

NEUTRINOS IN NUCLEAR PHYSICS AND ASTROPHYSICS

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Wednesday, September 7, 2011
4:00 P.M. NSH 118
(Refreshments at 3:30 P.M. NSH 202)

More than half a century after their existence was first postulated, we finally seem to be getting closer to understanding the elusive physics of neutrinos. Their seemingly very small masses and feeble interactions with ordinary matter make neutrinos rather special. For a long time very little experimental information was available about neutrino properties, even though even a small neutrino mass has intriguing cosmological and astrophysical implications. This situation has changed in the recent years. After a very exciting discovery stage during the last decade, neutrino physics is now at precision stage. In this talk, following a brief history of the neutrino physics, recent experimental and theoretical developments in solar, atmospheric, and reactor neutrino physics will be reviewed. Future and ongoing experiments are aimed at measuring remaining neutrino parameters, as well as their C and CP-violation properties. Implications of those experiments for neutrino physics and astrophysics will be discussed. The role of neutrinos in the dynamics of core-collapse supernovae and the origin of chemical elements will be elucidated.

Colloquium

All interested
persons are
cordially
invited to
attend.