適應性RBF類神經網路於CNC車床即時溫升變形熱補償之研究

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摘 要

影響工具機的加工精度的因素主要來自工具機本身的幾何誤差以及切削期間結構受熱所產生的熱誤差。雖然熱誤差即時溫升補償技術在已實驗室上已經成功的驗證，但在廣泛使用前仍有一些問題需要解決，例如：最佳的溫度量測點、控制器技術與成本過高　　本研究利用RENISHAW的LT02S工件量測儀來架構車床主軸線上量測熱誤差系統，以便即時獲得切削加工過程中主軸徑向與軸向熱變形資料，並結合RBF類神經來建立主軸溫昇變形和切削參數之函數關係。此方法不但可以於線上量測得到動態熱變形數據，而且不需找尋最佳溫度位置與貼置溫度規，以達到經濟、精確且快速的效果。

關鍵詞 : 熱變形 ; 車床 ; 補償 ; 主軸

目錄

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