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Remote detection of hydroacoustic signals potentially associated with the sinking of SS El Faro using CTBT IMS hydrophone data

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On 1 October 2015, the cargo ship SS El Faro was lost approximately 120 km east of Long Island, The Bahamas, during the Hurricane Joaquin. Here, we analyze underwater sound phases potentially associated with the loss of this vessel, recorded by station HA10 of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) International Monitoring System (IMS) located at Ascension Island, Mid-Atlantic Ocean. Results from progressive multi-channel correlation and spectral analysis of broadband arrivals at both hydrophone triplets of HA10 suggest that at least one impulsive, in-water event occurred within minutes after communication with SS El Faro had ceased and emergency buoys were activated. The derived event origin notably coincides with the confirmed location of the wreckage on the seafloor. Our findings are consistent with results from 2D transmission loss modeling and further highlight the exceptional capabilities of the IMS hydroacoustic network for detecting both natural and non-natural events in the global ocean.

Promotional text

Using hydrophone data recorded at IMS station HA10, Ascension Island, we investigate underwater sound phases potentially linked to the sinking of the cargo ship SS El Faro during the 2015 Hurricane Joaquin.

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