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DANSS Reactor Antineutrino Project: Status and First Results

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DANSS project is aimed at the sterile neutrino searches in the short
range region. The detector is installed directly under the core of an industrial 3.1 GW reactor taking advantage of its body and shielding as an 50 m.w.e. overburden. The distance to the core center can be changed in the range of 10.7 to 12.7 m by means of a hoisting gear. The detection of inverse beta-decay is performed
in a sensitive volume of 1 cubic meter filled with plastic scintillator strips covered with gadolinium oxide. 2500 strips are read out individually by SiPMs and, in groups of 50, by traditional PMTs. Multilayer passive shielding and active muon veto provide good suppression of external backgrounds.

Inverse beta-decay rate reaches 5000 events per day in the fiducial
volume of 78% and detector position, closest to the reactor core. Powerful shielding together with fine segmentation provides excellent signal to background ratio. Experiment status will be presented together with some preliminary results based on about 170 days of active data taking during the first year of operation.

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