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# Search of Light Dark matter with the CRESST-III experiment.

*Friday, 9 July 2021 06:44 (14 minutes)*

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 light dark matter (DM) particles.
Scintillating $CaWO_4$ crystals operated as cryogenic detectors at mK temperatures are used as target material for elastic DM-nucleus scattering. The simultaneous measurement of the phonon signal from the $CaWO_4$ crystal and the emitted scintillation light in a separate cryogenic light detector provides particle discrimination on an event-by-event basis. The experiment, optimized for low-energy nuclear recoil detection, reached an unprecedented threshold of 30 eV for nuclear recoil energies and it is currently leading the field of low-mass dark matter search, for values as low as 160 MeV/$c^2$.

In this contribution, the current stage of the CRESST-III experiment, together with the most recent dark matter results will be presented. The perspective for the next phase of the experiment will be also discussed

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