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Using a new analysis method to extract excited states in the scalar meson sector

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We present an alternative method to the Generalized Eigenvalue Problem (GEVP) for extracting excited states. The method is based on statistically sampling the space of possible set of parameters according to the χ^2 -value of each set of values.

This method is particularly suited when one has noisy data as is the case for some correlators at large times such as in the scalar light qqbar channel. We will apply this method to the analysis of the $J^P = 0^+$ channels used in the search for

the a_0 particle and compare the results to the standard GEVP approach, pointing out advantages and disadvantages of the method compare to the GEVP approach.

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