Warsaw Workshop on Non-Standard Dark Matter:
 multicomponent scenarios and beyond

Contribution ID: 46

Super-Heavy Dark Matter from Inflation -- Towards Predictive Scenarios

Content :

A generic prediction of Coleman-Weinberg inflation is the existence of a heavy particle sector whose interactions with the inflaton generate the inflaton potential at loop level. If the heavy sector contains stable states, a relic abundance of those is generated at the end of inflation by gravity alone. This general feature, and the absence of any particle physics signal of dark matter so far, call for a paradigm shift in dark sector physics. Thus, the dark matter is super-heavy, it originates from the inflaton dynamics and its abundance today is naturally explained by the weakness of gravitational production. Such dark matter can be tested via the measurements of CMB isocurvature perturbations and non-Gaussianities, or through its peculiar signatures in the ultra high energy cosmic rays flux.

Primary authors : Dr. KANNIKE, Kristjan (National Institute of Chemical Physics and Biophysics)
Co-authors : Prof. RAIDAL, Martti (NICPB) ; Dr. RACIOPPI, Antonio (NICPB)
Presenter : Dr. KANNIKE, Kristjan (National Institute of Chemical Physics and Biophysics)

Session classification : -- not yet classified--

Track classification : --not yet classified--

Type : --not specified--