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The COHERENT experiment and LAr for the CEvNS study

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The process of coherent elastic neutrino nucleus scattering (CEvNS) was predicted more than 45 years ago within the Standard Model of elementary particles. The cross section of this process depends quadratically on the number of neutrons in the nuclei and thus prevails over all other known neutrino interactions. Therefore, this process is very interesting as a possible tool for nuclear reactor monitoring and nonproliferation tasks, and as a probe for the physics beyond the Standard Model. However, due to very low recoil energy, this process was not observed until recently. The first measurement was provided by the COHERENT experiment in 2017 with the CsI detector. In this talk, an overview of the COHERENT experiment will be presented with a main focus on the liquid argon (LAr) program.

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