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The $\Lambda_b \rightarrow J/\psi K^0 \Lambda$ and Λ_b into $J/\psi \eta \Lambda$ reactions and a hidden-charm pentaquark state with strangeness

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We study the $\Lambda_b \rightarrow J/\psi K0 \Lambda$ reaction considering both the K0 Λ interaction with its coupled channels and the J/ $\psi\Lambda$ interaction. The latter is described by taking into account the fact that there are predictions for a hidden-charm state with strangeness that couples to J/ $\psi\Lambda$. By using the coupling of the resonance to J/ $\psi\Lambda$ from these predictions we show that a neat peak can be observed in the J/ $\psi\Lambda$ invariant mass distribution, rather stable under changes of unknown magnitudes. In some cases, one finds a dip structure associated to that state, but a signal of the state shows up in the J/ ψ spectrum. The same is done by studying the related $\Lambda_b \rightarrow J/\psi\eta\Lambda$ rreaction, by combining the $\eta\Lambda$ and J/ $\psi\Lambda$ interactions.

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