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

Avviso di Seminario Teorico

# Dr. Giulio Marino

INFN Pisa

**(H)ALPing the 511 keV line: A thermal DM interpretation of the 511 keV emission**

We propose a novel framework where MeV-scale Dirac Dark Matter annihilates into axion-like particles, providing a natural explanation for the 511 keV gamma-ray line observed in the Galactic Center. The relic abundance is determined by p-wave annihilation into two axion-like particles, while s-wave annihilation into three axion-like particles, decaying into e+e− pairs, accounts for the line intensity. Remarkably, this model, assuming a standard Navarro-Frenk-White profile, reproduces the observed emission morphology, satisfies in-flight annihilation and cosmological bounds, and achieves the correct relic density, offering a compelling resolution to this longstanding anomaly.

## Martedi’ 25/2 ore 11:30 Aula Seminari

https://agenda.infn.it/event/45352/

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