Geophysical Research Abstracts
Vol. 20, EGU2018-17188, 2018
EGU General Assembly 2018

Exploring seismicity of Livingston Island (Antarctica) and surroundings using records of Bulgarian Broadband Seismological Station LIVV

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Bulgarian broadband seismological station LIVV was installed on 19.12.2015 near the Bulgarian Antarctic Base “St. Kliment Ohridski” on Livingston Island. During the first deployment period in astral summer 2015-2016 more than 2000 events of different nature are recorded. About 200 of these events are identified as local, regional and teleseismic earthquakes. Two location methods are used to calculate the epicenters of the local and regional events. The Golitsyn’s method is applied on the three components records of earthquakes from LIVV station with clear P wave onset. DHypo software with different velocity models is used to calculate epicenters of earthquakes recorded by LIVV station and two Argentinean-Italian (AI) stations ESPZ and JUBA. Using both methods is very appropriate technique to have stability of locations on Livingston Island and surroundings. The results obtained show comparatively high level of local seismicity in the eastern part of Livingston Island. Several earthquakes are located in the West from LIVV station. The magnitude estimates of the earthquakes are below 3.