



Contribution ID: 107

Type: **Leading parallel**

Molecular Ω_c states generated from coupled meson-baryon channels

Wednesday, 21 August 2019 08:30 (25 minutes)

We have investigated Ω_c states that are dynamically generated from the meson-baryon interaction. We use an extension of the local hidden gauge to obtain the interaction from the exchange of vector mesons. We show that the dominant terms come from the exchange of light vectors, where the heavy quarks are spectators. This has as a consequence that heavy quark symmetry is preserved for the dominant terms in the $(1/m_Q)$ counting, and also that the interaction in this case can be obtained from the SU(3) chiral Lagrangians. We show that for a standard value for the cutoff regulating the loop, we obtain two states with $J^P = 1/2^-$ and two more with $J^P = 3/2^-$, three of them in remarkable agreement with three experimental states of LHCb in mass and width. We also make predictions at higher energies for states of vector-baryon nature.

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Session Classification: Session 3: Exotic hadrons and candidates

Track Classification: Session 3: Exotic hadrons and candidates