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TECHNIQUES OF BACKGROUND SUPPRESSION IN BOREXINO

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After more than 14 years of data taking, the Borexino experiment has proven to be a unique tool for studying the interior of the Sun. The key of the success of Borexino is the unprecedented level of the liquid scintillator radiopurity and the overall control of the detector backgrounds, reached after several years of hardware improvements and analysis technique developments. The expected solar neutrino interaction rate of a few tens per day in 100 ton sets the requirements about the needed radiopurity.
In this talk the main components of the background are presented along with the experimental procedures implemented to suppress them or reduce their impact via shielding, purification and data selection. Several methods are used to remove muons and cosmogenics isotopes as well as the external and surface backgrounds. The initial radiopurity of the detector exceeded the design goal for several contaminants, and a series of procedures to purify the scintillator have significantly reduced the internal radioactive contaminants as ^{85}Kr and ^{210}Pb , and allowed to reach currently unequaled levels of ^{238}U and ^{232}Th < 10^{-20} g/g.

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