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$\eta' \to \eta\pi\pi$ decays within one-loop $U(3)$ resonance chiral theory and its unitarisation

Summary

In this work we examine the hadronic $\eta' \to \eta\pi\pi$ decays.
Our study is carried out within the framework of $U(3)_L \otimes U(3)_R$ ChPT including, for the first time, both the complete one-loop corrections and resonances states.
The amplitude is projected in partial waves and unitarised by means of the N/D method resumming $\pi\pi$ and $\pi\eta$ final state interactions.
Our parameterization is suited to obtain, from fits to experimental data, the corresponding Dalitz plot parameters as well as to determine the parameters, mass and width, of the participating scalar resonances driving the decay.

Primary author: Dr GONZÀLEZ-SOLÍS, Sergi (Institute of Theoretical Physics (CAS))

Presenter: Dr GONZÀLEZ-SOLÍS, Sergi (Institute of Theoretical Physics (CAS))