

Complex seismological investigations near Bulgarian Antarctic Base

Bulgarian Antarctic seismic station LIVV was operational within three astral summers between 2015 and 2018 on Livingston Island, Antarctica. The estimated performance of the seismic equipment shows off the capabilities of the station to registere seismic events with different nature. More than 12000 seismic events were registered and the biggest part of them are connected with the seismicity of the glaciers. A big amount of local earthquakes was also registered. To locate the registered earthquakes we have used two methods – first one uses data from only one station and is based on Golitsyn’s method and Vincenty formulae and second one uses DHypo software with different velocity models and seismic phases from four Spanish stations deployed on Deception Island Volcano and two Argentinean-Italian (AI) stations. To study the glacial seismicity we have used different technics and procedures: 1) for epicenter estimations of one type of the icequakes a developed code for single station localization was applied; 2) GNSS measurements on the glacier Perunika surface were conducted and meteorological data were collected.

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