Contribution ID: **18** Type: **not specified**

Probing Ultralight Dark Matter with Levitated Sensors

Friday, October 3, 2025 9:30 AM (45 minutes)

In this talk I will explain how levitated sensors can be used to search for ultralight dark matter with different spins: scalar, vector, and tensor. I will focus on a magnetically levitated superconducting particle (maglev) and describe the experimental setup that creates the magnetic trap. I will then show how interactions with ultralight dark matter give rise to a force, leading to a measurable mechanical response of the superconducting particle. Finally, I will discuss the noise sources in the experiment and present the sensitivity curves for each ultralight dark matter spin case.

Presenter: DELGADO, Paola C. M. (CEICO - FZU, Czech Academy of Sciences)