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A Novel HGBBDSA-CTI Approach for Subcarrier Allocation in Heterogeneous Network

Telecommunication Systems

February 2019, Volume 70, Issue 2, pp 245–262 | Cite as

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Article
First Online: 07 June 2018

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Abstract

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unacceptable limit or extremely high levels. These lead to severe system performance degradation in HetNets. This paper presents a novel HGBBDSA-CTI approach capable of strategically allocate the subcarriers and thereby improves the throughput as well as the outage. The enhanced system performance is able to mitigate CTI issues in HetNets. This paper also analyses the time complexity for the proposed HGBBDSA algorithm and also compares it with the Genetic Algorithm-based Dynamic Subcarrier Allocation (DSA), and Particle Swarm Optimization-based DSA as well. The key target of this study is to allocate the unoccupied subcarriers by sharing among the HeNodeBs. The reason is also to enhance the system performance such as throughput of HeNodeB, the average throughput of HeNodeB Users, and outage. The simulation results show that the proposed HGBBDSA-CTI approach enhances the average throughput (92.05 and 74.44%), throughput (30.50 and 74.34%), and the outage rate reduced to 52.9 and 50.76% compare with the existing approaches. The result also indicates that the proposed HGBBDSA approach has less time complexity than the existing approaches.

Keywords

OFDMA resource optimization Computational complexity Subcarrier allocation Co-tier interference Heterogeneous network

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Notes

Acknowledgements

A distinct acknowledgements to Ministry of Higher Education (MOHE), Malaysia for the sponsors. Authors thankfully acknowledge for the support of this work by the Research Management Centre, International Islamic University Malaysia under the Project SF16-003-0072 and Research Management and Innovation Centre, Universiti Malaysia Sarawak under the Grant F02/DPD/1639/2018.

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