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Resource allocation based on capacity optimization for device-to-device communication.

(Chinese. English summary) [Zbl 1389.94009](#)

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Summary: To reduce the base station load, spectrum utilization in cellular network is increased by reusing the spectrum that has been used. At the same time, the users that use same spectrum are clustered via using the fuzzy c -means (FCM) algorithm to reduce interference among device-to-device (D2D) users who use the same frequency. Resource allocation is realized by using greedy algorithm to reduce interference between D2D users and cellular users. The simulation result shows that, compared with random clustering and random resource allocation, resource allocation scheme based on the FCM algorithm and greedy algorithm can improve system capacity more effectively.

MSC:

[94A05](#) Communication theory

[91B32](#) Resource and cost allocation (including fair division, apportionment, etc.)

Keywords:

device-to-device communication; resource allocation; fuzzy c -means algorithm; greedy algorithm

Full Text: [DOI](#)