Contribution ID: **33** Type: **not specified**

Lepton sector and dark matter phenomenology of a minimal two loop level inverse seesaw model

Tuesday 1 July 2025 14:50 (20 minutes)

We propose a minimal extension of the SM where the tiny active neutrino masses arise from an inverse seesaw mechanism at two loop level. The phenomenological consequences of the proposed model in neutrino masses and mixings, charged lepton flavor violation and dark matter are analyzed in detail. We find that the current theory successfully complies with the constraints arising from neutrino oscillation experimental data, neutrinoless double beta decay, charged lepton flavor violating process, dark matter relic density and dark matter direct detection. The obtained rates for charged lepton flavor violating processes are within the reach of experimental sensitivity.

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Session Classification: Parallel session II