Abstract

In this paper, we survey the energy-efficient resource share problem in a single-cell OFDMA system to achieve the energy competence tradeoff among users. Our main objective of the proposed system is to increase the energy efficiency each and every individual user. The spectral-energy competence trade-off is of primary consequence to determine how much energy per bit is required in a wireless communication system to attain exact spectral effectiveness. To discover its solution, we first change it into two different single-objective optimization troubles using proposed approaches such as weighted-sum and the maximum-minimum approach. The single-objective optimization troubles are non-convex due to the combinatorial channel allotment variables. Consequently, for both problems, we first give an upper bound algorithm through soothing the combinatorial variables and then expand a proposed method of suboptimal heuristic algorithm. The sum-of-ratios optimization method and comprehensive fractional programming are utilized for the weighted sum problem and the maximum-minimum problem, respectively. The Mathematical results demonstrate that the both weighted-sum and the maximum-minimum approaches can effectively resolve the EE
maximization problem. Hence the proposed suboptimal heuristic algorithms can achieve a close performance to the matching upper bound algorithm. Simulation result shows that the impact of user’s excellence of service is small on the energy efficiency when a enormous spectral efficiency is required.

References


**Index Terms**

Computer Science  
Algorithms

**Keywords**

Sybil shield, Defense Mechanism, Social Networks, Sybil attack.