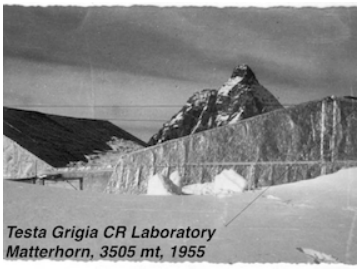

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The core collapse supernova rate from 24 years of data of the Large Volume Detector

Thursday, 8 September 2016 12:00 (15 minutes)

The Large Volume Detector (LVD) has been continuously taking data since 1992 at the INFN Gran Sasso National Laboratory (L'Aquila, Italy). The experiment is sensitive to neutrino bursts from gravitational stellar collapses with full detection probability over the Galaxy. We have searched for neutrino bursts in LVD data taken in 8124 days of livetime operation.
No evidence of neutrino signals has been found between June 1992 and February 2016. The 90% C.L. upper limit on the rate of core-collapse and failed supernova explosions out to distances of 25 kpc is found to be 0.10 y^(-1).

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