

## Limit on the effective magnetic moment of solar neutrinos from Borexino Phase-II data

Although predictions for the magnetic moment of neutrino in the standard theory are far beyond the sensitivity of contemporary experiments, anomalously large neutrino magnetic moments would be of interest from the point of view of astrophysical consequences.

Electromagnetic neutrino interaction caused by the non-zero magnetic moment occurs, e.g., in the  $\nu - e$  elastic scattering significantly contributing to the low-energy part of the cross section.

This effect can be searched for in low background liquid scintillation detectors such as Borexino.

In this study, 1291.5 days of the second phase of the experiment are used in the analysis.

The effective magnetic moment of solar neutrinos constrained using this data set is  $\mu_\nu < 2.8 \cdot 10^{-11} \mu_B$  (90% C. L.).

Finally, this result has been used to put constraints on the magnetic moments of mass and flavor eigenstates.

### Authorship annotation

on behalf of the Borexino collaboration

### Session and Location

Wednesday Session, Poster Wall #33 (Auditorium Gallery Right)

### Poster included in proceedings:

yes

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**Track Classification:** Poster (participating in poster prize competition)