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Sub-MeV Dark Matter Searches with EDELWEISS: results and prospects

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The Edelweiss collaboration performs light Dark Matter (DM) particles searches with germanium bolometer collecting charge and phonon signals. Thanks to the Neganov-Trofimov-Luke effect, a RMS resolution of 0.56 electron-hole pair was obtained on a massive (33.4g) germanium detector operated underground at the Laboratoire Souterrain de Modane.

This sensitivity made possible a search for Dark Photons Down to 1 eV and for DM-electron interactions below 1 MeV/c².

It is the first measurement in cryogenic germanium at such low threshold proving the high relevance of this technology.

This is an important step of the development of the Ge detectors with improved performance in the context of the EDELWEISS-SubGeV program.

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Collaboration / Activity

Edelweiss

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