

Continuous Damping Control of Semi-Active Suspension Based on CAN Bus

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ABSTRACT

In this research, a study of semi-active suspension using an adjustable shock absorber vibration control is presented. There are thirty-second kinds of damping selections in the adjustable shock absorber. The main structure of the adjustable shock absorber includes an adjusting element within a conventional shock absorber. A stepping motor is driven to rotate the adjusting element. The motor actuates the adjusting value to change the amount of hydraulic fluid which bypasses the damping passage between two hydraulic chambers to achieve the desired damping coefficient. In this paper, the continuous damping controllers are studied to improve ride comfort and driving safety. Furthermore, a new testing rig is designed to obtain the damping coefficients and to implement our method. Finally, the CAN bus based control architecture is developed and used to implement this study.

Keywords : semi-active suspension, adjustable shock absorber, stepping motor, CAN bus

Table of Contents

封面內頁 簽名頁 授權書.....	iii	中文摘要.....	iv	英文摘要.....	v
誌謝.....	v	目錄.....	vi	圖目錄.....	vii
表目錄.....	x	符號說明.....	xvii	第一章 緒論	
1.1 前言.....	1	1.2 文獻回顧.....	2	1.3 研究動機與目的.....	4
第二章 半主動式懸吊系統之數學模型建立		2.1 懸吊系統之介紹.....	5	2.2 半主動式懸吊系統數學模型.....	8
2.3 量測平台之建立.....	10	2.4 可調阻尼之避振器的實驗結果與參數分析.....	16	第三章 測試路面建立與被動式懸吊系統之模擬分析	
3.1 測試路面之糙度指標之定義.....	23	3.2 懸吊系統之性能指標定義.....	31	3.3 被動式懸吊系統之模擬分析.....	34
第四章 半主動懸吊系統之連續阻尼控制		4.1 應用查表法之連續阻尼控制.....	54	4.2 最佳連續阻尼控制法之設計.....	56
4.3 連續切換阻尼控制法之設計.....	57	4.4 半主動懸吊系統之連續阻尼控制模擬.....	59	第五章 半主動式懸吊系統之即時控制架構	
5.1 基於CAN-bus 連續阻尼控制之即時控制架構.....	77	5.2 單晶片CAN-bus 控制器之介紹與系統整合.....	79	5.3 半主動式懸吊系統之實驗結果與討論.....	86
第六章 結論		6.1 結論.....	96	6.2 未來展望.....	96
參考文獻.....	98	附錄一.....	101		

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