DSP 為主體之永磁同步馬達可變結構控制器設計與伺服驅動系統研製

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摘 要

本論文設計與研製以數位訊號處理器(DSP)為主體之永磁同步馬達控制器，將伺服驅動器及控制系統整合一起，並以數位訊號處理器來實現。伺服驅動器設計以數位信號處理器完成向量控制模組並研製驅動器硬體電路，達成以弦波方式驅動永磁同步馬達。 本論文也提出－個新型可變結構控制器，此新型控制器僅使用輸出變數，藉由線性矩陣不等式理論應用在非匹配不確定輸出回授可變結構系統，本論文之新型理論能有效保證系統在順滑模式下具有穩定性且有良好性能。另－重點是若滿足某些條件，本法能夠完全去除非匹配不確定成份之影響。 此一新型可變結構控制理論應用在以數位訊號處理器為主體之永磁同步馬達控制，經由實驗證明本法可以達到極佳的性能指標。

關鍵詞 : 永磁同步馬達 ; 數位訊號處理器 ; 可變結構系統

目錄

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