Contribution ID: **42** Type: **not specified**

Production and signatures of multi-flavour dark matter scenarios

Tuesday 8 June 2021 08:50 (25 minutes)

We investigate the phenomenology of a dark matter scenario containing two generations of the dark matter particle, differing only by their mass and their couplings to the other particles, akin to the quark and lepton sectors of the Standard Model. For concreteness, we consider the case where the two dark matter generations are Majorana fermions that couple to a right-handed lepton and a scalar mediator through Yukawa couplings. We identify different production regimes in the multi-flavor dark matter scenario and we argue that in some parts of the parameter space the heavier generation can play a pivotal role in generating the correct dark matter abundance. In these regions, the strength of the dark matter coupling to the Standard Model can be much larger than in the single-flavored dark matter scenario. Correspondingly the indirect and direct detection signals can be significantly boosted. We also comment on the signatures of the model from the decay of the heavier dark matter generation into the lighter.

Author: IBARRA, Alejandro

Presenter: IBARRA, Alejandro

Session Classification: MOCa