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Results on light dark matter particles with a low threshold CRESST-II detector

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CRESST-II is a direct dark matter search using cryogenic detectors based on calcium tungstate. Due to their light nuclei and low energy thresholds these detectors allow for a high sensitivity for dark-matter particles with low masses.

We present data corresponding to an exposure of 52 kg-days obtained by one single detector module with a very low energy threshold of 307 eV for nuclear recoils. A blind analysis was performed on the data set resulting in a significantly improved sensitivity for dark-matter particles with masses below $3 \text{ GeV}/c^2$. Furthermore, this result extends the parameter space covered by direct dark matter searches to the sub- GeV/c^2 mass region.

Collaboration

CRESST collaboration

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