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Meson interaction and resonance formation in the reaction Ds -> pi+ pi+ pi- eta

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We perform a theoretical study of the D+s $\longrightarrow \pi+\pi+\pi-\eta$ decay. We look first at the basic D+s decay at the quark level from external and internal emission. Then hadronize a pair or two pairs of qq^- states to have mesons at the end. Posteriorly the pairs of mesons are allowed to undergo final state interaction, by means of which the
a0(980), f0(980), a1(1260), and b1(1235) resonances are dynamically generated. The G-parity is used as a filter of the possible channels, and from those with negative G-parity only the ones that can lead to $\pi+\pi+\pi-\eta$ at the final state are kept. Using transition amplitudes from the chiral unitary approach that generates these resonances, and a few free parameters, we obtain a fair reproduction of the six mass distributions reported in a BESIII experiment.

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Classifica Sessioni: Hadron decays, production and interaction

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