



Contribution ID: 376

Type: Poster

## The NUCLEUS experiment: a search for coherent elastic neutrino-nucleus scattering with reactor antineutrinos

*Tuesday 7 September 2021 12:01 (1 minute)*

Coherent elastic neutrino-nucleus scattering (CEvNS) offers a unique way to study neutrino properties and to search for new physics beyond the Standard Model.

The NUCLEUS experiment aims at measuring the CEvNS signal from reactor antineutrinos. The detector will consist of a newly developed 10 g target array of  $\text{CaWO}_4$  and  $\text{Al}_2\text{O}_3$  cryogenic calorimeters with demonstrated ultra-low threshold of  $\sim 20$  eV, an energy region never explored so far. The experiment will be installed between the two pressurized water reactors of the Chooz B power plant in the French Ardennes. Currently, the experiment is under construction and the commissioning of the full apparatus is expected to start in 2022.

This talk will present the expected sensitivity of the NUCLEUS experiment to the CEvNS signal as well as its physics potential. The current status and the next steps of the experiment will be reported.

**Primary author:** Dr ONILLON, Anthony (CEA)

**Presenter:** Dr ONILLON, Anthony (CEA)

**Session Classification:** Poster Session I

**Track Classification:** Neutrino physics