



Contribution ID : 266

Type : Oral talk

Measurements of the absolute reactor antineutrino energy spectrum dependence on the fuel composition

Thursday, 1 December 2022 11:15 (15)

DANSS is a one cubic meter highly segmented solid scintillator detector. It consists of 2500 scintillator strips, covered with gadolinium loaded reflective coating and read out with SiPMs and PMTs via wavelength shifting fibers. DANSS is placed under a 3.1 GW industrial reactor at the Kalinin NPP (Russia) on a movable platform. The distance from the reactor core center is varied from 10.9 m to 12.9 m on-line. The inverse beta decay (IBD) process is used to detect antineutrinos. DANSS detects about 5000 IBD events per day with the background from cosmic muons at the level of few percent. In this talk we present results on the neutrino spectrum dependence on the fuel composition. We have also measured the reactor power using the IBD event rate during almost 6 years with the statistical accuracy 1.5% in 2 days and with the relative systematic uncertainty of about 0.5%. The limits in sterile neutrino parameter space based on information about absolute counting rates are also presented.

Primary author(s) : SKROBOVA, Nataliya

Presenter(s) : SKROBOVA, Nataliya

Session Classification : Neutrino Physics

Track Classification : Neutrino physics