

CEvNS at the Dresden-II reactor and beyond

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The recent detection of coherent elastic neutrino-nucleus scattering (CEvNS) enables neutrino investigations of new physics with small-size detectors. However, CEvNS generates signals at the few- or sub-keV levels, requiring very sensitive detector technologies. High-yield neutrino sources, including power reactors, provide the fluxes required for definitive explorations of the phenomenological and technological applications of CEvNS.

The applicability of p-type point contact Ge detectors to this sector of neutrino physics is well established. Several improvements to the current epitome of Ge diodes, the NCC-1701 detector, are in progress for its re-deployment in the next phase of reactor CEvNS exploration.

In this talk, I will present the success of NCC-1701 at the Dresden-II core in the USA, its operational challenges, and the slew of improvements built into its upcoming installation at the Ringhals nuclear plant in Sweden. In the context of Ringhals, I will also discuss the feasibility of reactor power monitoring via CEvNS, even under present detector capabilities.

Abstract title

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Primary author: LEWIS, Mark (Donostia International Physics Center)

Presenter: LEWIS, Mark (Donostia International Physics Center)

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