

Abstract Submitted
for the APR21 Meeting of
The American Physical Society

The Progress of the ALETHEIA Project JUNHUI LIAO, Brown University / China Institute of Atomic Energy, ALETHEIA COLLABORATION — The ALETHEIA (A Liquid hELium Time projection cHambEr In dArk matter) aims to hunt for low-mass WIMPs with a novel technology: filling liquid helium into a TPC (Time Projection Chamber). The liquid helium is at ~ 4 K, not in a superfluid state. While the TPC has been implemented for LXe (Liquid Xenon) and LAr (Liquid Argon) DM (Dark Matter) experiments and achieved great success, no single LHe TPC has ever been demonstrated suitable for DM hunting yet. The ALETHEIA collaboration would pioneer the research of an LHe TPC for DM hunting. The project has been successfully reviewed by a panel composed of leading physicists in the community of DM and LHe in Oct 2019. We are currently at the stage of prototypes R&D. We will present our preliminary results on testing some of the prototype detectors in the APS April meeting of 2021.

Junhui Liao
Brown University / China Institute of Atomic Energy

Date submitted: 11 Jan 2021

Electronic form version 1.4