

Sterile neutrino dark matter in the super-weak model

lundi 30 mai 2022 16:50 (20 minutes)

The super-weak model is a particle physics model which extends the Standard Model (SM) by a new $U(1)$ gauge symmetry. In addition to the new mediator \mathcal{X} , a scalar particle \mathcal{S} is added to deal with the meta-stability of the SM vacuum, and right-handed neutrinos are introduced to account for the non-vanishing neutrino masses. In this talk, we investigate the cosmological implications of such an extension with our main focus being on dark matter production. We find that a light – mass of $\mathcal{X}(10)$ MeV – sterile neutrino can play the role of dark matter with a non-vanishing parameter space. We investigate present experimental bounds on the model parameters, both from particle physics experiments as well as from astrophysical observations.

Orateur: SELLER, Károly (ELTE Eötvös Loránd University)

Classification de Session: Parallel session 4