

Evaluation of MIMO Symbol Detectors for 3GPP LTE Terminals

Abstract

This paper investigates various MIMO detection methods for 3GPP LTE open-loop downlink multi-antenna transmission. Targeting VLSI implementation, these detection methods are evaluated with respect to complexity and detection performance. A realistic 3GPP LTE simulation chain is developed for the evaluation. The result shows that with the aid of Hybrid Automatic Repeat reQuest (H-ARQ), a recently proposed reduced complexity close-ML detector called MFCSO achieves a good tradeoff between achievable throughput and complexity. An adaptive transmission and detection scheme is also proposed based on user scenarios.