
Power consumption of 5g base stations

Can 3GPP reduce base station energy consumption in 5G NR BS?

Aiming at minimizing the base station (BS) energy consumption under low and medium load scenarios, the 3GPP recently completed a Release 18 study on energy saving techniques for 5G NR BSs . A broad range of techniques was evaluated in terms of the obtained network energy saving (NES) gain and their impact to the user-perceived throughput (UPT).

Should power consumption models be used in 5G networks?

This restricts the potential use of the power models, as their validity and accuracy remain unclear. Future work includes the further development of the power consumption models to form a unified evaluation framework that enables the quantification and optimization of energy consumption and energy efficiency of 5G networks.

How does mobile data traffic affect the energy consumption of 5G base stations?

The explosive growth of mobile data traffic has resulted in a significant increase in the energy consumption of 5G base stations (BSs).

What is 5G base station?

1. Introduction 5G base station (BS), as an important electrical load, has been growing rapidly in the number and density to cope with the exponential growth of mobile data traffic . It is predicted that by 2025, there will be about 13.1 million BSs in the world, and the BS energy consumption will reach 200 billion kWh .

At present, 5G mobile traffic base stations in energy consumption accounted for 60% ~ 80%, compared with 4G energy consumption increased three times. In the future, high ...

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This paper conducts a literature survey of relevant power consumption models for 5G cellular network base stations and provides a comparison of the models. It highlights ...

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An energy consumption optimization strategy of 5G base stations (BSs) considering variable threshold sleep mechanism (ECOS-BS) is proposed, which includes the initial ...

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Change Log This document contains Version 1.0 of the ITU-T Technical Report on "Smart Energy Saving of 5G Base Station: Based on AI and other emerging technologies to ...

Mathematical optimization of energy consumption requires a model of the problem at hand. In this thesis linear regression is compared with the gradient boosted trees method and a neural ...

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