Contribution ID: **125** Type: **Parallel Talk**

Effective Field Theory and Scalar Triplet Dark Matter

Thursday, 3 December 2026 14:30 (30 minutes)

We discuss an extension of the standard model with a real scalar triplet, T, including non-renormalizable operators (NROs) up to d=6. If T is odd under a Z_2 symmetry, the neutral component of T is a good candidate for the dark matter (DM) of the universe. We calculate the relic density and constraints from direct and indirect detection on such a setup, concentrating on the differences with respect to the simple model for a DM T with only renormalizable interactions. Bosonic operators can change the relic density of the triplet drastically, opening up new parameter space for the model. Indirect detection constraints, on the other hand, rule out an interesting part of the allowed parameter space.

Academic position of the presenting author

Researcher

Primary authors: ARBELÁEZ RODRÍGUEZ, Carolina (Universidad Técnica Federico Santa María); Prof. GONZÁLEZ, Marcela (Universidad de Valparaíso); Prof. HIRSCH, Martin (IFIC); Prof. NEILL, Nicolás (Pontificia Universidad Católica de Chile); Prof. RESTREPO, Diego (Universidad de Antioquia)

Presenter: ARBELÁEZ RODRÍGUEZ, Carolina (Universidad Técnica Federico Santa María)

Session Classification: Parallel Talks-SD:716

Track Classification: Dark Matter