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Type: Long Talk (20 mins)

DK scattering and an exotic pole at the $SU(3)$ flavour point using lattice QCD

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With perturbative QCD unable to explain the phenomenon of confinement and predict the spectrum/dynamics of hadrons that comes with it, an alternative framework must be used. Lattice QCD along with the two-particle finite-volume formalism can be used to obtain scattering amplitudes non-perturbatively, whose analytic structure yields information about hadronic resonances.

In this talk, I will discuss my recent project using this formalism to investigate DK scattering in the $J^P = 0^+$ open-charm sector with $SU(3)$ flavour symmetry. By considering equal up, down, and strange quark masses, the pole structure of this sector can be resolved into different $SU(3)$ flavour irreps and studied. We find a pole in the conventional flavour irrep consistent with quark model predictions and interesting physics in an exotic flavour sector.

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Lattice QCD

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Session Classification: Lattice Physics