

Probing low-energy QCD and BSM physics with light meson decays

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Hadronic and radiative decays of light mesons offer a privileged environment to test QCD and search for physics beyond the Standard Model.

A new generation of precision experiments in hadron physics will soon offer new data that will have an impact on determinations of fundamental QCD parameters, such as the ratio of light quark masses or the η - η' mixing parameters, and provide important test of chiral symmetry breaking in QCD.

This new data will also provide sensitive probes to test potential new physics including searches for dark photons, light scalars and axion-like particles that will complement worldwide efforts to detect new light particles in the MeV-GeV mass range.

In this talk, I will give an update on the theoretical developments and discuss the experimental opportunities in this field, paying particular attention to the sensitivity of the η and η' mesons to leptophobic vector bosons and ALPs.

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