# Using ocean bottom ambient seismoacoustic noise data for crust and upper mantle characterization

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Possibility of using ambient seismoacoustic noise, formed at the bottom of the ocean by surface waves of the Scholte type, to study the structure of the geological environment using the methods of passive seismoacoustic tomography is investigated. Based on experimental data processing, obtained by ocean bottom broadband seismic stations network in the area of Hawaiian Islands, results of Earth's crust and upper mantle reconstruction are presented.

Solution of the inverse problem consists of two stages. First, the dispersion relations of the phase and group velocities of surface waves are estimated based on the analysis of the cross-correlation function of an ambient noise between different pairs of bottom seismic receivers. At the second stage, the problem of inversion of the estimated dispersion curves into a vertically layered elastic model of the lithosphere is solved. Comparison of the inversion results with known velocity models of the Hawaiian region demonstrates the reliability of velocity estimates obtained using the discussed passive approach. The results also indicate the possibility of reducing the time of data collection during an experiment compared with methods using signals from earthquakes, which should illuminate the area of study from different directions.