Optimal Neural-fuzzy Approach for Current/voltage-controlled Electromagnetic Suspension System

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摘 要

對於電磁懸掛系統，本文中將使用不同於以往的控制器設計法，過去的設計法大部分是將非線性的模型給線性化，或是經由複雜的計算來得到控制法則，這樣的方法過程都十分的繁雜。所以本論文提出整合類神經網路及最佳模糊控制器，來達到控制系統的作用。文中所使用的是一個 6 層的網路，透過類神經網路訓練的功能，我們能夠得到想要的模糊模型－affine T-S fuzzy model、linear T-S fuzzy model，而根據得到的模糊模型決定我們的最佳模糊控制器。這樣的整合設計對於系統的非線性及不確定性，將不用再刻意去考慮，就可以有很好的效果。

關鍵詞 : 電磁懸掛系統 ; 最佳模糊控制器 ; 模糊類神經網路

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