

Probing light mediators through detection of coherent elastic neutrino nucleus scattering at COHERENT





- and LAr
- Neutrino flux: $\pi^+ \rightarrow \mu^+ + \nu_\mu$ $\mu^+ \rightarrow e^+ + \bar{\nu}_{\mu} + \nu_e$

The COHERENT energy and time \supseteq information allow us to distinguish the interactions of v_e , v_μ and \bar{v}_μ



- nucleons at the one-loop level.
- Compared with several non-CEvNS experiments, the $(g 2)_{\mu}$ anomaly. $CE\nu NS$ data allow us to extend the excluded regions.
- Obtained the strong constraints on a light scalar boson and rejects the explanation of the $(g 2)_{\mu}$ anomaly in this model.

1. Probing light mediators and $(g - 2)_{\mu}$ through detection of coherent elastic neutrino nucleus scattering at COHERENT. [M. Atzori Corona et al. arXiv: 2202.11002] 2. [Freedman, Physical Review D, 1974, 9(5): 1389] 3. [Akimov et al. Science Vol 357, Issue 6356 15 September 2017]



