

Excited QCD 2013

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Book of Abstracts

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Scalar mesons and tetraquarks from twisted mass lattice QCD

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We study the light scalar mesons $a_0(980)$ and κ using $N_f = 2+1+1$ flavor twisted mass lattice QCD. In order to probe the internal structure of these scalar mesons, and in particular to identify, whether a sizeable tetraquark component is present, we use a large set of operators, including diquark-antidiquark, mesonic molecule and two-meson operators. We find that the low-lying states overlap essentially exclusively with two-meson states. This indicates that in the channels investigated no tightly bound four quark states of either molecular or diquark-antidiquark type exist.

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