

ACOUSTICS2008/3225
Simultaneous nearby measurements of acoustic propagation and high-resolution sound speed structure containing internal waves

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On two occasions during the SW06 experiment, towed CTD chain measurements were made close to an acoustic propagation path. The acoustic path was 1 km long, oriented roughly in the direction of propagation of large nonlinear internal waves. On the first occasion, large nonlinear internal waves were absent, and on the second occasion, they were present. The CTD chain was towed in loops around the acoustic path, roughly 200 m on either side of the path. On the first occasion, 17 loops were made in about 5.5 hr, and on the second occasion, 7 loops were made in about 2.5 hr. Throughout these time periods, acoustic transmissions between 2 kHz and 10 kHz were carried out. The acoustic environment on the path is estimated by space and time interpolation between the tows on the two sides of the path. The acoustic data is compared with propagation modeling in this environment.