

Electrical Ship Demand Modeling for Future Generation Warships
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Abstract

The design of future warships will require increased reliance on accurate prediction of electrical demand as the shipboard consumption continues to rise. Current US Navy policy, codified in design standards, dictates methods of calculating the average demand power. Using several modern sources of information for the DDG-51 class ship, this thesis investigates the utility of current analysis techniques and examines possible improvements. This thesis expands upon a basic method of modeling and simulation to develop a design tool that would provide an improved method of predicting ship electrical loads with increased fidelity of the ship's electrical demand. These efforts ultimately allow a better understanding of ship behavior to enable decision making in all stages of Navy ship design.

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