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Pinpointing astrophysical bursts of low-energy neutrinos with a network of detectors

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Next galactic core-collapse supernova (CCSN) is a one for life event that we should not miss. The detection of its electromagnetic waves, neutrinos and gravitational waves can probe the supernova engine improving our learning of this catastrophic event. A robust emission of low-energy neutrinos is expected to accompany a CCSN explosion, however the identification of real astrophysical bursts embedded into the noise is challenging. We discuss the response of a worldwide network of neutrinos telescopes to the expected signal, its detection efficiency and in particular its capability to recognise small statistic signals from distant supernovae.

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