

## Observation of $B^+ \rightarrow \psi(2S)\phi K^+$

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The high luminosity and large cross section for b-quark production at the LHC makes possible the observation and study of many rare B meson decays. Recently, CMS reported on the presence of substructures in the known decay  $B^+ \rightarrow J/\psi\phi K^+$ . As part of that investigation, the final state  $B^+ \rightarrow \psi(2S)\phi K^+$ , with  $\psi(2S) \rightarrow \mu^+\mu^-$  and  $\phi \rightarrow K^+K^-$  was also observed. We report the signal, with a significance of over 5 standard deviations using 19.6 fb<sup>-1</sup> data collected at  $\sqrt{s} = 8$  TeV at CMS, and its branching fraction measurement.

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