The Steady-State Response Analysys of Flexible-Coupling-Rotor Systems

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Abstract

In this paper, a modeling procedure is presented to deal with the steady-state analysis of rotor systems with rubber cushion-type flexible couplings. The rubber cushion-type flexible coupling was modeled by an equivalent spring and the effect of misalignment was investigated. Moreover, we introduce the flexible coupling model in combination with the FEM model of rotating shafts to develop a complete formulation of a coupling-rotor system. Finally, to illustrate the effects of the coupling misalignments on the dynamic behavior of the system, numerical exampLes of this coupling-rotor system are presented.

Keyword：rubber cushion, flexible coupling, misalignment, rotor.