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# Borexino: recent results and outlook on the final data

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Borexino is a large solar neutrino detector that has operated at the Laboratori Nazionali del Gran Sasso between 2007 and October 4, 2021. Neutrinos are detected via their interaction with a 300-ton liquid scintillator target, purified to achieve unprecedented levels of radio-purity. Borexino has detected most of the components of the solar neutrino spectrum. In particular, it has measured with refined precision the neutrinos from the entire pp fusion chain in the Sun using analysis tools that fully exploit our understanding of the detector. Most recently, Borexino has made the first measurement of solar CNO neutrinos, produced in a catalytic hydrogen fusion cycle enabled by the presence in the solar plasma of heavier elements, or “metals”. This observation caps almost 15 years of data taking and provides experimental confirmation for the pioneering solar modeling by Hans Bethe dating back to the 1930s. This talk will summarize these results, present the recently-reported directional low-energy neutrino detection in scintillator, and discuss the reach of the final Borexino data.

## Summary

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**Session Classification:** Thursday