**Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati**

Avviso di Seminario Teorico

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**Core Collapse Supernovae Shining in Axion like Particles**

Core-collapse Supernovae (SN) are among the most powerful astrophysical sources of feebly-interacting particles. Indeed, the extreme conditions of temperature and density reached after the gravitational collapse make the SN core a unique environment to have a significant production of novel exotic particles, such as axions and axion-like particles. In this seminar, I discuss how axions and ALPs could be copiously produced in a SN core by means of their coupling with nuclear matter. In particular, I will show that the ALP parameter space can be severely constrained by employing observations of the neutrino burst from SN 1987A. Moreover, ALPs are coupled to photons or leptons are provided with a vast phenomenology due to decays and oscillations in Galactic magnetic fields, leading to observable signatures, which may eventually shed light on controversial features characterizing the SN core.”

## Martedi’ 29/7 ore 11:30 Aula Seminari

<https://agenda.infn.it/event/48006/>

L'invito è esteso a tutto il personale interessato, che è caldamente invitato a partecipare.