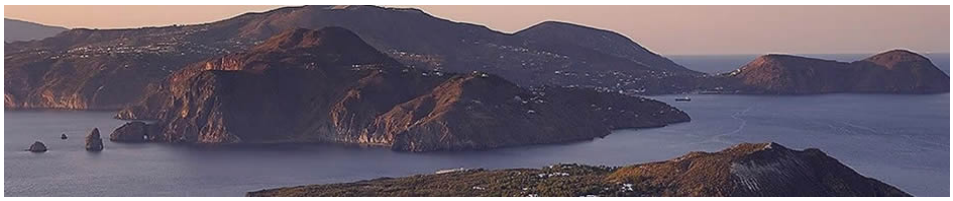

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Low energy solar neutrinos with Borexino

Low energy solar neutrinos, fundamental for the discovery of the neutrino flavour oscillation, are a unique tool to investigate the nuclear reactions that fuel the Sun. The Borexino experiment, based on a 270 ton ultra-pure liquid scintillator detector at Laboratori Nazionali del Gran Sasso, was conceived to measure solar neutrino fluxes in the MeV and sub-MeV energy range. The data taking started on 2007 and thanks to the unpreceded level of radio-purity achieved in the inner part of the detector, a real time spectroscopy of the main components of the pp chain was possible. After a purification process, in the phase II data, the simultaneous fit of all the pp-chain components was performed and the interaction rates of pp, 7Be and pep were extracted with the highest precision to date. In addition, the 8B neutrinos were measured with the lowest-threshold and a limit on the hep neutrino flux was also set. In the talk, after a description of the main properties of Borexino detector, the analysis of the phase II data will be explained and the new results on the low energy solar fluxes will be shown as well as their implications on the survival probability of solar electron neutrinos at different energies.

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