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The excited hadron spectrum in lattice QCD using a new variance reduction method

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Progress in determining the spectrum of excited baryons and mesons in lattice QCD is described. Large sets of carefully-designed hadron operators have been studied and their effectiveness in facilitating the extraction of excited-state energies is demonstrated. A new method of stochastically estimating the low-lying effects of quark propagation is proposed which will allow reliable determinations of temporal correlations of single-hadron and multi-hadron operators.

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