Sea Ice Research for the Influence of Climate Change on the Design of Ships and Offshore Structures

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Abstract
As the understanding of climate change evolves this knowledge needs to be reflected in the processes and methods related to the environmental design basis of ships and offshore units. The safety regime of a ship or offshore unit in sea ice is formed by a range of requirements. The implications for design and operations in Arctic regions are however not necessarily evident and are often integrated into regulations and standards. In most cases the environmental parameters may be explicitly expressed in the design equations or requirements, however a more difficult situation also arises when parameters affected by climate change are not openly stated. Recent research work is presented and considerations of climate change impact to illustrate potential positive and negative effects.

Keywords: *Climate Change, Sea Ice, Ships, Offshore Structures, Design Criteria.*

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Biography

Robert Bridges holds the current position of Ice Engineer, Development/Technology/Geosciences at Total S.A., France Specialist for ice engineering studies and providing technical expertise prior to, at start up, and during operations of a project. Contributes to the design and operation of floating production units, fixed platforms, LNG or oil terminals, coastal facilities, ships, etc, in cold regions where Total is involved. Responsible for research budgets, direct supervision, and engineering.