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CONTROL METHOD OF AUV-FOLLOWER ON THE BASE OF VISUAL INFORMATION ABOUT AUV-LEADER POSITION

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Paper dedicated to development of synthesis method of high accuracy control system of AUV formation control in leader-follower strategy. The synthesized control system obtains accurate positioning AUV-followers relative AUV-leader with using information from onboard video cameras of AUV-followers. To ensure high control accuracy in the proposed method, an estimate of the movement parameters of the AUV-leader (its speeds and accelerations) is formed using previously received and stored information, and a prediction of its movement relative to the AUV-followers is made at intervals between updates of information received from video cameras. The results of mathematical simulation show the effectiveness of the proposed approach for the implementation of A UV formation control systems in the leader-follower strategy.

Keyword: autonomous underwater vehicle, formation control, image processing, optimization, approximation, motion prediction, parametric uncertainty, high accuracy control.

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