

Neural Network Monitoring Strategy of Cutting Tool Wear of Horizontal High Speed Milling

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Abstract : The wear of cutting tool degrades the quality of the product in the manufacturing processes. The online monitoring of the cutting tool wear level is very necessary to prevent the deterioration of the quality of machining. Unfortunately there is not a direct manner to measure the cutting tool wear online. Consequently we must adopt an indirect method where wear will be estimated from the measurement of one or more physical parameters appearing during the machining process such as the cutting force, the vibrations, or the acoustic emission etc. In this work, a neural network system is elaborated in order to estimate the flank wear from the cutting force measurement and the cutting conditions.

Keywords : flank wear, cutting forces, high speed milling, signal processing, neural network

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