

# “Excited State Spectroscopy and Meson-Meson Scattering from Lattice QCD”

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Due to the nature of the strong interaction (QCD), studying the low-lying QCD spectrum remains a difficult task. Lattice QCD allows us to probe the low-lying states of the theory using first principles numerical calculations.

Using large bases of one- and two-hadron interpolating operators we study the excited state spectrum of QCD in finite-volume. The  $q$ - $\bar{q}$  content of the spectrum is assessed in a number of symmetry channels. Preliminary results for the scalar glueball and it's mixing with nearby meson-meson states will also be presented.

Elastic  $I=1/2$ ,  $s$ - and  $p$ -wave  $K\pi$  scattering phase-shifts at varying quark masses will also be presented. Partial wave mixing induced by the finite-volume is included for  $l < 2$ .

