Contribution ID: **32**   Type: **Poster**

Dark matter in a Standard Model extension with additional U(1) symmetry

We consider a model with U(1)′ local gauge symmetry, additional to the Standard Model gauge symmetry, which is broken by a singlet field scalar. In addition, the scalar sector contains two doublet scalar field. One of them is the usual Standard Model doublet scalar field that breaks the electroweak symmetry, meanwhile the second one is included to introduce the Weak Interacting Massive Particle that play the role of candidate for Dark Matter. The Z_2 discrete symmetry can be considered to eliminated the interactions in the potential which do not allow the stability of the Dark Matter candidate. We solve the Boltzmann equation to find the relic density for Dark Matter as a function of the scalar potential parameters, the new symmetry breaking scale and the U(1)′ gauge coupling constant.

Authors: GAITÁN, Ricardo (Universidad Nacional Autónoma de México);   ARROYO UREÑA, Marco Antonio;   MONTES DE OCA YEMHA, José Halim (UNAM);   MARTINEZ, Roberto (Universidad Nacional de Colombia);   CABRAL ROSETTI, Luis (CIIDET)

Presenter: ARROYO UREÑA, Marco Antonio

Track Classification: STARS