

Mössbauer Neutrinos

Focus: neutrino cross-sections

Requirements: analytical calculations

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It has been postulated that neutrinos – like their photon counterparts – have the ability to interact coherently with matter through the Mossbauer effect. This process has an incredible enhanced cross-section, as much as 10–12 orders of magnitude in comparison to conventional interactions, albeit at a very narrow neutrino energy.

Explore what kind of physics might be accessible with neutrinos created and detected through such a process. What experimental considerations should be taken into account for such a measurement?

Articles:

R. S. Raghavan, <https://arxiv.org/abs/hep-ph/0601079>

William M. Visscher, <https://doi.org/10.1103/PhysRev.116.1581>

Joachim Kopp, <https://arxiv.org/abs/0802.2513>