



Contribution ID : 20

Type : Oral talk

Status of the ν GeN neutrino experiment at Kalinin NPP

Wednesday, 23 October 2024 17:50 (15)

The ν GeN experimental setup is deployed at Kalinin Nuclear Power Plant at a distance of 11 m from the center of the Unit 3 core. The experiment aims for observation of coherent elastic scattering of reactor antineutrinos off nuclei (CEvNS) and performs a search of antineutrino magnetic moment (NMM) using a 1.4 kg HPGe detector. Based on the dataset acquired from September 2022 to May 2023 we report a 90% C.L. upper limit on CEvNS cross-section of 5.0/2.0 times larger than the Standard model prediction depending on the assumption of nuclear recoil quenching factor. The 90% C.L. sensitivity of ν GeN to NMM evaluated for the same dataset is $5.3 \cdot 10^{-11} \mu_B$, while the increase of exposition to 1100 kg·days together with application of a background model allows to reach an upper limit of $2.6 \cdot 10^{-11} \mu_B$.

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Session Classification : Neutrino

Track Classification : Neutrino physics