



Contribution ID: 10

Type: **Talk**

The molecular nature of some exotic hadrons

Monday 2 September 2019 12:25 (35 minutes)

The exciting discovery by LHCb of the $P_c(4380)$ and $P_c(4450)$ pentaquarks, or the suggestion of a tetraquark nature for the $Z_c(3900)$ state seen at BESIII and Belle, have triggered a lot of activity in the hadron physics field, with new experiments planned for searching other exotic mesons and baryons, and many theoretical developments trying to disentangle the true multi-quark nature from their possible molecular origin. After a brief review of the present status of these searches, in this talk I will present a theoretical model that points towards the possible interpretation of some of the Ω_c states recently seen at LHCb as being hadron molecules. The model also predicts the existence of quasibound meson-baryon Ξ_{cc} states, which would be excited states of the recently observed ground-state double-charmed baryon, with a mass of 3261 MeV, by LHCb. Predictions of the model for the bottom sector will also be discussed.

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Session Classification: Plenary Session 2 Monday

Track Classification: Plenary