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Status of DANSS experiment

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The DANSS experiment at Kalininskaya NPP is running for already 8 years since April 2016. The largest in the world in the single experiment statistics of 9 million inverse beta decay events is collected. The data sample covers 4 full cycles of the industrial power reactor. DANSS experimental program includes both a search for physics beyond the Standard Model, like sterile neutrinos or large extra dimensions, and applied studies connected to reactor monitoring using electron antineutrino flux. The model independent exclusion area in the sterile neutrino parameter space for 3+1 hypothesis extends till $\sin^2 2\theta = 0.004$ for $\Delta m^2 = 0.9 \text{ eV}^2$, where sensitivity of the experiment is the best. Our data show presence of antineutrinos with energies above 10 MeV in the reactor spectrum with significance of 6.8σ . Along with ongoing statistics collection DANSS is preparing for an upgrade, which shall significantly improve its energy resolution and also increase the fiducial volume. The talk covers recent analysis results and the upgrade status.

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