

Properties of doubly heavy baryons

пятница, 13 ноября 2020 г. 14:00 (30)

The two heavy quark combinations cc , bb and bc unifies with s quark in case of three doubly heavy Ω baryons, while for six doubly heavy Ξ baryons light quarks u or d are combined. The ground, radial, and orbital states are calculated in the framework of the hypercentral constituent quark model with Coulomb plus linear potential. The different approaches and their predicted masses of these heavy baryons are mentioned and compared, thus, the average possible range of excited states masses of these baryons can be determined. Recently, the LHCb collaboration reported the mass of Ξ_{cc}^{++} as a ground state. The Regge trajectory is constructed in both the (n, M^2) and the (J, M^2) planes for all doubly heavy baryons and their slopes and intercepts are also determined. Magnetic moments and decay properties of doubly heavy baryons are also discussed.

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Session Classification : Session 11: Heavy quarks

Track Classification : Physics of heavy quarks