

Observation of multiple structures in the $J/\psi J/\psi$ mass spectrum at CMS

Thursday, 20 April 2023 14:00 (30 minutes)

A search for low-mass structures in the $J/\psi J/\psi$ mass spectrum produced by proton-proton collisions at $\sqrt{s} = 13$ TeV is performed at the CMS experiment. The data sample corresponds to an integrated luminosity of 135 fb^{-1} collected by the CMS at the CERN LHC. The previously observed $X(6900)$ by LHCb is confirmed in this study, and a new structure at a lower mass is observed. Both structures have a significance well above 5 standard deviations. Evidence for a third structure around 7.2 GeV is found with a local significance of 4 sigma.

Primary author: Prof. HU, Zhen (Tsinghua University)

Presenter: Prof. HU, Zhen (Tsinghua University)

Session Classification: Talks