

# Wireless Channel Models for Maritime Communication

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**Abstract:** *Due to the blue economy's rapid growth, maritime communication plays a significant role in broadband maritime operations. In order to provide broadband data service to the sea area, there has been an increasing interest in using higher frequency bands in addition to MF/HF/VHF bands. The two primary types of channels for an air-ground-sea communications network are air-to-sea (for communication links from, for instance, aircraft-based base stations or relays) and near-sea-surface (for communications from land to ship, ship to land, or ship to ship). The modelling of these maritime channel links is different from conventional terrestrial wireless channels in many ways because of the unique characteristics of the maritime propagation environment, such as sparse scattering, sea wave movement, and the ducting effect over the sea surface. This will have a significant impact on the transceiver.*

**Keywords:** Sparse Scattering, Sea Wave Movement, Ducting Effect

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**IJARSCT**

Impact Factor: **6.252**

**IJARSCT**

ISSN (Online) 2581-9429

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 2, Issue 1, November 2022

ACM Int. Conf. Underwater Netw. Syst. (WUWNet), New York, NY, USA, 2016, pp. 6:1–6:2.

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