

# Dark Matter Direct Detection Searches with COSINE Experiment

*Friday 31 March 2023 11:15 (15 minutes)*

COSINE-100 is a direct detection dark matter search experiment that uses Thallium-doped Sodium Iodide, NaI(Tl) as its target detector material. The detector has been collecting data since September 2016 with continuous stable operation. It consists of  $\sim 106$  kg of low background NaI(Tl) detectors submerged in a 2 tons liquid scintillator veto counter. The basic goal of the experiment is to test the annual modulation signal for Dark Matter - NaI(Tl) recoils reported by the DAMA/LIBRA experiment. In this talk, I will summarize the latest analysis results on WIMP and annual modulation search, and prospects for the next phase, COSINE-200. In addition to this, I will cover an approach to adopt the analysis procedure that is as close as possible to the DAMA/LIBRA that results in strong modulation amplitude with an opposite phase.

**Author:** ADHIKARI, Govinda (Yale University)

**Presenter:** ADHIKARI, Govinda (Yale University)

**Session Classification:** SESSION 11: Direct Detection: status of crystalline WIMP detectors (CHAIR: Bernard Sadoulet - Berkeley)