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Composite resonances and their impact on the low-energy EW chiral Lagrangian

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The existence of a spectrum of composite resonances is a common feature of strongly interacting beyond-Standard-Model scenarios.
In this talk we compute the contributions from spin-0 and and spin-1 resonances to the low-energy EW non-linear effective theory (with the EW Goldstones non-linearly realized). We study the contributions to both the purely bosonic terms and to higher-dimension operators including also fermion fields. Based on a custodial symmetry pattern we write down the most general resonance Lagrangian contributing to the low-energy EW chiral Lagrangian at NLO. We consider both parity preserving and parity violating terms. Finally, we assume definite UV completion hypotheses in our resonance theory, such as the existence of Weinberg sum-rules and analogous asymptotic high-energy constraints, which allows us to extract predictions for the low-energy couplings. For this, a careful study of the low-energy chiral counting and the structure of the NLO custodial invariant Lagrangian is needed, as we will be explained in the talk.

Authors: PICH, Antonio; ROSELL, Ignasi (Universidad CEU Cardenal Herrera & IFIC, Valencia); Mr SANTOS BLANCO, Joaquin (Universitat de Valencia); SANZ-CILLERO, Juan Jose (Universidad Autonoma de Madrid)

Presenter: SANZ-CILLERO, Juan Jose (Universidad Autonoma de Madrid)

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