

The Road to Theia

The Theia experiment is a proposed 50 - 100 kilotonne next-generation detector for neutrinos and nucleon decay. In recent years, the development of Water-based Liquid Scintillator (WbLS) has made possible a detector with tunable light yields that can be adjusted to optimise for a broad range of physics goals. These include searches for neutrinoless double-beta decay, a target for a long-baseline neutrino beam, astrophysical neutrinos (supernova burst & relic neutrinos, low-energy solar neutrinos), atmospheric neutrinos, geo-neutrinos, reactor neutrinos, and proton decay. Using fast photosensors, Theia will collect directional information from Cherenkov light, as well as make precise energy measurements from the scintillation light.

This poster describes the Theia detector and report on the R&D status of the various technologies and techniques that will contribute to its impressive physics reach. A separate poster reports on the sensitivities of Theia to these various physics topics.

Authorship annotation

for the Theia Collaboration

Session and Location

Monday Session, Poster Wall #122 (Auditorium Gallery Left)

Poster included in proceedings:

no

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Track Classification: Poster (not participating in poster prize competition)