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## **On the Automatic Collision Avoidance System for Ships (1st Report)**

[Yoshitaka Furukawa](#), [Katsuro Kijima](#), [Hiroshi Ibaragi](#), [Wataru Ikeda](#) and [Yuki Matsunaga](#)

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**Summary:** Navigational safety is highly demanded in order to prevent marine accidents. However the reduction of personnel expenses is enforced recently to reduce total transportation cost and it means that the securement of crew who have an excellent skill becomes difficult. So the increase of sea disaster accident originated with the degradation of skill of sailors is concerned in the future and the introduction of an automatic navigation device is the one of the solution of such a problem.

In this paper, the improved algorithm to avoid colliding with a stopping ship is proposed. The effect of parameters on evasion navigation is examined by numerical simulation. Furthermore, model experiments were carried out using Real-time Kinematic GPS (RTK-GPS) at pond to verify the effectiveness of the algorithm for automatic collision avoidance. It is shown that the collision avoidance system functions well both on numerical simulation and model experiments.

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