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Research Letters in Communications
Volume 2008 (2008), Article ID 323048, 4 pages
doi:10.1155/2008/323048

Research Letter

Multiuser Scheduling on the Downlink of an LTE Cellular System

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Received 14 April 2008; Accepted 27 May 2008

Academic Editor: Ibrahim Develi

Abstract

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Abstract

The challenge of scheduling user transmissions on the downlink of a long-term evolution (LTE) cellular communication system is addressed. In particular, a novel optimal multiuser scheduler is proposed. Numerical results show that the system performance improves with increasing correlation among OFDMA subcarriers. It is found that only a limited amount of feedback information is needed to achieve relatively good performance. A suboptimal reduced-complexity scheduler is also proposed and shown to provide good performance. The suboptimal scheme is especially attractive when the number of users is large, in which case the complexity of the optimal scheme is high.