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Observation of Supernova Neutrino Bursts via CEvNS

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Coherent elastic neutrino-nucleus scattering (CEvNS) is a neutral-current process in which a neutrino scatters off an entire nucleus, depositing a tiny recoil energy. The process is important in core-collapse supernovae and also presents an opportunity for detection of a burst of core-collapse supernova neutrinos in low-threshold detectors designed for dark matter detection. Here we present an ongoing study of prospects for supernova burst detection via CEvNS in existing and future large-scale detectors.

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