

A Study on Prediction of Eddy Current Signals by Rolling of Warship



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In general, when a large magnetic flux is generated, it becomes possible to design high-performance electric devices, thereby increasing efficiency. However, in the defense field, especially in the case of the navy, the risk of attack by magnetic-sensitive mines increases because the magnetic materials constituting the ship generate magnetic field signals to the outside.

Warship are generally made of magnetic materials with electrical conductivity. While the ship is operating, the Earth's magnetic field is applied to the ship at a constant rate, but as it fluctuates due to waves, changes in magnetic flux that link the ship body occur. According to Faraday's law, eddy currents are generated and magnetic signals of eddy currents is generated externally. Therefore, research is needed on techniques for predicting eddy currents generated by vessel rolling.

In this study, a modeling technique for predicting eddy current signals of warships was proposed and the eddy current magnetic field signals generated from the equivalent model was analyzed.

Biography:

Sang Hyeon Im received the Ph.D degree in electrical engineering from Pusan National University, Busan, South Korea in 2020. From 2021 to now, he is an Assistant Professor with Dong Eui University, Busan.