研究简报

基站协作OFDMA系统中面向混合业务的资源分配

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Resource Allocation for Heterogeneous Services in OFDMA Systems with Base Station Cooperation

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摘要	参考文献	相关文章

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摘要 基站协作是多小区OFDMA系统中抑制共信道干扰、提高系统容量的有效手段。如何分配无线资源以实现资源与业务最佳匹配是基站协作OFDMA系统中的关键问题。现有的研究大多面向单一业务。该文研究了尽力而为(BE)与有速率约束(RC)两类典型业务共存情况下的子载波与功率分配问题，提出了一种两阶段的启发式算法。算法的第1阶段仅为RC用户分配资源，通过引入子载波价值矩阵，最小化满足RC用户速率约束所需的子载波数；第2阶段将剩余子载波分配给BE用户以最大化他们的和速率。仿真结果表明，所提算法在系统中断概率及BE用户和速率两项指标上均优于已有方法。

关键词：   OFDMA   基站协作   混合业务   资源分配

Abstract：   Base Station Cooperation (BSC) is considered as a promising way for Co-Channel Interference (CCI) mitigation and system capacity improvement in multicell OFDMA systems. How to allocate radio resource optimally to guarantee the quality of services is a key problem in OFDMA systems with BSC. Previous research mostly focuses on the case of homogenous service. This paper studies subcarrier and power allocation problem in such a system where users with Best Effort (BE) service and those with Rate-Constrained (RC) service coexist. A two-stage heuristic algorithm is proposed. In the first stage, the algorithm allocates resource to only RC users, trying to minimize the number of subcarriers needed to satisfy their rate requirements with the help of value matrix of subcarriers. In the second stage, the remaining subcarriers are assigned optimally to BE users to maximize their sum rate. Simulation results show that the proposed algorithm outperforms the counterparts in both system outage probability and BE users' sum rate.

Keywords：   OFDMA   Base Station Cooperation (BSC)   Heterogeneous services   Resource allocation

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