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Observation of the $\Lambda(0)(b) \rightarrow J/\psi \Lambda \phi$ decay in proton-proton collisions at root $s=13$ TeV

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Abstract

The observation of the $\Lambda(0)(b) \rightarrow J/\psi \Lambda \phi$ decay is reported using proton-proton collision data collected at root $s = 13$ TeV by the CMS experiment at the LHC in 2018, corresponding to an integrated luminosity of 60 fb⁻¹. The ratio of the branching fractions $B(\Lambda(0)(b) \rightarrow J/\psi \Lambda \phi) / B(\Lambda(0)(b) \rightarrow \psi(2S) \Lambda)$ is measured to be $(8.26 \pm 0.90 \text{ (stat)} \pm 0.68 \text{ (syst)} \pm 0.11 \text{ (B)}) \times 10^{-2}$, where the first uncertainty is statistical, the second is systematic, and the last uncertainty reflects the uncertainties in the world-average branching fractions of ϕ and $\psi(2S)$ decays to the reconstructed final states. (C) 2020 The Author. Published by Elsevier B.V.

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