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Impact of crystal lattice defect quenching on coherent neutrino scattering experiments

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Future experiments on coherent neutrino scattering near nuclear reactors using cryogenic solid-state phonon-mediated detectors have their global signal for the energy transferred to the target nucleus in the range of a few tens to a hundred electron volts. In this range, the creation of permanent or long-lived crystal defects can have a significant effect on the reconstruction of the true energy of the incident neutrino. I will present a study of the impact for future generations of experiments (such as Nucleus-10g) and discuss a possible envelope for the associated systematic uncertainty for future searches of physics beyond the Standard Model.

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