April - June © 2014 Transactions; 1(2): 58-62

International Journal of Research and Applications

ISSN (online): 2349-0020 http://www.ijraonline.com/

Research Article

Channel Estimation using Modified Extended Kalman Filter Based Algorithm for Fading Channels

G.Rajender[1], T.AnilKumar[2] and K.Srinivasa Rao[3]

Corresponding Author:
tvakumar2000@yahoo.co.in

DOI:
http://dx.doi.org/
10.17812/IJRA.1.2(12)2014

Manuscript:
Received: 25th April, 2014
Accepted: 20th May, 2014
Published: 22nd June, 2014

ABSTRACT

The process of characterizing the effect of the physical channel on the input sequence is known as the Channel estimation. The Channel estimation techniques offer low complexity and better performance and are effectively used in communication systems. But they are also wasteful of bandwidth since they use training sequences to estimate the channel, so here; a method is used where the limited length of training sequence is transmitted. The Kalman based algorithm which can be used efficiently for channel estimation procedure. The kalman based algorithm channel estimator leads to a significant gain in performance as compared to the data-only estimator. This algorithm also allows us to predict the state of the system before the frame is actually received. In this paper, the channel estimation is done using Kalman based algorithm to predict the estimates of the state of system. Also the total harmonic distortion of the updated state is calculated and limited within a particular value. The channel under consideration is a Rayleigh fading channel.

Keywords: Channel estimation, Kalman Filter, Rayleigh fading, Total Harmonic Distortion

[1 3] Department of ECE, TRR College of Engineering, Hyderabad, Telangana, India -502 319
[2] Department of ECE, SR Engineering College, Warangal, Telangana, India -506 371

IJRA - Year of 2014 Transactions:
Month: April - June
Volume – 1, Issue – 2, Page No's: 58-62
Subject Stream: Electronics

Paper Communication: Author Direct

Paper Reference Id: IJRA-2014: 1(2)58-62