of the Ingelman-Schlein model corrected for absorption effects to include Regge
factorization breaking observed at the Tevatron.
In this approach one assumes that the pomeron has a well defined partonic structure, and that the hard process takes
place in a pomeron-proton or proton-pomeron (single diffraction) or pomeron-
pomeron (central diffraction) processes. Here, only the LO gluon-gluon
fusion partonic subprocess is taken into consideration, which is calculated within
simple collinear approximation. Both pomeron flux factors as well as parton distributions in the
pomeron are taken from the H1 Collaboration analysis of diffractive
structure function and diffractive dijets at HERA. The sub-leading corrections from reggeon type exchanges are
explicitly calculated and also taken into consideration. Several quarks-level differential distributions are shown.
The results are compared to the results of gluon disociation mechanism in the k_t-factorization approach [2]
The hadronization of charm and bottom quarks is taken into account by means of fragmentation function technique.
Predictions for single- and central-diffractive production in the case of inclusive D and B mesons,
as well as $D\bar{D}$ correlations are presented, including detector acceptance of the ATLAS, CMS and LHCb Collaborations.
The experimental
aspects of possible standard and dedicated measurements are carefully discussed.

[1] M. Luszczak, R. Maciula and A. Szczurek, a paper in preparation.
[2] M. Luszczak, W. Schafer and A. Szczurek, Phys. Lett. B729 (2014)15.

Primary author: LUSZCZAK, Marta (University of Rzeszow)

Presenter: LUSZCZAK, Marta (University of Rzeszow)

Session Classification: WG5: Heavy Flavours

Track Classification: WG5: Heavy Flavours