

Abstract Submitted
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Non-interacting KN contribution in the QCD sum rule for the pentaquark Θ^+ (1540) YOUNGSHIN KWON, ATSUSHI HOSAKA, Research Center for Nuclear Physics, Osaka Univ., Japan, SU HOUNG LEE, IPAP, Yonsei Univ., Korea — We perform a QCD sum rule analysis for the pentaquark baryon Θ^+ with the non-interacting KN contribution treated carefully. The coupling of the Θ^+ current to the KN state is evaluated by applying the soft kaon theorem and vacuum saturation. When using a five-quark current including scalar and pseudo-scalar diquarks, the KN contribution turns out not to be very important and the previous result of the negative parity Θ^+ is reproduced again. The Borel analysis of the correlation function for Θ^+ with the KN continuum states subtracted yields the mass of the $J^P = 1/2^-$ Θ^+ around 1.5 GeV.

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