

XXVIII International Workshop on Deep Inelastic Scattering and Related Subjects



Contribution ID: 231

Type: **Contributed Talk**

Statistical combination of searches for the $X(5568)$ state decaying into $B_s^0 \pi^\pm$.

Tuesday, March 24, 2020 3:36 PM (22 minutes)

A statistical combination of the search results for the $X(5568)$ resonance decaying into B_s is reported, based on published results from the ATLAS, CMS, CDF and LHCb Collaborations.

A narrow structure in the invariant mass distribution of $B_s^{0\pm}$ has been observed by the D0 Collaboration with a mass value of 5568 MeV but not confirmed by any of the latest searches from the other Collaborations.

CDF and the LHC experiments have set limits on χ , the relative production rate of the $X(5568)$ and B_s^0 states times the branching ratio for the $X(5568) \rightarrow B_s^{0\pm}$ decay.

By applying a statistical combination of limits set by the three LHC experiments, we derive a limit, at 95% Confidence Level, of $\chi < 0.92\%$ for $p_T(B_s^0) > 10$ GeV, and $\chi < 0.91\%$ for $p_T(B_s^0) > 15$ GeV, which represent the most stringent upper limits up to present.

The talk will review the experimental results from Tevatron and LHC, will describe the combination procedure and the obtained results. The effect of including the results from Tevatron experiments in the statistical combination will also be discussed.

Primary author: IENGO, Paolo (CERN)

Presenter: IENGO, Paolo (CERN)

Session Classification: QCD with Heavy Flavors and Hadronic Final States

Track Classification: QCD with Heavy Flavors and Hadronic Final States