



Energy Efficiency in 5G Massive MIMO for Mobile Wireless Network

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Abstract— Due to the evaluation of mobile devices and applications in the current decade, a new direction for wireless networks has emerged. The general consensus about the future 5G network is that the following should be taken into account; the purpose of thousand-fold system capacity, hundredfold energy efficiency, lower latency, and smooth connectivity. The massive multiple-input multiple-output (MIMO). This article focuses in simulating an area covered by random deployment of small cells to serve hundreds of users in the simulation area. The results show that the (Energy efficiency) the energy efficiency maximizing operation point might be very spectrally inefficient, and the efficient energy can be greatly improved by increasing the base station density, meaning that small cells are a promising solution for maximal energy efficiency.

trend for the enhancement of the network capacity and for safe energy consumption in the next generation wireless systems. A heterogeneous network or HetNet refers to a wireless network which consists of nodes with different coverage sizes and transmission powers. The high power nodes (HPNs) with large coverage sizes are deployed in a planned manner for the coverage of urban and semi-urban areas.[4][5] The low power nodes (LPNs) with small coverage sizes are used for the extension of the coverage area and throughput of the HPNs. Furthermore, infrastructures with a high level of LPN deployment can also significantly improve the energy efficiency of the system compared to those with one or fewer HPNs due to the higher

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