

An exceptional composite dark matter candidate

Thursday, 5 April 2018 15:15 (15 minutes)

Models of composite Higgs provide a natural explanation of the hierarchy problem and a beautiful rationale for the flavor puzzle. However, they typically lack a natural DM candidate unless non-minimal setups with symmetric cosets are considered. Here, I will show an example of a non-symmetric coset - $SO(7)/G_2$ - which nevertheless provide dark pions as viable DM candidates (a scalar $SU(2)_L$ singlet or a triplet) and studied in detail their phenomenology. The relic density, as well as the expected indirect, direct and collider signals are then uniquely determined by the value of the compositeness scale, providing therefore an extremely predictive framework. This proves that non-symmetric cosets has to be considered when charting DM models.

Primary author: CARMONA BERMUDEZ, Adrian (Johannes Gutenberg Universitaet Mainz (DE))

Presenter: CARMONA BERMUDEZ, Adrian (Johannes Gutenberg Universitaet Mainz (DE))

Session Classification: Open Session C)

Track Classification: Default track