

Direct dark matter search with the CRESST-III experiment

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The CRESST-III (the third stage of the Cryogenic Rare Event Search with Superconducting Thermometers) is a direct dark matter (DM) search experiment, located at the Laboratori Nazionali del Gran Sasso in Italy, where an overburden of 1400m of rock (3800m water equivalent) provides an efficient reduction of the cosmic radiation background. In the first phase of the CRESST-III experiment, scintillating CaWO_4 crystals are used as target material for elastic DM-nucleus scattering and operated as cryogenic detectors at mK temperatures. The simultaneous measurement of the phonon signal from each target crystal and the emitted scintillation light in a separate cryogenic light detector provide event-by-event particle identification for background suppression. In 2018, the first phase of CRESST-III data taking was successfully completed, achieving an unprecedented energy threshold for nuclear recoils, lower than 100eV. The latest results of CRESST-III will be presented accompanied by a brief status update on the ongoing activities.

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