Abstract

This paper aims at performance analysis of the system which uses space-time turbo codes combined with adaptive beamforming for multiple transmits and receives antennas based orthogonal frequency division multiplexing (OFDM) system. The performance of the proposed technique is tested for two adaptive beamforming algorithms LMS & LLMS. Simulation results
demonstrate that the proposed system not only has good ability of suppressing interference, but also significantly improves the bit-error rate (BER) performance of the system. Experimental results show that an adaptive beamforming gives the optimum performance on AWGN channels. This system will also be optimum on fading channels when combined with space–time turbo codes.

Reference

- C. V. Seshaiah, S. Nagarani “A Survey on Space-Time Turbo Codes” IJCSIS, Vol. 7 No. 3, March 2010, 171-177, ISSN 1947 5500
- S.W.Varade & K.D.Kulat “Performance Analysis of MVDR Beamformer for Smart Antenna Applications” International Conference on VLSI and Communication (ICVCom-09), Kerela April 16-18, 2009

**Index Terms**

Computer Science

Communications

**Key words**

LMS (least mean squares)  
LLMS (LMS-LMS)  
Space-time turbo code (STTC)  
Spatial diversity
Performance Analysis of MIMO-OFDM System using Space-time Turbo Codes and Adaptive Beamforming