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# Local bottom characterization using an autonomous underwater vehicle

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In the past decade the usage of autonomous underwater vehicles (AUV) to sample properties of the underwater environment has increased. The advantages of using platforms are their autonomy and that operations can be performed covertly. In 2007, the CLUTTER'07 experiment was conducted on the Malta Plateau with the main aim of characterizing the underwater environment. An AUV was deployed at a particular site on the Plateau to demonstrate the feasibility to infer bottom properties using such an autonomous platform. The AUV was equipped with 2 sound sources covering a frequency band 800-3500 Hz, and the transmitted signals were acquired on a bottom moored vertical array. The mission of the AUV was to perform a linear track of ∼1000 m passing the vertical array as close as possible while transmitting every second from the sound sources. This experimental configuration is similar to the move-out or wide-angle reflection measurements. The received signals are inverted for geoacoustic properties using both matched-field techniques and processed for direct bottom reflection properties. The results obtained are compared to independent findings from different experiments using various types of equipment at different seasons in the same area. [Research sponsored by NURC, ONR OA321 and the CLUTTER Partners]