Fluid-Structure Interactions in Offshore Engineering

Deniz Gedikli
Assistant Professor
Department of Ocean and Resources Engineering
University of Hawai‘i at Mānoa

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Abstract

Technology, law and world’s appetite for more energy pushed oil-gas and renewable energy source exploration farther from the shores. Recent developments in this search have brought additional design challenges since these large offshore structures are more prone to the harsh environments around them. These factors require innovative approaches, in part because companies cannot operate in conventional ways in the Arctic region and in deep sea. This topic has critical importance to the offshore industry, particularly for the cost-effective development of new ocean structures such as floating offshore wind platforms and wind energy systems.

In this seminar, I will talk about some of the current engineering challenges associated with deep water explorations, and how we attempt to solve them. I will also talk about some of my on-going projects which include design of offshore marine structures in ice infested regions, experimental fluid-structure interactions, ice-structure interactions and ice-wave interactions.