



Contribution ID: 99

Type: **Talk**

Directional dark matter searches with the NEWSdm Experiment

Monday 26 August 2024 12:20 (20 minutes)

The nature of dark matter is one of the most relevant open problems both in cosmology and particle physics. Many different experimental techniques have been designed and built to detect Weakly Interactive Massive Particles (WIMPs) as dark matter candidates via their scattering with detector atoms. The NEWSdm experiment, located in the Gran Sasso underground laboratory in Italy, is based on a novel nuclear emulsion technology with nanometric resolution and new emulsion scanning microscopy that can detect recoil track lengths down to one hundred nanometers. Therefore, it is the most promising technique with nanometric resolution to disentangle the dark matter signal from the neutrino background, with a directional approach meant to overcome the background from neutrinos. The experiment has carried out measurements of neutrons and a run with equatorial telescope is in progress. In this talk we discuss the status of the experiment and we report the first analysis of data taken at Gran Sasso. We also discuss its sensitivity to boosted dark matter, achievable with a 10 kg emulsion module, exposed for one year at the Gran Sasso surface laboratory.

Details

Andrey Alexandrov, Istituto Nazionale di Fisica Nucleare) Sezione di Napoli

Dear Organizers,

We will appoint a speaker upon the approval of our talk.

M. Guler on behalf of the NEWSdm Editorial Board

Is the speaker for that presentation defined?

Yes

Internet talk

Maybe

Is this an abstract from experimental collaboration?

Yes

Name of experiment and experimental site

NEWSdm experiment at Gran Sasso, Italy

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Session Classification: Workshop on Astro-Cosmo-Gravity

Track Classification: Workshops & Special Sessions: Workshop on Astro-Cosmo-Gravity