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

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