Contribution ID: **242** Type: **Oral**

Solar Neutrino Results and Future Opportunities with Borexino

Tuesday 10 September 2013 14:00 (20 minutes)

The first phase of Borexino started in 2007 with background conditions that were low enough to allow measurements of 7Be and pep neutrinos, a new upper limit on CNO neutrinos, and a measurement of 8B neutrinos at lower threshold energy. These data provided the first direct probe of neutrino oscillations in the energy range covering the MSW transition from vacuum oscillations to matter enhanced oscillations. A second phase of Borexino has started following a recent scintillator purification campaign that lowered 85Kr and 210Bi backgrounds. The lower backgrounds will improve the accuracy of current measurements and provide opportunities for measurement of pp neutrinos and an improved limit on CNO neutrinos. Further refinement of the purification methods may achieve yet lower background, allowing a more sensitive probe for CNO neutrinos relevant to the solar metallicity problem. The current results, the scintillator purification methods, and the future scientific opportunities for solar neutrino research will be discussed.

Author: CALAPRICE, Frank (Princeton Univ.)

Presenter: CALAPRICE, Frank (Princeton Univ.)

Session Classification: Low Energy Neutrinos II

Track Classification: Low-Energy Neutrinos (solar, reactor, supernova, and geo neutrinos and also nuclear astrophysics associated with these sources)