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Probing Neutrino Dipole Portal with Supernovae

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Sterile neutrinos constitute one of the simplest solutions to explain the origin of neutrino masses. They can be easily produced in the hot and dense core of a core-collapse supernova (SN). Firstly, I'll revisit the SN1987A cooling bounds for dipole portal using the integrated luminosity method, which yields more reliable results than emissivity loss criterion. I'll then discuss a novel bound on the sterile neutrino parameter space arising from the energy deposition and the observed population of underluminous SN-IIP.

Mini Symposia (Invited Talks Only)

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