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Three-particle formalism for multiple channels: the ηππ + KKπ system in isosymmetric QCD

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We generalize the three-particle finite-volume formalism to allow for multiple three-particle channels, focussing on the two-channel ηππ and (positive G-parity sector of the) KKπ system in isosymmetric QCD. The formalism we obtain is thus appropriate to study the b1(1235) and η(1295) resonances. The derivation is made in the generic relativistic field theory approach using the time-ordered perturbation theory method. We study how the resulting quantization condition reduces to that for a single three-particle channel when one drops below the upper (KKπ) threshold. This work was done in collaboration with Zachary T. Draper.

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