

and Hydroacoustic Observations from Recent Small Underwater Events in the South Atlantic Ocean

Small underwater events are often detected by the seismometer and hydrophone stations of the International Monitoring System (IMS) and the Global Seismographic Network. In this study, signals from the 15 November 2017 Reviewed Event Bulletin hydroacoustic event in the South Atlantic Ocean that occurred around 550km east of Argentina are analysed along with signals from a nearby depth charge detonation on 1 December 2017. The 15 November 2017 event was of interest as the epicentre is in the vicinity of the last reported position of the ARA San Juan, an Argentine Navy submarine. The epicentre estimate in this study, calculated with standard methods, is 46.0426S, 59.8096W, and is located close to the location of the wreck of the ARA San Juan. Hydroacoustic signals observed at two IMS hydrophone stations for the 15 November 2017 event contain significant energy at high frequencies which is inconsistent with an earthquake source. Frequency modulations are also observed in the amplitude spectra from both events and for the depth charge detonation these modulations are consistent with those expected from the known depth and yield. Modulations observed from the 5 November 2017 event differ from those observed for the depth charge event.

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