

Reduction of Interference Level in CDMA Systems on the Basis of Analysis of Correlation Properties of Walsh Function Derivatives

Tatiana Sestacova, Gherman Sorochin

Department of Telecommunications and Electronic Systems
Technical University of Moldova
Chisinau, Republic of Moldova
tatiana.sestacova@sde.utm.md, gherman.sorochin@sde.utm.md

ABSTRACT

The article discusses the correlation properties of pseudo-random sequences (PRS) used in the formation of noise-like signals in data transmission systems with code division multiple access (CDMA). The analysis, carried out in Matlab environment, showed that correlation properties of the Walsh functions derivatives, used for generating PRS, have much better correlation characteristics than the original Walsh functions. Besides, these properties depend on the type of generating function of Walsh functions derivatives. Correlation properties of various generating functions were investigated. It was justified the advantage of using these signals in the development of CDMA systems in order to reduce the interference level of multiple access.