A fundamental approach to hybrid states

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Abstract

Recent lattice results for the energy of gluonic excitation as a function of quark separation are shown to correspond to transverse relativistic flux tube vibration modes. For large quark separations all states appear to degenerate into a few categories which are predicted uniquely given the ground state. Encouraged by the success of the fixed end result we have considered the case of a rotating and vibrating flux tube starting from a Nambu–Goto action. We believe that this approach will evolve into a basic understanding of the properties of hybrid mesons.