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The formalism to study the Tcc from lattice QCD

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In this talk, I discuss progress developing and applying the relativistic field-theoretic three-particle finite-volume scattering formalism to systems of nondegenerate mesons. In particular, I focus on the recently developed formalism for $DD\pi$ systems in the charm C = 2 sector. This includes the isospin-0 channel, in which the recently discovered doubly-charmed tetraquark $T_{cc}(3875)^+$ is expected to manifest as a pole in the $DD\pi \to DD\pi$ scattering amplitude. The formalism presented here can also be applied to lattice QCD settings in which the D^* is bound and, in particular, remains valid below the left-hand cut in DD^* scattering, thus resolving an issue in previous analyses of lattice-determined finite-volume energies.

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