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ON OPTIMIZATION OF THE ACOUSTIC HALINOMETRY IN ARCTIC

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Abilities of the acoustic halinometry in the Arctic Ocean are investigated. The sound field structure (amplitude, phase and travel time of the sound signal) depends on the sound speed field in the ocean, while salinity determines the sound speed only in the uppermost layer of the Arctic Ocean. To reduce influence of other factors on the acoustic halinometry (such as the Atlantic layer temperature variability) one must place the acoustic transmitter and receiving arrays in the layer where the first-mode sound signal is concentrated. The salinity variability in the upper ocean may be estimated through variability of the space-time cross-correlation function between signals propagating along a stationary acoustic path.