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Enhancing Oscillation Amplitude Response Generated by Vortex Induced Vibrations Through Experimental Identification of Optimum Parameters

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Abstract : Vortex induced Vibrations (VIV) is a phenomenon that occurs as a result of a flow passing by a bluff body. This phenomenon has been mainly studied to be suppressed to prevent fatigue and instability in offshore platforms. In 2006, some studies were conducted to maximize VIV instead of suppressing it, as these studies claimed that VIV is a potential method of generating energy. The aim of this paper is to identify factors for maximizing oscillation amplitude generated by VIV in order to enhance the energy harnessed through this method. The experimental study in this paper will examine the effect of oscillating cylinder diameter, surface roughness, the location of surface roughness with respect to the centerline of the oscillating cylinder and the velocity on the oscillation amplitude of the used module.

Keywords : energy, generation, generating, vibration, vortex.
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