**ICHEP 2022** 



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

Friday, 8 July 2022 18:15 (15 minutes)

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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