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Mark Shirchenko on behalf of DANSS collaboration

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DANSS is a detector of the reactor antineutrino/ It consists of 2500 intercrossing polystyrene-based plastic scintillator strips (100x4x1 cm) with the total mass of 1.1 tn. The light signal is read out with 2500 individual SiPMs and with 50 conventional compact PMTs via WLS fibers, thus providing 3D space pattern of each event. It is mounted just under the cauldron of the 3 GW_th reactor WWER-1000 of Kalinin NPP (Russia) on a special lifting platform which varies the distance to the reactor core from 10.7 to 12.7 m within few minutes once per 2-3 days. Due to such location, DANSS is perfectly shielded against cosmic neutrons by 50 mwe of reactor body, cooling pond and other hydrogen-containing elements of the building. As a result, DANSS detects about 5,000 IBD events per day with a background at the level of few percent. In addition to the reactor monitoring, DANSS is used to search for short-range neutrino oscillation to a steryle state. The data analysis consists in comparison of the neutrino energy spectra measured at different distances, it does not use any theoretically calculated spectrum and therefore is completely model-independent; systematic errors caused by long-term variation of the reactor fuel and detector efficiency are eliminated as well. In one year of the detector operation we have collected more than 1,000,000 IBD events and could exclude a big part of steryle neutrino parameters region. In particular, the Reactor Antineutrino Anomaly optimum point is excluded with a confidence level higher than 5σ.

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