# 水泵疲劳寿命预测中应力计数算法研究Counting Method of Stress and Application in Fatigue Life Prediction of Pump

高江永 王福军 张志民

中国农业大学

关键词： 水泵 疲劳寿命 寿命预测 循环计数 Miner准则

摘 要： 提出了水泵零件疲劳寿命预测的主要思路，讨论了疲劳寿命预测的关键算法——应力计数算法。针对传统应力计数算法存在应力循环提取失效的缺陷，引入临界净应力的概念，提出了对传统计数算法的改进措施。并将改进后的应力计数算法应用于一台轴流泵叶轮的疲劳寿命预测；同时结合该算例，详细说明了二维概率Miner准则疲劳寿命预测的关键步骤。The life prediction of the pump and the counting method of stress were the subjects of this investigation. Aiming at the defect of the previous consideration that failed in attempts to count stress cycles, the concept of critical net stress was proposed to modify the counting principle. The improvements were made based on the concept of critical net stress. The improved counting method for predicting the fatigue life of an axial flow pump impeller was implemented. In addition, the key steps of the fatigue life prediction method were introduced based on 2-D probabilistic Miner-rule.

查看全文（请使用Adobe Acrobat 6.0版本浏览） 返回首页 引用本文