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### 转子-SFDB系统通过共振时的瞬态动力特性

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### THE TRANSIENT DYNAMIC PERFORMANCES OF A ROTOR-SFDB SYSTEM DURING PASSAGE THROUGH RESONANCE

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摘要

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**摘要** 本文对一个支于挤压油膜阻尼器轴承的柔性转子升降速通过共振时发生跳跃现象的瞬态过程进行了试验研究和理论分析,探讨了油膜压力边界状态,不平衡参数、转速范围与跳跃现象之间的相互关系,所得结论对于挤压油膜阻尼器的工程设计具有实际意义。

**关键词:** 挤压油膜阻尼器 通过共振 跳跃现象

**Abstract:** An experimental and theoretical investigation on the transient dynamic performances of a flexible rotor-SFDB system during passage through resonance is presented. The relationship among the boundary condition of oil-film pressure, unbalance load, speed range and jump phenomenon is discussed and a parameter of critical unbalance load for jump phenomenon,  $u_{cr}$ , is introduced. The parameter  $u_{cr}$  should be considered as the limit value of unbalance load of the rotor system in engineering designs.

**Keywords:** squeezed oil-film damper through resonance jump phenomenon.

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