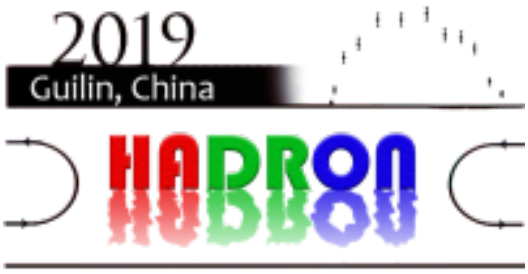

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Strong decays of the latest LHCb pentaquark candidates in hadronic molecule pictures

Tuesday, 20 August 2019 15:05 (21 minutes)

We investigate the observed pentaquark candidates $P_c(4312)$, $P_c(4440)$ and $P_c(4457)$ from the latest LHCb measurement, as well as four possible spin partners in the $\bar{D}^{(*)}\Sigma_c^*$ system predicted from the heavy quark spin symmetry with the hadronic molecule scenarios. Similar to the previous calculation on $P_c(4380)$ and $P_c(4450)$, the partial widths of all the allowed decay channels for these P_c states are estimated with the effective Lagrangian method. The cutoff dependence of our numerical results are also presented. Comparing with the experimental widths, our results show that $P_c(4312)$, $P_c(4440)$ and $P_c(4457)$ can be described well with the spin-parity-$1/2^-$-$\bar{D}\Sigma_c$, $1/2^-$-$\bar{D}^*\Sigma_c$ and $3/2^-$-$\bar{D}^*\Sigma_c$ molecule pictures, respectively.

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