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A theoretical analysis of the semileptonic decays $\eta^{(\prime)} \to \pi^0 l^+ l^-$ and $\eta' \to \eta l^+ l^-$

A theoretical analysis of the C-conserving semileptonic decays $\eta^{(\prime)} \rightarrow \pi^0 l^+ l^-$ and $\eta' \rightarrow \eta l^+ l^-$ (l = e or) is carried out within the framework of the Vector Meson Dominance model. A phenomenological model is then used to parametrise the VMD couplings and numerical values are obtained from an optimisation fit. The signature of CP-violating operators from the SMEFT on experimental observables is also investigated and quantified for the $l = \mu$ case.

Primary authors: ROYO, Emilio (U); ESCRIBANO, Rafel (Universitat Autonoma de Barcelona)

Co-author: Dr SANCHEZ-PUERTAS, Pablo (Institut de Fisica d'Altes Energies (IFAE) and Barcelona Institute of Science and Technology (BIST))

Presenter: ROYO, Emilio (U)