World Academy of Science, Engineering and Technology
International Journal of Energy and Environmental Engineering
Vol:9, No:05, 2015

Equalization Algorithm for the Optical OFDM System Based on the Fractional Fourier Transform

Authors : A. Cherifi, B. Bouazza, A. O. Dahmane, B. Yagoubi

Abstract : Transmission over Optical channels will introduce inter-symbol interference (ISI) as well as inter-channel (or inter-carrier) interference (ICI). To decrease the effects of ICI, this paper proposes equalizer for the Optical OFDM system based on the fractional Fourier transform (FrFFT). In this FrFT-OFDM system, traditional Fourier transform is replaced by fractional Fourier transform to modulate and demodulate the data symbols. The equalizer proposed consists of sampling the received signal in the different time per time symbol. Theoretical analysis and numerical simulation are discussed.

Keywords : OFDM, (FrFT) fractional fourier transform, optical OFDM, equalization algorithm
Conference Title : ICEBWE 2015 : International Conference on Energy, Biomass and Waste Engineering
Conference Location : Montreal, Canada
Conference Dates : May 11-12, 2015