

# Dispersive Analysis of Mesonic 3-Body Decays

*Friday, 16 March 2018 10:00 (30 minutes)*

I will present a dispersive analysis of mesonic 3-body decay amplitudes based on the fundamental principles of analyticity and unitarity. In this framework the leading final-state interactions are fully taken into account.

The first part of the talk will focus on the  $\eta' \rightarrow \eta\pi\pi$  decay channel [arXiv:1705.04339 [hep-ph]]. This decay offers several features of interest: due to final-state interactions it can be used to constrain  $\eta\pi$  scattering. The neutral channel ( $\eta' \rightarrow \eta\pi^0\pi^0$ ) shows a cusp effect within the physical decay region. It is also an essential input for a study of inelastic effects in the decay  $\eta' \rightarrow 3\pi$ .

The second part of the talk is focused on the  $\omega \rightarrow 3\pi$  decay. I will demonstrate how the dispersive framework can be used to investigate the quark mass dependence for a 3-body resonance. This can serve as extrapolation tool for lattice QCD calculations. Here the  $\omega$  serves as paradigm case, the framework can be generalised to other 3-body decay processes.

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