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New results from the commissioning of the NUCLEUS experiment at the Technical University of Munich

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The NUCLEUS experiment aims to perform precision measurements of coherent elastic neutrino-nucleus scattering (CEvNS) of reactor antineutrinos in the fully coherent regime. In the first phase, $CaWO_4$ cryogenic detectors will be used as targets and the experimental apparatus will be installed at the Chooz nuclear power plant in France, in the vicinity of two 4.5 GW_{th} reactor cores. The target detectors will be integrated into a compact veto system, incorporating both active and passive shielding, designed to achieve a CEvNS signal-to-background ratio of approximately 1 in the energy region of interest (20 - 100 eV) .
In this talk, we present new results from the commissioning of a substantial version of the experiment at the shallow Underground Laboratory of the Technical University of Munich. Additionally, we discuss progress on upgrades to the detector systems and provide a status update of the relocation of the experimental apparatus to the reactor site, in preparation for a technical run at Chooz scheduled for 2026.

Collaboration you are representing

NUCLEUS

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