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Ground state mass of Ξ_{bc}^0 baryon in Regge phenomenology

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Recently, in 2020 the LHCb Collaboration searches a new doubly heavy Ξ_{bc}^{0} baryon decaying into $D^{0}pK^{-}$ having mass in the range from 6.7 - 7.2 GeV/c^{2} . To study the properties of Ξ_{bc}^{0} baryon (dcb) containing two different heavy quarks gives an ideal platform to understand the hadron spectroscopy and Quantum Chromodynamics (QCD). Under the Regge phenomenology, we have derived relations between intercept, slope ratios, and baryon masses. With the aid of these relations, we estimated the ground state mass of the newly observed Ξ_{bc}^{0} baryon. Our calculated ground state mass is in consistent with experimentally observed mass and also reasonably close to other theoretical predictions. Our prediction could provide useful information in future experimental searches.

Is this abstract from experiment?

No

Name of experiment and experimental site

NA

Is the speaker for that presentation defined?

Yes

Details

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Internet talk

Yes

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