World Academy of Science, Engineering and Technology
International Journal of Marine and Environmental Sciences
Vol:16, No:01, 2022

Research on Reflectors for Detecting Fishing Nets with Synthetic Aperture Radar Satellites

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Abstract : Fishing nets and floating buoys used in fishing can be washed away by typhoons and storms. The spilled fishing nets become marine debris and hinder the navigation of ships. In this study, we report a method of attaching a retroreflective structure to afloat in order to discover fishing nets using SAR satellites. We prototyped an omnidirectional (all-around) corner reflector as a retroreflective structure that can be mounted on a float and analyzed its reflection characteristics. As a result, it was clarified that the reflection could be sufficiently larger than the backscattering of the sea surface. In order to further improve the performance, we worked on the design and trial production of the Luneberg lens.

Keywords : retroreflective structure, spherical corner reflector, Luneberg lens, SAR satellite, maritime floating buoy
Conference Title : ICMDIS 2022 : International Conference on Marine Data and Information Systems
Conference Location : Rome, Italy
Conference Dates : January 14-15, 2022