

Search for low-mass dark matter with the CRESST experiment

Wednesday 17 May 2017 16:30 (20 minutes)

CRESST is a multi-stage experiment directly searching for dark matter (DM) using cryogenic CaWO_4 crystals. Previous stages established leading limits for the spin-independent DM-nucleon cross section down to DM-particle masses below $1 \text{ GeV}/c^2$. Furthermore, CRESST performed a dedicated search for dark photons (DP) which excludes new parameter space between DP masses of $300 \text{ eV}/c^2$ to $700 \text{ eV}/c^2$.

In this contribution we will discuss the latest results based on the previous CRESST-II phase 2 and we will report on the status of the current CRESST-III phase 1: in this stage we have been operating 10 upgraded detectors with 25 g target mass each and enhanced detector performance since summer 2016. The improved detector design in terms of background suppression and reduction of the detection threshold will be discussed with respect to the previous stage. We will conclude with an outlook on the potential of the next stage, CRESST-III phase 2.

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Session Classification: Session 8