

Performance of VSAT MC-CDMA System Using LDPC and Turbo Codes over Multipath Channel

Authors : Hassan El Ghazi, Mohammed El Jourmi, Tayeb Sadiki, Esmail Ahouzi

Abstract : The purpose of this paper is to model and analyze a geostationary satellite communication system based on VSAT network and Multicarrier CDMA system scheme which presents a combination of multicarrier modulation scheme and CDMA concepts. In this study the channel coding strategies (Turbo codes and LDPC codes) are adopted to achieve good performance due to iterative decoding. The envisaged system is examined for a transmission over Multipath channel with use of Ku band in the uplink case. The simulation results are obtained for each different case. The performance of the system is given in terms of Bit Error Rate (BER) and energy per bit to noise power spectral density ratio (Eb/N0). The performance results of designed system shown that the communication system coded with LDPC codes can achieve better error rate performance compared to VSAT MC-CDMA system coded with Turbo codes.

Keywords : satellite communication, VSAT Network, MC-CDMA, LDPC codes, turbo codes, uplink

Conference Title : ICCWNC 2015 : International Conference on Cognitive Wireless Networks and Communications

Conference Location : Paris, France

Conference Dates : January 23-24, 2015