

Scale-domain equalizer for wavelet-based ADSL

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Abstract: Current opinions vary on the question of suitability of wavelet-based multi-carrier modulation (MCM) systems for communication through dispersive time invariant channels such as digital subscriber line (DSL) and wireless communication environments. This is because there has not been sufficient work done on the analysis and improvement techniques for wavelet-based MCM systems. In this paper we propose a wavelet-based MCM scheme as an alternative to the current FFT-based system for use in an asymmetrical digital subscriber line (ADSL) and present analytical and simulation results showing improvements from the use of one-tap equalizers in the scale domain. © 2006 IEEE.

Index Keywords: Channel capacity; Computer simulation; Fast Fourier transforms; Multicarrier modulation; Wavelet analysis; Wireless telecommunication systems; Asymmetrical digital subscriber line (ADSL); Digital subscriber line (DSL); Multi-carrier modulation (MCM); Modems

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