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刀具磨损估计的多传感器融合神经网络方法研究

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SENSOR FUSION VIA NEURAL NETWORKS FOR ESTIMATION OF TOOL WEAR

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摘要

研究了利用声发射、振动和电机功率信号经BP算法信息融合估计刀具磨损量的方法,采用简单有效的灰色模型关联分析法选择特征参数,研究了网络参数对性能的影响以及网络性能的稳定性。

关键词: 神经网络 特征选择 刀具磨损 仿真

Abstract:

An information fusion from multiple sensors (acoustic emission, vibration and spindle motor power) via back propagation algorithm to estimate tool wear is presented. A simple efficient method, relevant analysis using grey model theory, is used to select the features. The influence of parameters on performance of network and the robustness with respect to noisy and inaccurate sensor information are investigated.

Keywords: artificial neural network feature selection tool wearestimation simulation

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