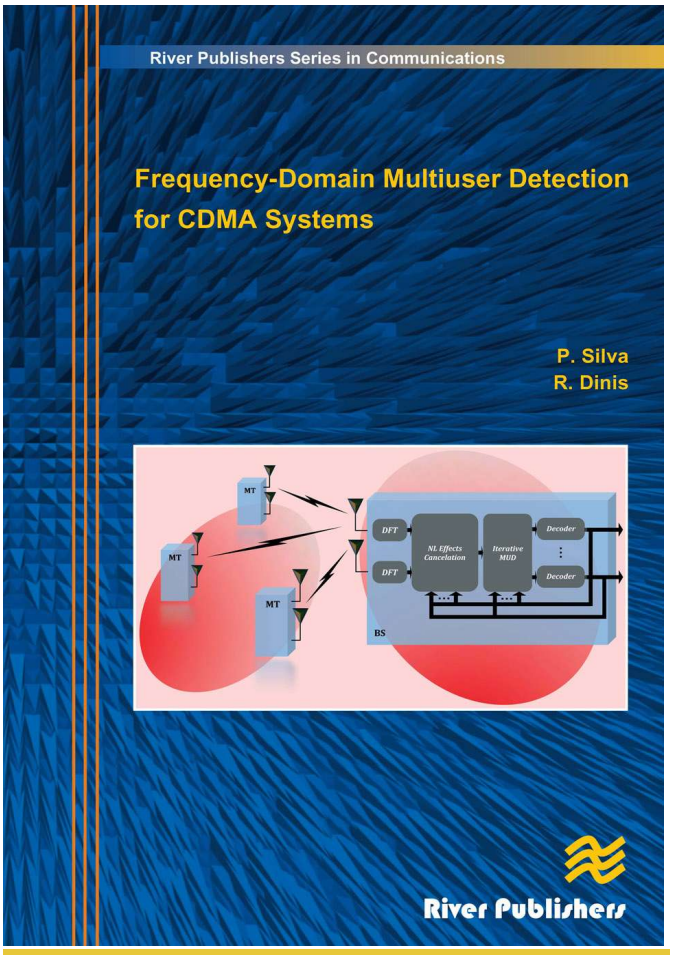
River Publishers

Frequency-Domain Multiuser Detection for CDMA Systems

Author: Paulo Silva & Rui Dinis

Future broadband wireless communication systems are expected to be able to offer new and powerful services enabling fast transmission rates of several tens of Mbit/s. This is an ambitious challenge especially for mobile communication systems since these systems should be able to cope with severely time dispersive channels, associated to the signal multipath propagation. Moreover, these systems should have high spectral and power efficiencies, as well as high capacity and flexibility. Spread spectrum techniques, particularly coded division multiple access (CDMA) techniques allow high capacity and flexibility, continuous transmission requiring low-peak power requirements for the amplifiers, as well as some robustness against fading and time-dispersion effects associated with the multipath propagation. When employed in prefix assisted (PA) block transmission schemes combined with frequency-domain receiver implementations they become especially interesting for broadband wireless systems.

In Frequency-Domain Multiuser Detection for CDMA Systems the use of PA block transmission is considered in the context of both DS (Direct Sequence) and MC (Multicarrier) CDMA schemes. The main goal is the study of frequency-domain multiuser detection techniques with iterative signal detection/decoding techniques, also in combination with estimation and cancelation of nonlinear distortion effects. The receiver structures are suitable to scenarios with high interference levels and strongly time-dispersive channels.



River Publishers Series in Communications and Networking

ISBN: 9788792329707
Available From: February 2012
Price: € 90.00 $ 130.00

KEYWORDS:
Frequency-Domain Multiuser Detection for CDMA Systems

www.riverpublishers.com
marketing@riverpublishers.com