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谱载荷作用下的疲劳裂纹扩展寿命

杨秉宪

北京航空学院

A CRACK GROWTH FATIGUE LIFE UNDER SPECTRUM LOADING

Yang Bingxian

Beijing Insititue of Aeronautics and Astronotics

摘要

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**摘要** 本文根据过载迟滞效应中产生推迟延缓的机理,得出了计算推迟延缓参数的公式。提出了对拉伸过载和拉-压过载作用下的裂纹扩展计算模型。用本模型可以计算复杂谱载荷作用下的疲劳裂纹扩展寿命。本文计算了几种材料在不同加载条件下的迟滞效应。计算了飞机机翼加劲板和飞机起落架旋转臂在复杂谱载荷作用下的疲劳裂纹扩展寿命。计算结果与实验结果相当符合。

**关键词:**

**Abstract:** Based on the mechanism of delayed retardation,an analytical equation for predicting the retardation parameter has been formulated.A model for predicting tie retardation under tensile overloads and tensile-compressive overloads is put forward.We can predict the fatigue life of structures under complex spectrum loading by the present model.Numerical examples for the retardation of some specimens under different loading conditions have been carried out by the present model.The fatigue lives of the stiffened panel of a wing and the landing gear of an aircraft under spectrum loadings also have been predicted.The results quite agree with experimental data.

**Keywords:**

Service

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