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The $\bar{B}^{(*)}\bar{K}^{(*)}$ -coupled-channel system in the hidden-gauge approach

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In this work we provide predictions for bottom-strange molecular states within the Hidden Gauge Formalism. We study the coupled-channel scattering of $B^{(*)}\bar{K}^{(*)}$ states and, by fixing only one free parameter to obtain the mass of a new excited B_s^0 state seen by the LHCb, we predict the pole parameters of six states in this sector. Concretely, we get that the masses of the flavor partners of the $D_{s0}(2317)$ and $D_{s1}(2460)$ states in the bottom sector are 5760 and 5802 MeV for the $B\bar{K} (J^P = 0^+)$ and $B^*\bar{K} (1^+)$ states, respectively. Moreover, the recently seen states by the LHCb with masses around 6100 and 6160 MeV can be interpreted as $B\bar{K}^*$ and $B^*\bar{K}^*$ molecular states, according to reasonable values of the pole parameters and the splitting between these two states obtained in our calculation.

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