

## Double beta decay results from the CUPID-0 experiment

A convincing observation of neutrino-less double beta decay ( $0\nu\text{DBD}$ ) relies on the possibility of operating high-energy resolution detectors in background-free conditions.

Scintillating cryogenic calorimeters are one of the most promising tools to fulfill the requirements for a next-generation experiment. Several steps have been taken to demonstrate the maturity of this technique, starting from the successful experience of CUPID-0.

The CUPID-0 experiment demonstrated the complete rejection of the dominant alpha background measuring the lowest counting rate in the region of interest for this technique. Furthermore, the most stringent limit on the  $\text{Se-82 } 0\nu\text{DBD}$  was established running 26 ZnSe crystals during two years of continuous detector operation. In this contribution we present the final results of CUPID-0 Phase I including a detailed model of the background, the measurement of the  $2\nu\text{DBD}$  half-life and the evidence that this nuclear transition is single state dominated. The first results obtained after the upgrade of the detector in 2019 are presented as well.

### Working group

WG5

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