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Detecting axions from SNe using underground neutrino detectors.

Monday, 3 July 2023 15:20 (20 minutes)

In this talk I will characterize the unexplored sensitivity of current and future neutrino experiments to an axion burst from a galactic SN. In particular I will focus on water Cherenkov detectors like Super- and Hyper-Kamiokande showing that axion interactions with oxygen nuclei in the detector can give an observable gamma-ray signal. This possibility would open a new way to detect axions in an unexplored range of their parameter space.
This talk is based on a collaboration with Pierluca Carenza, Giampaolo Co', Maurizio Giannotti, Giuseppe Lucente, Alessandro Mirizzi and Thomas Rauscher.

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