

LABORATORI NAZIONALI DEL GRAN SASSO

SEMINAR ANNOUNCEMENT

On September 27, 2007 at 14:30, Gennady Lykasov from JINR,
Dubna, Russia will give a seminar entitled:

**“NEUTRINO-NUCLEUS
INTERACTIONS AT LOW ENERGIES
WITHIN FERMI-LIQUID THEORY”**

Abstract:

The Landau-Migdal theory of Fermi-liquid is applied to calculate the cross sections of neutrino scattering off heavy nuclei at energies less than 50 MeV. The weak response function related to these cross sections is obtained as the solution of the Dyson type kinetic equation for two-component nuclear medium consisting of protons and neutrons. Our results are in agreement with other more sophisticated calculations based on the nuclear shell model and the random phase approximation (RPA). The difference between our results and the other calculations is rather small for solar neutrinos. Our approach allows calculations of the cross sections in the most simple way comparing with the other nuclear models. It allows us to obtain a quite reliable estimate of the background induced by solar neutrinos in, for example, Ga or Ge detector. The application of suggested approach to analyze experiments like Borexino and others performed at the LNGS is discussed.

(“B. Pontecorvo” room)