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CeLAND: PBq source in KamLAND and short baseline neutrino oscillations prospects

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An intriguing, nearly three-sigma indication of the electron antineutrino disappearance at less than 100 m distance from the nuclear reactor core has recently been revealed. The effect was named a reactor antineutrino anomaly (RAA). The disappearance may be due to reactor neutrinos oscillating into another neutrino type. We plan to test the RAA with a complementary technique: deploy a massive 76 kCi electron antineutrino source (cerium-144 and praseodymium-144) in the veto region of Kamioka Liquid Scintillator Antineutrino Detector (KamLAND), 1 kiloton size detector. The project is called CeLAND. It will search for the sterile neutrino oscillation in 3-16 m range and probe the majority of the oscillation phase space suggested by the RAA with 95% confidence level. The status and prospects of the experiment will be presented.

Primary author: Dr MARICIC, Jelena (University of Hawaii)

Presenter: Dr MARICIC, Jelena (University of Hawaii)

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