ACOUSTICS2008/3048
Effects of volume and boundary variability on the statistics of received signal frequency

Jeremy Joseph, Richard Lee Culver and Colin Jemmott
ARL Penn State, PO Box 30, State College, PA 16804, USA

The overall goal of our research is to incorporate statistical knowledge of received passive signal variability and uncertainty into the signal processing. To accomplish this goal we need to better understand the sources of this variability, which are due in part to propagation through the ocean channel. Propagation introduces significant variation in received signal parameters through rough surface and bottom scattering as well as volume inhomogeneities. This talk focuses on the variability introduced by these sources and its effect on the statistics of the frequency spectrum of the received signal. We consider low frequencies, for which theoretical predictions are compared with PE-based simulation results. Work supported by ONR Undersea Signal Processing Code 321US.