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CP violating effects in coherent elastic neutrino-nucleus scattering processes

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Assuming light vector mediators, we discuss the effects of CP violation on the coherent elastic neutrino-nucleus scattering (CEvNS) process in the COHERENT sodium-iodine, liquid argon and germanium detectors. We show that in some regions of the parameter space, the presence of a dip in the event rate spectrum can be used to constraint CP violating effects. In other regions, we find that CP violating parameters can mimic the Standard Model CEvNS spectra induced by real parameters. We point out that the interpretation of CEvNS data in terms of a light vector mediator should take into account possible CP violating effects.

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