

## Blind Identification Channel Using Higher Order Cumulants with Application to Equalization for MC-CDMA System

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**Abstract :** In this paper we propose an algorithm based on fourth order cumulants, for blind impulse response identification of frequency radio channels and downlink MC-CDMA system Equalization. In order to test its efficiency, we have compared with the Zhang et al algorithm, for that we considered on theoretical channel as the Proakis's 'B' channel and practical frequency selective fading channel, called Broadband Radio Access Network (BRAN C), normalized for MC-CDMA systems, excited by non-Gaussian sequences. In the part of MC-CDMA, we use the Minimum Mean Square Error (MMSE) equalizer after the channel identification to correct the channel's distortion. The simulation results, in noisy environment and for different signal to noise ratio (SNR), are presented to illustrate the performance of the proposed algorithm compared with the results obtained with the Zhang et al algorithm.

**Keywords :** Blind identification and equalization, Higher Order Cumulants, MC-CDMA systems, \$MMSE\$ equalizer.

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