

A New Linear Group-Wise SIC multiuser Detector

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Abstract

In this work, we introduce a new linear groupwise SIC multi-user detector that can converge to either the decorrelator or the least minimum mean-square error (LMMSE) detector. We study the convergence behavior of the proposed scheme and show that the latter is equivalent to the block Gauss- Seidel iterative method if the group-detection scheme used is the decorrelator detector. Moreover, we prove that the latter is convergent if the group-detection matrix is positive definite. Our simulation results are in excellent agreement with the proposed theory.