

CU Physics Department Colloquium

Monday, February 23, 2009 4:10 PM 428 Pupin Hall

Stefan Schoenert, Max-Planck-Institut für Kernphysik



"Cutting edge projects in low-energy particle and astroparticle physics"

Neutrinos are unique probes of particle physics, astrophysics and cosmology. As they do not carry electrical charge, neutrinos and anti-neutrinos could be identical, usually referred to as Majorana particles. An experimental proof of this fundamental feature would be a major breakthrough and open the window to new physics beyond the Standard Model. A key aspect to decipher the underlying new physics is the precise knowledge of the neutrino mixing angles. Neutrinos are as well unique to probe the interior of the Earth, the sun or collapsing stars. The detection of high energy neutrinos will elucidate the acceleration mechanism of cosmic rays and give insights into the nature of the Dark Matter. After an introduction to this exciting research field, I will present results from the solar neutrino experiment Borexino, summarize the status of the reactor neutrino oscillation experiment Double Chooz, discuss the double beta decay experiment GERDA experiment, and sketch future developments.

Hosted by Mike Shaevitz

Meet the speaker will be held at 3:30 PM in 705 Pupin

