# Giovedì
# 26 novembre
# Aula C, ore 15:00

INFN PERUGIA

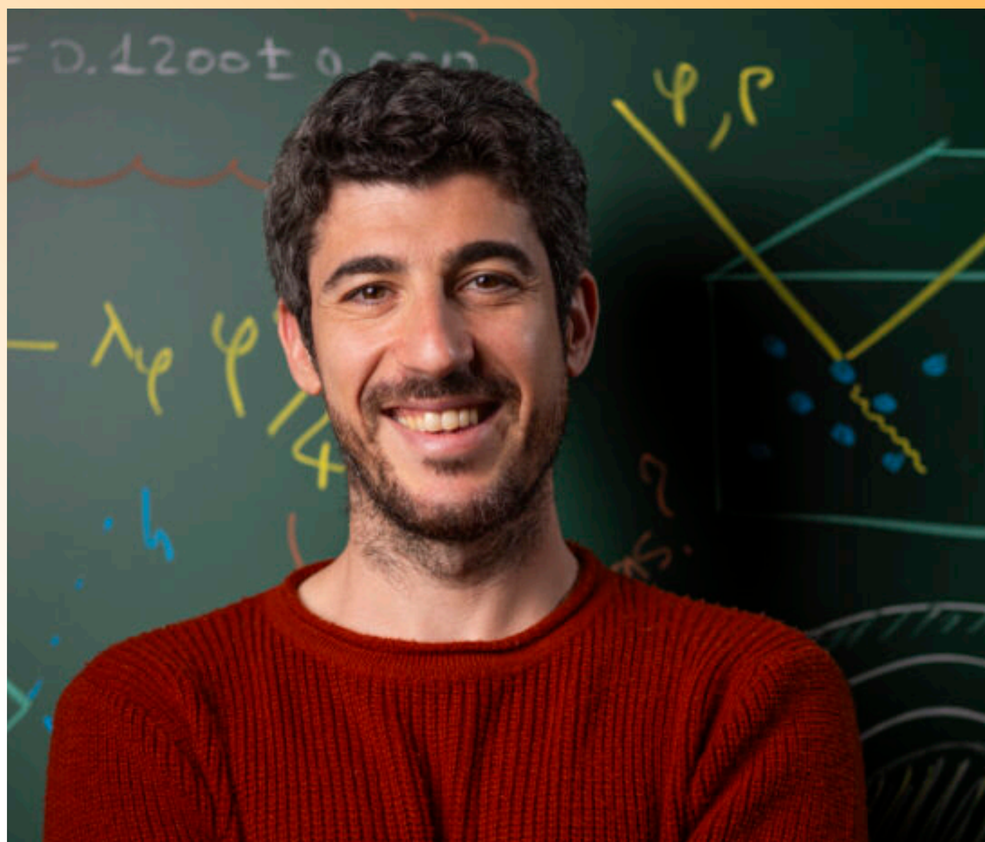
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DIPARTIMENTO DI FISICA E GEOLOGIA

PoRAPS 2026

## Chasing dark sectors: from nuclear recoils to gravitational waves

**Simone Biondini**



Most of the matter in the Universe appears to be in the form of a non-luminous substance. From a particle physics perspective, the quest to understand this so-called dark matter could lead us to complete the beautiful Standard Model with one, or perhaps more than one, dark companion. This endeavour has brought together particle physics, astrophysics, and cosmology in an exciting chase for the dark side of the Universe.

In this seminar, I will discuss the current status of dark matter searches, starting from the traditional hunt for nuclear recoils and moving towards the broader picture emerging from Standard Model global fits. I will then turn to a more intriguing possibility: that we might learn about the existence of dark particles not by detecting them directly, but by listening to the gravitational waves they may leave behind, with pulsar timing arrays offering a new window into the dark sector.