

Study and Design on Differential Kalman Filter Applying in Channel Fading of Communication Systems

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ABSTRACT

The state of receiver channel of a wireless communication system estimated by the method of Differential Kalman filter is investigated in this paper. The purpose of this study is expected that the system performance of wireless communication system can be improved. On the other hand, the system bit error rate (BER) can be reduced by using the proposed algorithm. Both of the application in the traditional Kalman filter scheme and the Differential Kalman filter are proposed and applied in estimation the state of communication channel in this paper, and the Rayleigh fading channel is assumed in the approach. There are about one to 3 dB gain is obtained for Differential Kalman filter after our numerical analytic. Beside that, the later has own much simply algorithm than the former.

Keywords : Differential Kalman Filter ; Fading Channels ; Rayleigh distribut

Table of Contents

第一章 緒論	1.1 研究背景與動機	1.2 論文架構	第二章
卡門濾波器工作原理	2.1 前言	4.2.2 卡門濾波器系統狀態方程式定義	4
2.3 卡門濾波器之數學運算	6.2.4 卡門濾波器之性質	8.2.5 擴展式卡門濾波器	
10 第三章 通訊波道之理論探討	3.1 衰落波道 (fading channel) 之分類	14 3.1.1 小尺度衰落模式 (small scale fading model)	
	15 3.1.2 大尺度衰落模式 (largel scale fading model)		
17 3.2 使用分集成技術改善衰落現象	19 3.2.1 使用分集成技術改善衰落現象		
19 3.2.2 頻率選擇性衰落波道之改善技術	21 3.2.3 頻率非選擇性衰落或慢速衰落波道改善 技術		
22 3.3 衰落波道 (fading channel) 之模式	25 第四章 應用差分卡門濾波器於Rayleigh波道估測	4.1	
Rayleigh波道之數學模式分析	29 4.2 差分卡門濾波器於Rayleigh波道估測之分析	30 第五章 數值模擬結果	
32 第六章 結論	39		

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