



ID contributo: 701

Tipo: Parallel Talk

Dark matter search to the limits: the DARWIN experiment

sabato 9 luglio 2022 16:10 (20 minuti)

this talk will review the main scientific goal of the DARWIN experiment: the 40 ton dual-phase Xenon TPC for WIMP dark matter search. Dark matter experiments with target masses beyond the ton scale are already reality: the XENONnT detector is currently taking its first science run data. In case of a positive dark matter detection in this detector a larger instrument will be required in order to study the properties of the dark matter particle. If nothing is found, it will be needed as well in order to fully explore the predicted parameter space for WIMP dark matter, reaching a spin-independent WIMP-nucleon scattering cross sections of a few 10^{-49} cm², where coherent neutrino interactions with atomic nuclei become the dominating and irreducible background. This talk will also discuss the other important science channels that can be explored by DARWIN, including solar neutrinos, axion and axion-like particles, supernova neutrinos and neutrinoless double-beta decay of ¹³⁶Xe.

In-person participation

Yes

Autore principale: MACOLINO, Carla (Istituto Nazionale di Fisica Nucleare)**Relatore:** MACOLINO, Carla (Istituto Nazionale di Fisica Nucleare)**Classifica Sessioni:** Dark Matter**Classificazione della track:** Dark Matter