Analysis of the Field of Narrow-Band Signals Percolating into Marine Bottom

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Abstract: The possibility of kinematic parameters acquisition from acoustic field using vector-phase measurements of marine water was researched. The developed method includes measurement reception and localization of complex phase-manipulated signals in time. Such kinematic parameters as the phase and group velocities are calculated by way of reciprocal processing of acoustic pressure canals and oscillation velocity (or pressure gradient) in the vector receiver. Concept of spatial-interference structure invariant of acoustic field presents the availability to apply notion "invariant velocity" as a kinematic parameter that possesses considerably lover spatial-temporal variability. Stringent solution of Helmholtz equation for the pressure, oscillation velocity and energy stream, as Green's function, indicated that theoretical explorations satisfactorily were confirmed by the experimental data.

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