

APPLICATION OF AUV “MMT-3500” FOR SCIENTIFIC RESEARCH IN THE ATLANTIC SECTOR OF THE ANTARCTIC

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The article presents some results of the «MMT-3500» AUV application for deep-sea researches in the Antarctic, carried out over several years by the Russian Academy of Sciences. In 2022, the AMK-87 complex expedition took place on the research vessel «Akademik Mstislav Keldysh» (voyage 87), when the «MMT-3500» AUV was used to study deep-sea ecosystems in Antarctica. The AUV, equipped with a set of devices for biological, hydrophysical and geophysical measurements (required by the program of the expedition) was created at IMTP FEB RAS. The AUV construction and the composition of its systems were previously modernized considering objectives of the research program. The AUV was used to carry out echolocation and photographic surveys of the bottom and biological objects, as well as measurements of the hydrophysical characteristics of the aquatic environment along various spatial sections at three deep-water stations. During this work, the navigation system of increased accuracy was used to determine coordinates of the AUV and targets. Intellectual AUV operator assistant program was developed to help AUV operators carry out missions. The paper presents scientific materials obtained during deep-sea diving of AUVs and gives an assessment of the research results.

Keywords: autonomous uninhabited underwater vehicle (AUV), deep-sea research, monitoring of marine bottom ecosystems, navigation complex, Antarctica.

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