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Search for the coherent elastic neutrino-nucleus scattering and other rare processes in nuGeN experiment at Kalinin nuclear power plant

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The experiment nuGeN is aimed at studying the properties of antineutrinos from the 3.1 GWth reactor of the Kalinin NPP (Udomlya, Russia). The experimental setup was installed under the reactor core of the KNPP on a special lifting platform at a distance of 11.1-12.2 m from center of the reactor core, which allows to operate an enormous flux of antineutrinos in $(3.6 - 4.4) \cdot 10^{13}$ (cm⁻² sec⁻¹). A reactor surrounding materials (overburden equivalent to about 50 m w.e.) serve as good shielding against cosmic rays. The signals sought are recorded by a specially designed low-background, low-threshold, germanium detector surrounded on all sides by active and passive combined radiation shielding. A detailed overview of the experimental setup, the current status of measurements, and the obtained results will be presented at the conference.

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