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Search for Supernova Neutrino Bursts at LVD

We report the results of a search for neutrino bursts from supernova explosions with the Large Volume Detector (LVD) at the INFN Gran Sasso National Laboratory.

LVD is sensitive to core-collapse supernova explosions via neutrino outburst detection with 100% efficiency over our own entire Galaxy. No evidence of supernova explosion is found over 7335 live days spanning from June 1992 to December 2013. The 90% C.L. upper limit on the rate of core-collapse supernova explosions out to distances of 25 kpc is found to be 0.114 event/year.

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