Contribution ID: **49** Type: **not specified**

Neutrino-nucleon cross-sections at energies of Megaton-scale detectors

Tuesday 15 September 2015 17:30 (20 minutes)

We present an updated set of (anti)neutrino-nucleon charged and neutral current scattering cross-sections with an emphasis on intermediate energies between ˜ 3 GeV and ˜ 100 GeV. These cross-sections can be used for reconstruction and analysis of events in the future PINGU, ORCA and Hyper-Kamiokande experiments and for detector parameters optimization. Dynamic effects due to the finite masses of secondary leptons and target mass corrections in deep inelastic scatterings are taken into account. The DIS calculations are based on the ABM11 set of QCD NNLO parton distribution functions. The sensitivity of the cross-sections to different theoretical parameters and to extrapolations of the nucleon structure functions to small x and Q^2 are discussed. Agreement within the errors of the present calculations with various experimental data is demonstrated. Our results are compared with calculations of other authors.

Author: Dr GAZIZOV, Askhat (GSSI/DESY)

Co-authors: Dr SPIERING, Christian (DESY); Dr KUZMIN, Konstantin (JINR Dubna); Prof. KOWALSKI, Marek (DESY); Dr NAUMOV, Vadim (JINR Dubna)

Presenter: Dr GAZIZOV, Askhat (GSSI/DESY)

Session Classification: Parallel Session H