Contribution ID: **563** Type: **Parallel**

The CRESST experiment for Light Dark Matter Search

Thursday 10 July 2025 09:50 (17 minutes)

The CRESST (Cryogenic Rare Event Search with Supercoduncting Thermometers) experiment located in the underground facility of the Laboratori Nazionali del Gran Sasso (LNGS) aims to measure dark matter particles through their elastic scattering off nuclei in scintillating crystals. The target crystals are equipped with Transition Edge Sensor (TES) thermometers and operated at mK temperature as cryogenic calorimeters. CRESST achieved outstandingly low nuclear recoil thresholds (~10 eV) yielding world-leading sensitivity for light dark matter particles for mass below 1.7 GeV/c^2.The current sensitivity is limited by an excess of events rising exponentially below the 200 eV, known as the Low Energy Excess (LEE), whose origin remains unclear. The most recent results, together with future plans will be presented and discussed.

Secondary track

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Session Classification: T02

Track Classification: T02 - Dark Matter