

Does Mappo reduce power consumption in 5G ultra-dense networks?

In this paper, we thoroughly study the base station control problem in 5G ultra-dense networks and propose an innovative MAPPO algorithm. The algorithm significantly reduces the overall power consumption of the system by optimizing inter-base station collaboration and interference management while guaranteeing user QoS.

What are base station sleep strategies in 5G UDN?

In 5G UDN environments, the use of base station sleep techniques is one of the most widely used methods to reduce power consumption. In this paper, two types of base station sleep strategies are distinguished: threshold-based base station sleep strategies and adaptive base station sleep strategies. 2.1. Threshold-based base station sleep strategy

What are the standardized energy-saving metrics for a base station?

(1) Energy-saving reward: after choosing a shallower sleep strategy for a base station, the system may save more energy if a deeper sleep mode can be chosen, and in this paper, the standardized energy-saving metrics are defined as  $R_i = E_{SM=0} - E_{SM=i}$ ,  $E_{SM=0} - E_{SM=1}$ ,  $E_{SM=1} - E_{SM=2}$ ,  $E_{SM=2} - E_{SM=3}$

Why do base stations waste so much energy?

When there is little or no communication activity, base stations typically consume more than 80% of their peak power consumption, leading to significant energy waste. This energy waste not only increases operational costs, but also burdens the environment, which is contrary to global sustainability goals.

Can a base station sleep strategy reduce energy consumption in UDN systems?

The goal of this paper is to find a base station sleep strategy in UDN systems that reduces the total system energy consumption while being able to guarantee QoS.

What is threshold-based base station sleep strategy?

Threshold-based base station sleep strategy is a common base station management method in wireless communication networks, which adjusts the operating state of the base station to save energy and improve resource utilization by dynamically setting appropriate thresholds.

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# 5g base station power optimization strategy

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Mar 17, 2022&ensp;&#0183;&ensp;Abstract: The high-energy consumption and high construction density of 5G base stations have greatly increased the demand for backup energy storage batteries. To maximize ...

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