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$CE\nu$ NS with Photon Emission as Smoking Gun Signal of New Physics

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In the presence of transition magnetic moments between active and sterile neutrinos, Coherent Elastic Neutrino Nucleus Scattering ($CE\nu$ NS) experiments can provide stringent constraints on the neutrino magnetic moment by searching for Primakoff upscattering. I will introduce a new smoking gun signal, a radiative upscattering process with a photon emitted in the final state, which will be able to probe neutrino transition magnetic moments beyond existing limits. Most importantly, I will highlight that such a new experimental mode has the potential to distinguish between the Majorana and Dirac nature of light active neutrinos.

In-person participation

Yes

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