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Navigation of an AUV for investigation of underwater structures

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Abstract

There is a great demand for autonomous underwater vehicles (AUVs) to investigate artificial underwater structures such as piles and caissons in harbours, and risers and jackets of deep-sea oilfields. This paper proposes an autonomous investigation method of underwater structures using AUVs that is implemented by initially detecting the target objects, localizing them, then approaching them by taking video images while closely tracing their shape. A laser ranging system and a navigation method based on the relative position with respect to the target objects are introduced to realize this behaviour.



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