ExxonMobil Upstream Research

Sea Ice Loads on Offshore Arctic Structures

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11.00 am-12.30 pm @ Mason 142-A

Abstract

It has been estimated that the arctic contains about 25% of the world's undiscovered hydrocarbons. Therefore, there has been considerable research on characterizing the arctic to achieve safe and cost-effective oil and gas exploration and production operations. Field arctic developments pose new technical challenges due to the unique nature of the region in addition to its remoteness. One of the most significant challenges that face arctic developments is predicting sea ice loads on offshore structures due to the complexity of calculations which typically include quite a few assumptions. Due to the scarcity of available experimental data and the difficulty associated with conducting full-scale testing in severe sea ice conditions, research in this area have been mainly focused on developing analytical and numerical models in addition to small-scale physical model tests.

The objective of this presentation is to give an overview of the unique arctic environment and technical offshore structural design in that region with specific emphasis on methods to calculate sea ice loads on fixed base structures.

Biography

Victor Garas received his B.S. degree in Structural Engineering from Ain Shams University, Cairo, Egypt in 1999, his first M.S. degree in Civil Engineering from the University of Houston, TX in 2004, and his second M.S. degree and Ph.D. degree in Civil Engineering from the Georgia Institute of Technology in 2008 and 2009, respectively. His graduate research work included multi-scale characterization and modeling of civil engineering materials with special focus on cement-based materials.

Dr. Garas joined the ExxonMobil Upstream Research Company (URC) in 2009 and is currently serving as a Senior Research Engineer in the Ice Team of the Offshore Division. His research at URC is focused on characterizing the arctic environment and developing methodologies to achieve safe and economic oil and gas exploration and production operations in that region.

Lunch and drinks will be served
Employment opportunities will be discussed and resumes are welcomed