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## 关于一种宏观疲劳裂纹扩展特性假说的探讨

韩玉林

南京航空航天大学测试工程系, 南京, 210016

### HYPOTHESIS ABOUT MACRO CRACK FATIGUE PROPAGATION CHARACTERISTICS

Han Yulin

Measurement and Testing Department, Nanjing University of Aeronautics and Astronautics, Nanjing, 210016

摘要

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**摘要** 提出一个关于宏观疲劳裂纹扩展特性的假说: 用不同的方法分析宏观疲劳裂纹扩展数据, 宏观疲劳裂纹扩展可以表现出不确定性和确定性两种不同的特性。给出一种图形分析法, 并用该方法分析了16MnR钢板的16套宏观疲劳裂纹扩展实验数据, 分析结果验证了该假说。

**关键词:** 疲劳 宏观裂纹 裂纹扩展 不确定性 确定性

**Abstract:** A hypothesis about macro crack fatigue propagation characteristics is presented. The hypothesis proposes that macro crack fatigue propagation can show two kinds of opposite characteristics, non deterministic and deterministic, if macro crack fatigue propagation data are analyzed by different ways. A graphical analysis method is developed in this paper. Then the method is used to analyze 16 sets of macro crack fatigue propagation experiment data of 16MnR steel plate. The analysis results verified the hypothesis.

**Keywords:** fatigue macro-crack crack propagation non-determinacy determinacy

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