

Referee report GERDA (LEGEND) project

This is a challenging project which demands an unusual high level of precision accompanied by an extremely good control of the background.

Observation of neutrinoless double beta decay would be a major breakthrough in our current understanding of the laws of physics. It is therefore a very worthwhile undertaking and deserves to be supported strongly.

The extensions proposed here will make it possible to increase the present stringent limits by an order of magnitude, i.e. from 10^{26} years to 10^{27} and even to 10^{28} years in the second phase of the project.

This project is part of a large international collaboration located at Gran Sasso in Italy. It is a continuation and extension of previous efforts to measure neutrinoless double beta decay. This is fundamental physics at its best and attempts to clarify the validity of the basic standard model.

The JINR has a strong presence and visibility in this project.

The output in the form of talks at international conferences and publications could be improved.

A handwritten signature in black ink, reading "Jean Cleymans". The signature is written in a cursive style with a long, sweeping underline that extends to the left and then curves back under the name.

30 December 2020

Emeritus Professor Jean Cleymans
Physics Department
University of Cape Town
South Africa