DOI: 10.37102/1992-4429_2024_47_01_02

ESTIMATION OF THE DOPPLER SHIFT BY COMPLEX SIGNALS IN A HYDROACOUSTIC WAVEGUIDE

A.V. Burenin, V.V. Didenko

This paper presents a technique for estimating the Doppler frequency shift of the probing signal. The technique is based on the use of a signal packet consisting of at least two identical complex signals with "good" autocorrelation properties, and the operation of autocorrelation ("convolution" of the received signal with itself) at the receiver. The results of experimental testing of the technique, carried out on August 17, 2013, are presented. The obtained field data are compared with GPS measurements and algorithms for estimating the Doppler shift.

Keywords: Doppler effect, Doppler shift estimation, complex signals, M-sequence on a carrier, chirp signals, autocorrelation.

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About the authors

BURENIN Alexandr Victorovich, PhD, Senior research scientist
V.I. Il'ichev Pacific Oceanological Institute of the Far Eastern Branch of the Russian Academy of Sciences
Address: 43, Baltiyskaya Street, Vladivostok, 690041, Russia
ORCID: 0000-0003-0062-4510
Research interests: ocean acoustics, acoustic navigation, acoustic ranging, underwater acoustic communication, acoustic tomography
Phone: +7 (423) 231-1631, **fax**: +7 (423) 231-2573
E-mail: alex_bu@poi.dvo.ru, shurick_burenin1@mail.ru

DIDENKO Vadim Viktorovich, master's student, engineer of the acoustic tomography laboratory
V.I. Il'ichev Pacific Oceanological Institute of the Far Eastern Branch of the Russian Academy of Sciences
Address: 43, Baltiyskaya Street, Vladivostok, 690041, Russia
Research interests: ocean acoustics, acoustic navigation, acoustic ranging, underwater acoustic communication, acoustic tomography, numerical modeling
Phone: +7 (423) 231-1631, **fax**: +7 (423) 231-2573
E-mail: didenko.vv@students.dvfu.ru