

عنوان مقاله:

Numerical Investigation of Flow Induced Vibration of a Cantilever Tube

محل انتشار:

دومین کنفرانس بین المللی آکوستیک و ارتعاشات (سال: 1391)

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نویسندگان:

Behnam Ghadimi - School of Mechanical Engineering, College of Engineering, University of Tehran, Tehran

Mohammad Taghilou

Hossein Shokouhmand

خلاصه مقاله:

Flow induced vibration of tube bank structures, could has the harmful effects on a system. In the current work vibration of cantilever tube in the present of fluid flow is investigated. For this purpose the cantilever tube modeled as a simple mass-spring system. The numerical results are compared with Blevins and Coughran works (J. Fluids eng., vol.131, 2009), for reduced velocity between 5 and 8, the mass ratio of 5.02 and the structural damping ratio of 0.05. Numerical results predict the range of reduced velocity, which the amplitude of vibrations raises, but, the upper branch of amplitude is in lower values than in experimental. Finally variation of amplitude, L C and D C versus time, and vortex shedding are plotted.

کلمات کلیدی:

Flow induced vibration; Vortex shedding; Cantilever tube; Mass-Spring system

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