Contribution ID: **116** Type: **Oral**

# Searches for New Physics in the DANSS Experiment

*Thursday 28 August 2025 17:40 (20 minutes)*

DANSS is a scintillator detector of antineutrinos located on a lifting platform below the 4th reactor core of Kalininskaya NPP in Russia. The detector position below the reactor core provides advantages of high neutrino rate and moderate overburden of 50 m w.e., which suppresses atmospheric muon flux by a factor of 5–6. The detector was commissioned in April 2016 and it has been operating continuously since October 2016. The antineutrino statistics exceeds 10M IBD events. This talk presents searches for sterile neutrinos and large extra dimensions (LED) using ratios of antineutrino spectra at various distances from the reactor core. This ratio-based approach avoids dependence on reactor spectra models and detector efficiency uncertainties. No statistically significant evidence of either effect was found. The limits in the sterile neutrino parameter space were set using Gaussian CLs method. The DANSS result effectively excludes the region preferred by the recent BEST data below $\Delta m^2 = 5$ eV$^2$. The exclusion region in the LED parameter space generally agrees with Daya Bay result, but is more strict in some regions and is obtained in a model-independent way. We also present results on the high energy tail (above 10 MeV) of reactor antineutrinos. The talk will cover the DANSS upgrade status as well.

## Collaboration you are representing

The DANSS Collaboration

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**Session Classification:** Neutrino Physics and Astrophysics

**Track Classification:** Neutrino Physics and Astrophysics