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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, Graduate Student, 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. Observation of Y(4140) at CDF detector inspired to search for the same structure at CMS detector. In this analysis we report the observation of two structures in the $J/\psi\phi$ mass spectrum of exclusive $B^+ \rightarrow J/\psi\phi K^+$ decays, where $J/\psi \rightarrow \mu^- \mu^+$ and $\phi \rightarrow K^+ K^-$. The analysis was conducted on pp collision data at $\sqrt{s} = 7$ TeV using 5.2 fb^{-1} of integrated luminosity collected with CMS detector at Large Hadron Collider. Interpretation of structures as $J/\psi\phi$ resonances with S-wave relativistic Breit-Wigner shape over phase-space non-resonant component resulted in significance of 5σ for the first structure and evidence for the second structure. Fitted masses of structures are $M_1 = 4148.2 \pm 2.0(\text{stat}) \pm 4.6(\text{syst})$ MeV and $M_2 = 4316.7 \pm 3.0(\text{stat}) \pm 7.3(\text{syst})$ MeV.

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