

ACOUSTICS2008/1576
**Tools and techniques to measure environmental parameters that
improve mid-frequency sonar performance predictions**

John Osler, Sean Pecknold and Paul Hines
Defence R&D Canada - Atlantic, P.O. Box 1012, Dartmouth, NS, Canada B2Y3Z7

The performance of mid-frequency active sonar systems in littoral waters depends upon several environmental factors and their variability in space and time. These factors include seabed scattering strength, bottom loss, and the water column sound speed profiles. DRDC Atlantic has developed experimental apparatus and techniques to measure these environmental parameters in order to enhance the accuracy of sonar performance estimates in the mid-frequency band, 1 to 10 kHz. Experiments have been conducted during sea-trials on the Scotian Shelf and Strataform area on the New Jersey Shelf. In some instances, these experiments have been in conjunction with international research partners to provide an inter-comparison between experimental techniques and/or a comparison of rapid environmental assessment techniques with more traditional, and time-consuming, methods. In this talk, we will demonstrate that predictions of sonar system performance improve when the environmental parameters obtained with these techniques are used, rather than parameters from archival sources.