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DANSS experiment: current status and future plans

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DANSS is a solid scintillator antineutrino detector located right below a 3 GWth reactor of the Kalinin NPP. One cubic meter of the sensitive volume with fine segmentation makes it possible to achieve an unprecedented counting rate of about 5000 IBD events per day, keeping the level of cosmic background below 2%. New physics with sterile neutrino is searched for by performing spectral measurements at varying distance from the reactor core. Contributions to the applied antineutrino physics include reactor power measurements and fuel analysis. Commissioned in 2016, DANSS accumulated about 4 million antineutrino events by this fall. Advances in the data analysis will be reported, including improvements in the energy calibration and the optimization of the selection cuts. DANSS upgrade plans include new scintillator strips with higher light collection efficiency and better homogeneity. Expected improvement in the energy resolution will significantly increase the experiment sensitivity to the light sterile neutrino.

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