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

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Abstract : Transmission over Optical channels will introduce inter-symbol interference (ISI) as well as inter-channel (or intercarrier) 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

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