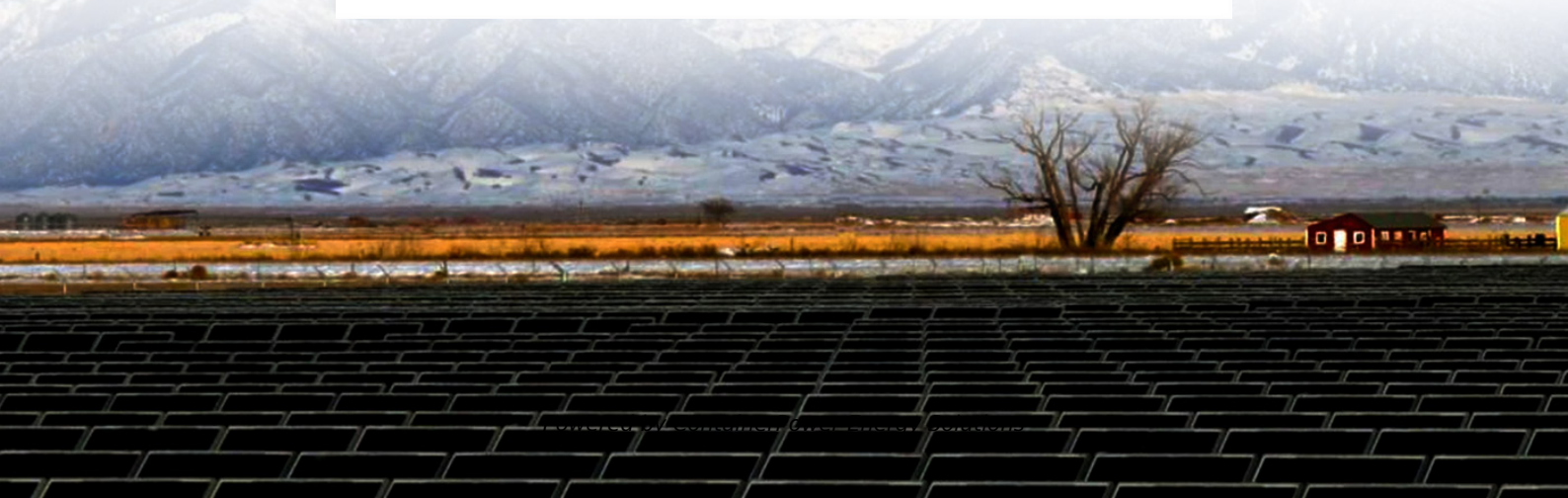
ContainerPower Energy Solutions

Setting distance of communication base station energy storage system



Overview

What is a distributed collaborative optimization approach for 5G base stations?

In this paper, a distributed collaborative optimization approach is proposed for power distribution and communication networks with 5G base stations. Firstly, the model of 5G base stations considering communication load demand migration and energy storage dynamic backup is established.

What is a 5G base station?

At the same time, a large number of 5G base stations (BSs) are connected to distribution networks , which usually involve high power consumption and are equipped with backup energy storage , , giving it significant demand response potential.

What is a collaborative optimal operation model of 5G base stations?

Afterward, a collaborative optimal operation model of power distribution and communication networks is designed to fully explore the operation flexibility of 5G base stations, and then an improved distributed algorithm based on the ADMM is developed to achieve the collaborative optimization equilibrium.

What are the parameters of BS Energy Storage?

The channel bandwidth B allocated by the user is 1 MHz, the upper limit of the BS's traffic processing capacity L max is 10 4 Mbps, and the traffic demand L j of a single user is 100 Mbps. The detailed parameters of the BS energy storage are shown in Table 1. ω is taken as small as 0.14 Yuan/kWh to encourage energy storage participation.

Can a 5G base station enter a hibernation state?

If the communication load can only connect to one 5G BS, the base station cannot enter a hibernation state by load migration. In addition, the capacity of 5G BS to carry the communication load has an upper limit, dependent on the

transmission traffic constraints and transmission power constraints, as shown in Equations (10), (11).

How to set the backup time of BS Energy Storage?

The backup time of the BS energy storage should be set according to the power supply reliability of the distribution network where BS is connected. For example, in areas with high power supply reliability, the backup time of energy storage can be reduced. Fig. 3. Schematic diagram of energy storage capacity division of BS.

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