



Contribution ID: 33

Type: **Parallel talk**

The progress of ALETHEIA, a low-mass dark matter direct detection experiment

Friday, 7 July 2023 16:35 (25 minutes)

Dark Matter (DM) is one of the most pressing questions in particle physics today: the evidence of DM's existence from astrophysics and cosmology is substantial, while particle physicists know nothing about DM. Direct detection experiments have hunted DM for more than four decades. However, the null results have been consistently concluded by a lot of experiments that implemented variant target materials and detecting methods.

In this talk, I will introduce a recently established low-mass dark matter direct detection, ALETHEIA (A Liquid hElium Time projection cHambEr In dArk matter). Thanks to the extremely low ER (Electron Recoil) *and* NR (Nuclear Recoil) backgrounds, the ALETHEIA project can potentially help to answer the critical question in particle physics: the nature of dark matter.

The project has officially launched in 2020 and has progressed well in the past three years.

Primary authors: Dr ALETHEIA COLLABORATION; LIAO, Junhui (Brown University / China Institute of Atomic Energy)

Presenter: LIAO, Junhui (Brown University / China Institute of Atomic Energy)

Session Classification: Parallel talks 6: Astro-particle Physics & Cosmology