

Borexino Project.

1) Goals of the experiment

The English of the overall text must be improved.

The main goal of the Borexino experiment at the Gran Sasso underground laboratory is the study of solar neutrinos with radiochemical methods. The experiment successfully measured ^7Be neutrinos from the Sun with high accuracy. Another outstanding goal of the project is the study of the so-called CNO cycle. Today Borexino is the leader in the measurement of the low energy part of the solar neutrino spectrum. The relevance of the past activities/results exceeds that of the expected future achievements.

2) Contribution of the JINR group

The JINR group contributed in the past to several activities. Most relevant parts of the CTF test experiment. In additions, service work for the operation of the main detector and some data analysis activities, notably in the study of the ^7Be flux and geoneutrinos.

The JINR group visibility mostly relied on the role of O. Smirnov as eminent physicist involved in the data analysis.

3) Plans

The group intends to work on the future data analysis, in particular on the improvement of the studies on the ^7Be spectrum, on geoneutrinos and on CNO neutrinos.

4) Publications

There are three recent papers for which the JINR group substantially contributed. In particular, the article on the exotic measurement of the neutrino magnetic moment.

5) PhD theses

Two theses are expected to be completed in 2019. It is worrisome that one of the two students is only at 50% on the project.

6) Talks

The list of talks (plenary and parallel) include 14 presentations, all given by Smirnov and Vishneva. Most of them not given at important international conferences.

7) Group size, composition and budget

The group is rather small (head count and FTEs), and it is going to be further reduced with the departure of the graduating PhD student. The budget is limited, essentially useful to a metabolic participation in Gran Sasso activities and in conferences.

Antonio Ereditato