

## ACOUSTICS2008/1270 Geoacoustic inversion using combustive sound source signals

Gopu Potty<sup>a</sup>, James Miller<sup>a</sup>, Preston Wilson<sup>b</sup>, James Lynch<sup>c</sup> and Arthur Newhall<sup>c</sup>

<sup>a</sup>University of Rhode Island, Department of Ocean Engineering, Narragansett Bay Campus, Narragansett, RI 02882, USA

<sup>b</sup>The University of Texas, Mechanical Engineering Department, Austin, TX 78712, USA

<sup>c</sup>Woods Hole Oceanographic Institution, 98 Water Street, Bigelow 203A, MS-11, Woods Hole, MA 02543, USA

In the summer of 2006, Combustive Sound Sources (CSS) were deployed in shallow waters off New Jersey during the Shallow Water experiment (SW 06). The depth of these sources were 26 m in water depths of the order of 100 m. CSS are low frequency broadband sound sources and suitable for modal dispersion based inversion. CSS data collected on various receivers (Single Hydrophone Receiving Units (SHRU), Vertical Line Array, etc.) will be used for the inversions. The inversions are based on an iterative scheme using a new time-frequency analysis technique (dispersion based short-time Fourier transform) in which each time-frequency tiling is adaptively rotated in the time-frequency plane, depending on the local wave dispersion. Data from various receivers will be used to investigate the spatial variation in compressional wave speed. Compressional wave attenuation will also be estimated using modal amplitude ratios. Inversion results will be validated by comparing the data with model predictions. [Work supported by the Office of Naval Research]