

You are cordially invited to a seminar organized by Centre for Offshore Research and Engineering (CORE) and Department of Civil and Environmental Engineering

“Two-degree-of-freedom Flow-induced Vibration of a Rotating Circular Cylinder”

By

Zou Qunfeng

Ph.D. student, Chongqing University

Date: Wednesday, 9 October 2019
Time: 4:30 pm to 6:00 pm
Venue: E1 #06-05
Faculty of Engineering,
National University of Singapore

Abstract

The phenomenon of flow past bluff bodies appears in many engineering applications, such as in heat exchangers, cooling tower in power plant, long-span suspension bridges, and marine risers. The elastically mounted bluff bodies experiences flow-induced vibration (FIV) when they are exposed to transverse fluid flow. In most cases, FIV needs to be suppressed to avoid fatigue damage to structures. However, in some applications, it is desirable to enhance oscillation when extracting energy such as wind energy and hydro-energy by FIV. The control of FIV is necessary, and the rotation of bluff body is one control method. For the FIV of circular cylinder in two-degrees of freedom (2-DOF), the skewing of vibration in the cross-flow direction occurs due to the Magnus effect caused by rotation. This seminar presents the latest research to better understand the influence of rotation rate on 2-DOF FIV, in order to improve control of FIV.

About the speaker



Zou Qunfeng is currently a Ph.D. student in the School of Energy and Power Engineering, Chongqing University. He joined Power China as a field engineer and has participated in the construction of thermal power plants after graduating with a Bachelor' degree. His research are involves the flow-induced vibration of bluff body and streamlined construction.

Contact Person: Assoc. Prof Qian Xudong: 6516 6827, Email: qianxudong@nus.edu.sg
Assoc. Prof Low Ying Min: 6516 4127, Email: ceelowym@nus.edu.sg
General Enquiry: Ms. Ivy Poh Tel: 6516 6853, Email: ceepab@nus.edu.sg

Location



Pre-registration is not required. All are welcome and admission is free