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### 航空发动机整机动力学研究进展与展望

陈予恕, 张华彪

哈尔滨工业大学 航天学院, 黑龙江 哈尔滨 150001

### Review and Prospect on the Research of Dynamics of Complete Aero engine Systems

Chen Yushu, ZHANG Huabiao

School of Astronautics, Harbin Institute of Technology, Harbin 150001, China

摘要

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**摘要** 对近年来航空发动机整机动力学的研究现状、进展进行了综述,包括双转子系统固有特性计算、转子-滚动轴承系统动力学、转子叶片振动、发动机机匣动力学、机动飞行转子系统动力学、航空发动机转子碰摩动力学、航空发动机转子裂纹以及整机动力学等。最后对航空发动机整机动力学今后工作研究的方向进行了展望。

**关键词:** 航空发动机整机动力学 双转子系统 转子-滚动轴承系统 转子叶片振动 机匣 机动飞行 转子-机匣碰摩 转子裂纹

**Abstract:** This paper provides an overview on the research of the dynamics of complete aero-engine systems in recent years. The review includes the calculation of the dynamic characteristics of dual-rotor systems, dynamics analysis of rotor-roller bearing systems, research on the vibration of rotor blades, analysis of the dynamic responses of the casing, the rotor-dynamics in maneuver flight, dynamics analysis of the rubbing of rotor-casing systems, dynamics of the cracked rotor systems, etc. Finally, discussions are made to propose certain directions for future research.

**Keywords:** dynamics of a complete aero engine system dual rotor system rotor roller bearing system vibration of rotor blades casing maneuver flight rubbing of rotor casing system cracked rotor

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Corresponding Authors: 陈予恕, Tel: 0451-86402822 E-mail: yschen@hit.edu.cn Email: yschen@hit.edu.cn

About author: 陈予恕(1931-)男,教授,中国工程院院士。主要研究方向:非线性动力学。Tel: 0451-86402822 E-mail: yschen@hit.edu.cn; 张华彪(1984-)男,博士研究生。主要研究方向:非线性动力学,转子动力学。Tel: 0451-86402822 E-mail: hbzhang5220@foxmail.com

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