

Data Analysis of Earthquakes Received on the Newly Re-Established HA04 Hydroacoustic Stations of the CTBTO International Monitoring System

During December 2016, the Comprehensive Nuclear-Test-Ban-Treaty Organization (CTBTO) re-established the hydro-acoustic station HA04 close to the Crozet Islands in the Indian Ocean as part of the International Monitoring System's (IMS) world-wide, multi-technology sensor network. The station is composed of two triads of hydrophones located to the north and south of Possession Island. High quality hydro-acoustic data are being received continuously at CTBTO since the deployment of the station where signals from whale calls, earthquakes and radiated noise from transiting ships have been detected. In this presentation, emphasis is given to four earthquake events located on the Indian Ocean Ridge at a range of 850-2500 km to the north of the station and in an azimuthal direction of 145-205 degrees. Preliminary analysis of the propagation paths and received signal levels from the events to the station has been performed considering the complex local bathymetry and spatio-temporal variations in the water column sound speed. An assessment will be performed, to the extent possible, concerning the impact of these environmental factors on the propagation in this particular scenario with the aim of examining potential improvements to the International Data Centre's (IDC) automatic processing algorithms.

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