

Sensitivity of liquid argon dark matter search experiments to core-collapse supernova neutrinos.

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Future liquid-argon DarkSide-20k and ARGO detectors, designed for direct dark matter search, will be sensitive also to core-collapse supernova neutrinos, via coherent elastic neutrino-nucleus scattering.

Thanks to the low-energy threshold of ~ 0.5 keVnr achievable via the ionization channel, DarkSide-20k and ARGO have the potential to discover supernova bursts throughout our galaxy and up to the Small Magellanic Cloud, with sensitivity also to the neutronization burst.

The accuracies in the reconstruction of the average and total neutrino energy in the different phases of the supernova burst, as well as its time profile, taking into account the expected background and the detector response, are reviewed.

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