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**ON THE QUESTION OF THE MUTUAL INFLUENCE OF SONAR DEVICES WHEN PERFORMING A SURVEY BY A GROUP OF AUTONOMOUS UNDERWATER ROBOTS**

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**ABSTRACT**

On the example of the side-scan sonar (SSS), the estimates of the possible mutual influence of remotely acting acoustic devices in the process of performing survey-search operations by a group of autonomous underwater robots (AUV) were made. Two types of interference are considered: powerful interference due to direct penetration of sonar sounding pulses of one SSS to the receiver of another SSS operating on the adjacent AUV in the group and reverberation-interference due to reflections from the seabed towards nearly mirror directions. It is shown that, despite the high level of interference of the first type, they can be relatively easily eliminated by the correct choice of sonar survey parameters. The problem of detecting or minimizing the interference of the second type seems to be a much more complicated task, since their characteristics are virtually indistinguishable from the characteristics of useful signal.

**Keywords:** Group of autonomous underwater robots, side-scan sonar, directivity pattern, side lobes, mutual influence, interference, intensity, range, reverberation, linear-frequency modulation, matched filter, median filter.

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