

# REGISTRATION AND LOCALIZATION OF A HYDROACOUSTIC SOURCE BY A COASTAL MEASURING COMPLEX

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The actual problem of the presented research is to study the peculiarities of acoustic signal transformation at the geosphere boundary in the “water-land” transition zone. The signal energy of a moving hydroacoustic radiation source is transformed in the coastal zone into seismoacoustic oscillations recorded by a coastal two-coordinate laser deformograph. The spatial position of the measuring components of the laser deformograph makes it possible to localize the displacement of an object in the nearby water area based on the study of variations in the amplitude of the recorded signal. The methodology of the experiment based on the movement of the transmitter with constant speed and distance from the shore measurement system is described. As a result of the experiment, a stable registration of the seismoacoustic signal was obtained along the entire trajectory of the transmitter with a decrease in the amplitude of the received signal when it is at an angle close to 45 degrees. According to the results of the analysis of variations in the amplitude of the registered signal on differently directed components of the laser deformograph, the results of direction finding of the source of low-frequency hydroacoustic radiation were obtained, with the error in determining the direction to the hydroacoustic source ranging from 0.2 % to 10.5 %.

**Keywords:** two-axis laser strainmeter, hydroacoustic transmitter, amplitude modulation, transformation of acoustic signals

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