

Abstract Submitted  
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**Vortex Induced Vibration of an Inclined Cylinder in Flow** ANIL JAIN, YAHYA MODARRES-SADEGHI — The Vortex Induced Vibration (VIV) of a cylinder inclined to the incoming flow is not studied as extensively as the normal-incidence case. For a rigid inclined cylinder, it is believed that the cylinder behaves similarly to a vertical one if the component of the flow velocity normal to the cylinder axis is considered. We investigate the extent to which this assumption is valid by conducting a series of experiments on a flexibly mounted cylinder placed inclined to the incoming flow with various angles of inclination in a Reynolds number range of 500 - 10,000. The cylinder, mounted on springs, is placed in the test section of a recirculating water tunnel, and for each angle of inclination, we increase the flow velocity gradually, and measure the displacement and frequency of the resulting vibrations. We examine how various angles of inclination result in various lock-in regions (large-amplitude vibrations) and we determine the critical angle of inclination beyond which the axial component of the flow velocity will have a non-negligible influence on the observed vibrations.

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