

Computer Model for a Towed Submarine Communication Antenna

by

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Abstract

A finite difference computer model is developed to simulate the exposure statistics of a radio frequency buoyant antenna as it is towed in a random seaway. The model allows the user to prescribe antenna properties (length, diameter, density, etc.), sea conditions (significant wave height, development of sea), and tow speed. The model then simulates the antenna-sea interaction for the desired duration to collect statistics relating to antenna performance. The model provides design engineers with a tool to predict antenna performance trends, and conduct design tradeoff studies. The antenna envisioned is a submarine floating antenna which would enable communications at speed and depth, greatly enhancing the stealth and survivability of the US Navy's submarine force.

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