

An Efficient Resource Allocation Algorithm for D2D Communications Based on NOMA

This paper proposes a joint sub-channel and power allocation algorithm for D2D communication based on NOMA to maximize the uplink energy efficiency and throughput of the mobile communication system. The performance of the future mobile communication system could greatly improve as a result of Device-to-Device (D2D) communication and Non-Orthogonal Multiple Access (NOMA). Reduction of the interference between the D2D users and cellular users is crucial in improving the overall throughput and efficiency of the D2D communication based on NOMA. The algorithm uses the Kuhn-Munkres (KM) technique to allocate a channel for each D2D group and formulates an optimal power allocation problem using Karush-Kuhn-Tucker (KKT) conditions. Simulations indicate that the proposed algorithm outperforms the current state-of-the-art algorithms in regards to energy efficiency and throughput under different network conditions.

Domain: MATLAB - Communication - Device-To-Device Communication

Technology: MATLAB