Contribution ID: 30

Type: not specified

## Production of the Exotic 1–– Hadrons ⊠(2170), X(4260) and Yb(10890) at the LHC and Tevatron via the Drell-Yan Mechanism

We calculate the Drell-Yan production cross sections and differential distributions in the transverse momentum and rapidity of the  $J^{PC} = 1^{--}$  exotic hadrons  $\phi(2170)$ , X(4260) and  $Y_b(10890)$  at the hadron colliders LHC and the Tevatron. These hadrons are tetraquark (four-quark) candidates, with a hidden  $s\bar{s}$ ,  $c\bar{c}$  and  $b\bar{b}$  quark pair, respectively. In deriving the distributions and cross sections, we include the order  $\alpha_s$  QCD corrections, resum the large logarithms in the small transverse momentum region in the impact-parameter formalism, and use the state of the art parton distribution functions. Taking into account the data on the production and decays of these vector hadrons from the  $e^+e^-$  experiments, we present the production rates for the processes  $pp(\bar{p}) \rightarrow \phi(2170)(\rightarrow \phi(1020)\pi^+\pi^- \rightarrow K^+K^-\pi^+\pi^-) + ..., pp(\bar{p}) \rightarrow X(4260)(\rightarrow J/\psi\pi^+\pi^- \rightarrow \mu^+\mu^-\pi^+\pi^-) + ..., and <math>pp(\bar{p}) \rightarrow Y_b(10890)(\rightarrow (\Upsilon(1S), \Upsilon(2S), \Upsilon(3S))\pi^+\pi^- \rightarrow \mu^+\mu^-\pi^+\pi^-) + ....$  Their measurements at the hadron colliders will provide new experimental avenues to explore the underlying dynamics of these hadrons.

Primary authors: Prof. ALI, Ahmed (DESY); Dr WANG, Wei (DESY)

Presenter: Dr WANG, Wei (DESY)