

Experimental detection of the CNO cycle

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Borexino recently reported the first experimental evidence for a CNO neutrino. Since this process accounts for only about 1% of the Sun's total energy production, the associated neutrino flux is remarkably low compared to that of the pp chain, the dominant hydrogen-burning process. This experimental evidence for the existence of CNO neutrinos was obtained using a highly radio-pure Borexino liquid scintillator. Improvements in the thermal stabilization of the detector over the last five years have allowed us to exploit a method of constraining the rate of ^{210}Bi background. Since the CNO cycle is dominant in massive stars, this result is the first experimental evidence of a major stellar hydrogen-to-helium conversion mechanism in the Universe.

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