Contribution ID: **26** Type: **not specified**

Connecting pseudo-Nambu–Goldstone dark matter and pseudo-Dirac neutrinos through left–right symmetry

Saturday 15 November 2025 14:18 (18 minutes)

We explore a left–right symmetric model in which both neutrino masses and dark matter stability have a common origin. The dark matter is identified as a pseudo-Nambu–Goldstone boson (pNGB). Its scattering with nucleons is naturally suppressed. At the same time, neutrinos here are pseudo-Dirac particles with Dirac masses generated at the two-loop level. Small Majorana mass terms arise from Planck-scale effects, leading to tiny active–sterile mass splittings. The framework simultaneously provides a parity solution to the strong CP problem without an axion and predicts an interesting connection between the dark-matter lifetime and the neutrino mass-splitting.

Authors: THAPA, Anil (Colorado State University); Mr BISWAS, Sumit (Student); PADMANABHAN KOVILAKAM, Vishnu (Institut für Theoretische Physik, Universität Münster)

Presenter: Mr BISWAS, Sumit (Student)

Session Classification: Neutrinos