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Low-mass dark matter search with CRESST-III

Saturday, 30 June 2018 09:30 (30 minutes)

CRESST (Cryogenic Rare Event Search with Superconducting Thermometers) is a direct dark matter search experiment located in the underground site of the Laboratori Nazionali del Gran Sasso (LNGS) in Italy. It uses scintillating CaWO4 crystals operated as cryogenic calorimeters at mK temperatures optimized for the detection of nuclear recoils of 100eV and below. The experiment in its current stage, CRESST-III phase 1, is leading the field of low-mass dark matter detection and has recently extended the sensitivity of nuclear-recoil based direct searches to dark matter masses of below 500MeV/c^2. In this contribution, we will review the experimental technique of CRESST-III and report in detail about the most recent dark matter results. We will conclude with a discussion on future challenges and prospects of this experimental approach

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