

Direct Dark Matter Search with the CRESST-III Experiment

The CRESST-III (Cryogenic Rare Event Search with Superconducting Thermometers) experiment located in the Gran Sasso underground laboratory (LNGS, Italy) aims at the direct detection of dark matter (DM) particles. The experiment employs scintillating CaWO₄ single-crystals as the target material for dark matter interactions and aims to probe the low-mass parameter space of elastic dark-matter - nucleon scattering with unprecedented sensitivity.

The key to achieve this sensitivity are specially optimised detector modules that are operated at a temperature of ~10mK and consist of a ~25g CaWO₄ target crystal and a silicon-on-sapphire light detector. Using this approach, a nuclear recoil energy threshold of less than 100eV is achieved.

Phase I of the CRESST-III experiment has been taking data since August of 2016 and in this contribution recent results of the experiment will be presented and the perspectives of future stages of the experiment will be discussed.

Authorship annotation

for the CRESST collaboration

Session and Location

Wednesday Session, Poster Wall #131 (Hölderlin-Room)

Poster included in proceedings:

yes

Primary author: Mr WILLERS, Michael (LBL)

Presenter: Mr WILLERS, Michael (LBL)

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