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Status and perspectives of the COBRA experiment

COBRA is a neutrinoless double-beta-decay experiment using an array of Cadmium-Zinc-Telluride semiconductor detectors, the isotop of interest being 116-Cd with a Q-value of 2814 keV. To investigate the experimental challenges of operating CdZnTe detectors in low background mode and to identify potential background components, a demonstrator setup is operated at the Gran Sasso underground laboratory (LNGS) in Italy, while additional studies are proceeding in surface laboratories. The experiment consists of monolithic, calorimetric detectors of coplanar grid design (CPG detectors). These detectors have a size of 1x1x1 cm^3 and are arranged in four 4x4 layers. An overview of the current status and future perspectives are given. Results of pulse-shape analyses are presented as well as background estimates and exclusion limits from the data collected so far.

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