

**Session Title:**

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**Abstract title: Model Based Design of Carbon Neutral Maritime Transportation System**

**Abstract text (within 100 words):**

Due to the existing infrastructure and the complexity of the maritime industry, decision makings for new technology adoptions and for policy design for decarbonization are very difficult. A framework to discuss the future visions of alternative fuels for decarbonization is proposed. The key concept of the framework is the model-based approach to describe the current practice of maritime transportation system in both qualitative and quantitative manners, to predict the uncertain and complex behaviors of the global maritime transportation system.