



SolarTech Power Solutions

Integrated 5G base station sleep mode



Overview

What is a cooperative sleep and energy-sharing strategy for 5G BSMG systems?

This paper proposes a cooperative sleep and energy-sharing strategy for heterogeneous 5G base station microgrid (BSMG) systems, utilizing deep learning and an improved multi-objective evolutionary algorithm based on decomposition (MOEA/D). We present a reference scenario for a 5G BSMG system comprising a central and sub-base station microgrid.

Can hysteretic base station sleeping control save energy in 5G cellular network?

Hysteretic base station sleeping control for energy saving in 5G cellular network. In Proceedings of IEEE 85th vehicular technology conference (VTC spring) (pp. 1-5). Zhang, H., Guo, H., & Xie, W. (2021). Research on performance of power saving technology for 5G base station.

How does sleep mode affect 5G BS?

As the maximum sleeps in sleep mode 1 increases average power consumption $\backslash ((P_{\text{cons}}) \backslash)$ and power saving factor (PS) of 5G BS initially decreases then it becomes increases.

What is a minimal 5G BS energy consumption optimization model?

Therefore, the problem can be formulated as a minimal 5G BS energy consumption optimization model, i.e., the energy consumption reduced by reasonably switching off the idle or lightly loaded BSs and reasonably associate UEs with BSs (i.e., the BS switching state and BS-UE association state scheme).

Can base stations save energy in 5G cellular networks?

Base stations (BSs) sleeping strategy has been widely analyzed nowadays to save energy in 5G cellular networks. 5G cellular networks are meant to deliver

a higher data speed rate, ultra-low latency, more reliability, massive network capacity, more availability, and a more uniform user experience.

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 .

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