



Contribution ID: 113

Type: **Talk**

Systematic study of operator dependence in nucleus calculation at large quark mass

Thursday, July 28, 2016 5:10 PM (20 minutes)

Recently it was raised a possibility that calculation of the nucleus correlation functions suffers from a significant systematic error due to excited state contributions depending on the choice of the source operator. In order to investigate the operator dependence of the nucleus correlation functions, we have performed a high precision calculation employing the exponential smeared and wall operators at 0.7 GeV pion mass in 2+1 flavor QCD, and 0.8 GeV pion mass in quenched QCD.

We present preliminary results and discuss the systematic errors caused by the choice of the source operator.

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Session Classification: Hadron Spectroscopy and Interactions

Track Classification: Hadron Spectroscopy and Interactions