ID: Type: **Oral**

Modeling and the CTBTO Network

The oceans are generally not quiet places. Sound sources are ubiquitous and include surface wind including storms, distant and local shipping, seismic surveys, earthquakes, marine mammals and lightning. In the low frequency band (below 125 Hz), sound travels to very long distances. In this paper, we present a modeling approach based upon the efficient Parabolic Equation that can generate the basin soundscape for low-frequency sound. Satellite Automatic Identification System (AIS) data provides real-time high-resolution full global coverage of the shipping distribution. This coupled with surface wind measurements and model forecasts permits near real-time soundscape (or ambient noise) modeling. The challenge is to improve our understanding of sound source levels. This is best done through a comprehensive comparison of sound predictions and measurements taken from the International Monitoring System (IMS) hydroacoustic data. For this talk the Wake Island and Ascension Island data will be compared with the soundscape model simulations

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Track Classification: 3. 3-D modelling for long-range hydroacoustic signal propagation