



## **On the source of microseisms: long-term variations in hydro-acoustic waves from interferometry**

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The background noise in the solid earth, oceans and atmosphere peaks around 0.2 Hz as a result of oceanic wave-wave interaction. The associated seismic and acoustic wavefield are extensively studied and referred to microseisms in the earth and microbaroms in the atmosphere. Here, the acoustic component in the ocean is analysed. Over 10 years of hydrophone recordings in the Atlantic Ocean, near Ascension Island, are evaluated in order to determine seasonal and inter-annual variations. Interferometry is applied to hydrophones having an inter-sensor distance of over 125 km. The station is part of the International Monitoring System for the verification of the Comprehensive Nuclear-Test-Ban Treaty. Several waves are identified, i.e. Scholte waves and other seismo-acoustic waves. Seasonal changes are associated with Northern and Southern hemisphere winter and summer conditions. The strength of the cross-correlations varies over the years. Long-term trends are studied and attributed to changes in the source and medium.