

## **Towards a large scale double beta decay experiment based on CdZnTe detectors (COBRA)**

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In this presentation a short summary of the results from the operation of the COBRA Demonstrator at the LNGS will be given. Here 64 detectors of size  $1 \times 1 \times 1 \text{ cm}^3$  are running and background levels of less than 1 count/keV/kg/yr have been obtained at the peak position of  $^{116}\text{Cd}$ , which is the main interest of the experiment. A well defined, highly modular design for a large scale experiment is existing. Space requirements are small, a place like the current location (former Heidelberg-Moscow hut) is sufficient as no major cryogenics and magnets are required. The current readout is already sufficient also for the large scale experiment. Starting from this point, the concept of a Large-Scale-COBRA experiment is developed and presented. Background requirements in the region of  $10^{-3}$  counts/keV/yr are necessary and simulations are presented how COBRA considers to obtain such a level. The talk includes the physical and technological challenges to raise and operate an ultra-low background Large-Scale-COBRA experiment at the LNGS. A prospect of the required modifications to the infrastructure as well as the required time of operation for the experiment to reach the scientific goal is given.