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Evidence of Narrow Structure in the $J/\psi\phi$ Mass Spectrum in Exclusive $B^+ \rightarrow J/\psi\phi K^+$ decay at CMS MAKSAT HAYTMYRADOV, CMS, CMS COLLABORATION — Analysis of heavy quarkonium states provides an effective method to test QCD predictions. Recent studies on these mesons show that there are states which have decay modes similar to charmonium, but are difficult to put in a charmonium system. There have been several proposals explaining these states as hybrid($q\bar{q}g$) or four-quark ($q\bar{q}q\bar{q}$) exotic mesons. Discoveries such as the X(3872) and Y(3940) motivated examination of other VV states. Observation of Y(4140) at CDF detector further inspired to search for the same structure at CMS detector. In this analysis the $J/\psi\phi$ channel was studied through the exclusive decay of $B^\pm \rightarrow J/\psi\phi K^\pm$, where $J/\psi \rightarrow \mu^-\mu^+$ and $\phi \rightarrow K^+K^-$. The analysis was conducted on pp collision data at $\sqrt{s} = 7\text{TeV}$ collected by the CMS detector. We report on two narrow structures with masses around 4148 and 4317 GeV in $J/\psi\phi$ mass spectrum which are well above the threshold for $c\bar{c}$ charmonium decays.

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None

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