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First detection of solar neutrinos from the CNO cycle with Borexino

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This talk will be centered on the description of the first detection of solar neutrinos from the CNO cycle with Borexino. Borexino is running at the “Laboratori del Gran Sasso” in Italy since 2007. Its major distinctive feature is the unprecedented ultralow background of the inner scintillating core, which is the foundation of the outstanding results it has accumulated over the years. After recalling the main features of the detector, the recent breakthrough achievement of the CNO neutrino observation will be thoroughly illustrated. Such a detection crowns the long quest of the experiment to chase the neutrino components from the whole set of the nuclear reactions occurring in the core of our star. Therefore, with this result Borexino has completely unraveled the two processes powering the Sun: the pp chain with the previous measurements and now the CNO cycle.

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