

## Dark matter stabilized by a non-abelian group

*Thursday 17 April 2025 10:00 (30 minutes)*

When building dark matter (DM) models, one often imposes conserved discrete symmetries to stabilize DM candidates. The simplest choice is  $Z_2$  but models with larger stabilizing groups have also been explored. Can a conserved non-abelian group lead to a viable DM model? Here, we address this question within the three-Higgs-doublet model based on the group  $\Sigma(36)$ , in which DM stabilization by a non-abelian group is not only possible but inevitable. We show that the tight connections between the Higgs, fermion, and DM sectors repeatedly drive the model into conflict with the LHC results and DM observations, with the most recent LZ results playing a decisive role.

**Presenter:** TEIXEIRA BOTO, Rafael Filipe (Instituto Superior Técnico)