

XVth Quark Confinement and the Hadron Spectrum



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Charm mesons, charmonium resonances and exotics from lattice QCD

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I will summarise some recent work on charm mesons and charmonium resonances, including exotics, using first-principles lattice QCD calculations. Investigations of S-wave $D\pi$ scattering will be presented, relevant for the $D_0^*(2300)$ and the enigmatic $D_{s0}^*(2317)$, where an exotic-flavour virtual bound state was found. Of other results that will be discussed, a highlight is a study of scalar and tensor charmonium resonances where a single χ_{c0} and a single χ_{c2} resonance were found in the energy region up to about 4100 MeV. Above the χ_{c0} ground state, no other scalar bound states or near- $D\bar{D}$ threshold resonances were found, in contrast to a number of theoretical and experimental studies. I will also comment on future prospects.

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