Contribution ID: **225** Type: **not specified**

Dark Matter Induced Nucleon Decay Signals in Mesogenesis

Monday 8 May 2023 18:00 (15 minutes)

I introduce and study the first class of signals that can probe the dark matter in Mesogenesis which will be observable at current and upcoming large volume neutrino experiments. The well-motivated Mesogenesis scenario for generating the observed matter-anti-matter asymmetry necessarily has dark matter charged under baryon number. Interactions of these particles with nuclei can induce nucleon decay with kinematics differing from sponanteous nucleon decay. I calculate the rate for this process and develop a simulation of the signal that includes important distortions due to nuclear effects. I estimate the sensitivity of DUNE, Super-Kamiokande, and Hyper-Kamiokande to this striking signal.

Authors: ELOR, Gilly; BERGER, Joshua (Colorado State University)

Presenter: BERGER, Joshua (Colorado State University)

Session Classification: BSM V

Track Classification: BSM