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Open-charm axial-vector and tensor meson resonances from Lattice QCD

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The spectroscopy of open-charm mesons offers new insights into the dynamics of low-energy QCD and a point to connect with both experiment and EFT calculations.

In this talk I present the first extraction of the lowest axial-vector and tensor D-meson resonances from a coupled $D^*\pi$, $D^*\eta$ and $D_s^*\bar{K}$ scattering calculation in $N_f = 2 + 1$ lattice QCD at a pion mass of 391 MeV. The spectrum is computed from a large basis of interpolating operators using distillation and the generalised-eigenvalue method. A finite-volume quantisation condition constrains the S- and D-wave amplitudes which are analytically continued to the complex plane and examined for singularities. I discuss our findings in the context of experiment and unitarised-chiral-perturbation theory results.

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