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Title: CEvNS track detectors

Abstract
Coherent elastic neutrino nucleus scattering results in nuclear recoils which in turn permanently damage the host crystal by the creation of vacancies in the lattice. In certain types of crystals these vacancies are optically active and can be individually detected by laser-induced fluorescence, a technique which has recently been demonstrated in applications to quantum computing. This allows for entirely passive neutrino detectors which can be read out off-site. We present detailed simulations of the damage creation and early results indicate that 100g of detector mass are sufficient to detect reactor powers below 50MW even in the presence of sea-level cosmic ray neutron backgrounds.