

Update of the supernova neutrinos monitoring with the LVD experiment

C. Vigorito,^{a,*} G. Bruno,^{b,c} W. Fulgione^{b,d} and A. Molinaro^{b,d} on behalf of the LVD Collaboration

(a complete list of authors can be found at the end of the proceedings)

^a*University of Torino and INFN-Torino,
Torino, Italy*

^b*INFN Laboratori Nazionali del Gran Sasso,
L'Aquila, Italy*

^c*New York University Abu Dhabi, NYUAD,
Abu Dhabi, United Arab Emirates*

^d*INAF, Osservatorio Astrofisico di Torino,
Torino, Italy*

E-mail: carlo.vigorito@to.infn.it

The Large Volume Detector (LVD) at the INFN Gran Sasso National Laboratory, Italy, is a neutrino observatory designed to study low energy neutrinos from gravitational stellar collapses. The detector, 1 kton of liquid scintillator, is sensitive to core-collapse supernovae via neutrino burst detection with 100% efficiency over the Galaxy. In this contribution we summarize the results of the last run, lasting from 2014, January 1st to 2021, May 5th for a total live time of 2672 days. In the lack of a positive observation in this data set and including all previously published results since 1992 for a total live-time of 10007 days, the upper limit on the rate of core collapse and failed supernova explosions out to distances of 25 kpc is 0.08 year^{-1} at 90% c.l..