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Relativistic description of asymmetric fully heavy tetraquarks

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Masses of the ground and excited states of asymmetric fully heavy tetraquarks with open charm and/or bottom are calculated within the relativistic quark model, based on the quasipotential approach and QCD, and diquark-antidiquark picture of tetraquarks. The relativistic diquark-antidiquark interaction quasipotential takes into account the internal structure of the diquark and all spin-dependent and spin-independent relativistic corrections. It is shown, that there is a significant mixing between the asymmetric in flavor states of tetraquarks with the same total momentum-parity (J^P), but different full spins of the tetraquark (S) within the same excitation. The calculated masses of such tetraquarks are compared with the fall-apart decay thresholds into a pair of heavy mesons. The states that could be observed as narrow resonances are determined.

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