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Exotic states and their properties from QCD sum rules

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We show that the correlation functions involving exotic tetra- and penta-quark currents in QCD have fundamentally different properties compared with the correlation functions of the bilinear quark current, the interpolating currents for the normal hadrons. Taking into account the fact, that the exotic currents of different structures may be used as the interpolating currents for one and the same exotic hadron, we derive a number of rigorous self-consistency conditions which lead to the selection of the appropriate diagrams for constructing QCD sum rules for the exotic states. We demonstrate that the calculation of the radiative corrections is mandatory for a consistent sum-rule analysis of the exotic states.

Experimental Collaboration

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