

## 基于支持向量机的航空发动机叶片超声检测

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摘要:

支持向量机(SVM)是一种具有出色学习性能的新型机器学习方法,它能够较好地克服神经网络容易出现的过学习、网络结构难以确定以及局部极小等缺点。研究了小波包变换提取发动机叶片缺陷特征向量的问题,提出一种基于支持向量机的航空发动机叶片超声检测方法。实验表明,基于小波包分解提取特征向量结合支持向量机的识别方法,能够有效地区分发动机叶片部件的几种典型缺陷。

关键词: 特征提取, 支持向量机, 缺陷识别

## ULTRASONIC TEST OF AERO-ENGINE BLADES BASED ON SUPPORT VECTOR MACHINE

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**Abstract:**

Support Vector Machine (SVM) is a new type of machine study method which has excellent study propensity. It can overcome the disadvantages of Neural Network (NN) such as over-studying, uncertainty of the structure and local minimization problems. Feature vectors of flaws in aero-engine blades were extracted by wavelet packet transform (WPT). A new type of ultrasonic test based on SVM was presented in the detection of aero-engine blades. Through the real tests of aircraft blades, the method could classify the typical flaws in the engine blades.

**Keywords:** feature extraction, Support Vector Machine, flaw identification

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