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New Physics versus Quenching Factors in Coherent Neutrino Scattering

Monday 19 May 2025 17:00 (15 minutes)

We investigate the impact of quenching factor uncertainties on the Coherent Elastic Neutrino-Nucleus Scattering ($\text{CE}\nu\text{NS}$) cross section measurements. From the recent results of Dresden-II, CONUS+, and COHERENT, we present that no choice of quenching factor can bring these three data sets into mutual agreement. We further present the quenching factor dependence on sensitivity of these experiments to a large neutrino magnetic moment, finding that the constraints can vary up to an order of magnitude. Our work highlights the importance of reducing this uncertainty on quenching factors in order to probe new physics from neutrinos at the low-energy frontier.

Mini Symposia (Invited Talks Only)

Plenary (Invited talks only)

Author: LI, Yulun

Co-authors: HERRERA, Gonzalo (TUM, MPP); Prof. HUBER, Patrick

Presenter: LI, Yulun

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