

# Present status of experiment for Zirconium-96 two neutrino emission double beta decay

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ZICOS is a one of future experiments for neutrinoless double beta decay using  $^{96}\text{Zr}$  nuclei. In order to achieve sensitivity over  $10^{27}$  years, ZICOS will use tons of  $^{96}\text{Zr}$ , and need to remove  $^{208}\text{Tl}$  background events as observed by KamLAND-Zen one order of magnitude. For this purpose, we have developed new technique to distinguish the signal and background using a topology of Cherenkov light. In order to demonstrate this method, we are planning to observe about 100  $^{96}\text{Zr}$  two neutrino emission double beta decay events per year using 1 little of ZICOS liquid scintillator containing 0.4 g of  $^{96}\text{Zr}$  filled in  $2\nu$ -ZICOS detector. Here, we will report a present status of this experiment which will start the observation in this summer.

## Poster prize

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ZICOS collaboration

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