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A base station solar hybrid energy 5g





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.

How can a 5G network reduce the environmental burden?

The integration of sustainable renewable energy sources, such as solar and wind power, can significantly reduce the electricity costs and carbon emissions associated with base stations in 5G networks. However, it is difficult for traditional power grids to fully accommodate green energy, thus exacerbating the environmental burden [7, 8, 9].

What is a 5G BSMG system?

We present a reference scenario for a 5G BSMG system comprising a central and sub-base station microgrid. A prediction model was developed, integrating a convolutional neural network with a dual attention mechanism and bidirectional long short-term memory to determine the operational status of BSMGs.

What is a heterogeneous 5G BSMG system?

Heterogeneous 5G BSMG system model employed in the present study. A CBSMG and an SBSMG are primarily distinguished by their service capabilities; a CBSMG offers low-rate services and capacity, whereas an SBSMG is deployed in high-traffic areas within the coverage area of a CBSMG to enhance network capacity and deliver high-rate services.



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