

VIBRATION SUPPRESSION OF A ROTOR SYSTEM BY A MAGNETIC DAMPER

**Yukio Ishida
Tsuyoshi Inoue**

Nagoya University
Furo-cho, Chikusa-ku, Nagoya, 464-8603
JAPAN

ABSTRACT

A magnetic damper is known as a useful device for reducing a vibration of reciprocating machinery. However, for the rotating machinery, this magnetic damper causes self-excited oscillations. Various studies have been reported about it.

We investigate the effect of the magnetic damper on many kinds of resonance phenomena in a rotor system, theoretically and experimentally. As a result, we clarified that there is damping effects of the magnetic damper on the nonlinear phenomena, such as the subharmonic oscillation of order $1/2$, of the rotor system.