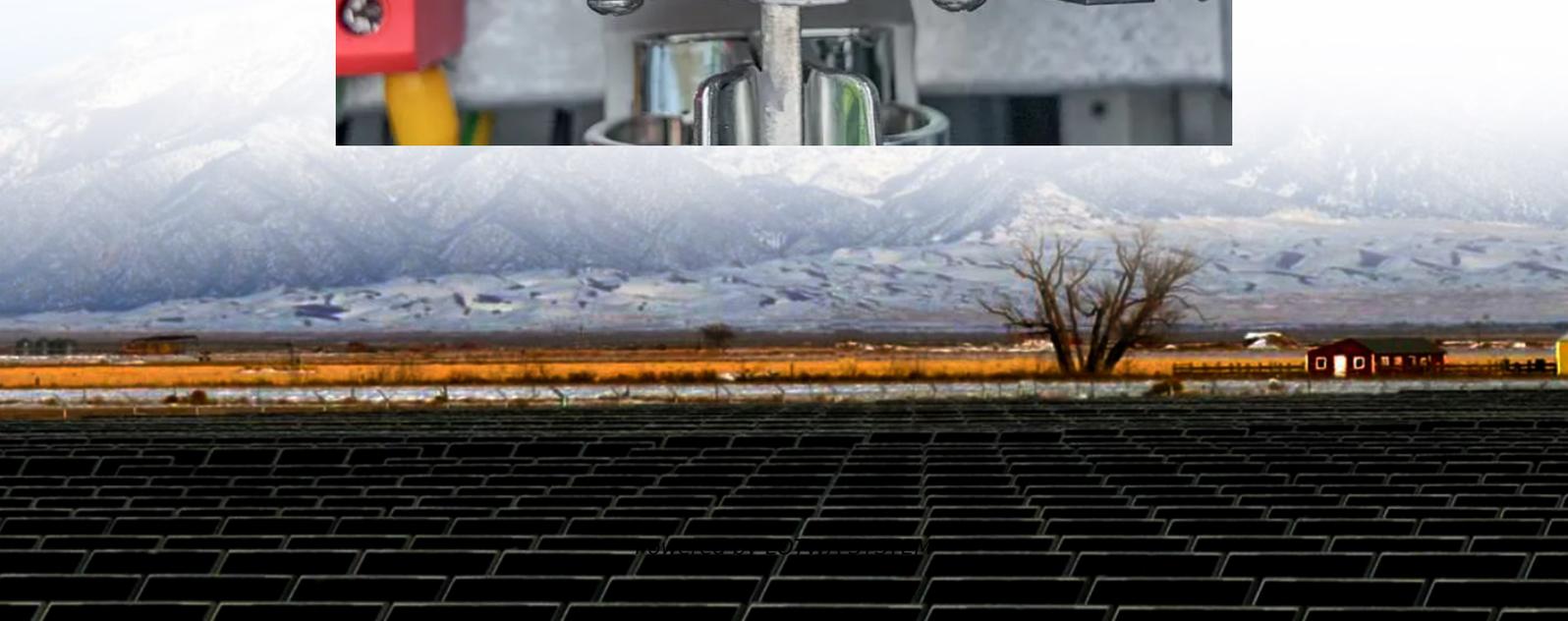


# On-site management of uninterrupted power supply in base station room





## Overview

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How to reduce power-intensive base stations?

To address the issue of power-intensive base stations, proposed a combined approach involving base station sleep and spectrum allocation. This approach aims to discover the most efficient operating state and spectrum allocation for SBS to minimize power consumption and network disturbance.

Are base station sleep and power allocation related?

Each SBS  $n$  is considered an agent, and each agent can make decisions based on the surrounding environment to get the reward value for the next round of exploration. In this paper, the base station sleep and power allocation are two closely related mechanisms that jointly optimize the resource management of SBSs through DQN.

How does the number of base stations affect network performance?

Comparative analysis of performance with respect to the number of base stations. With an increase in the number of SBSs, both the network coverage and spectrum reuse ratio also increases. From Fig. 5 (d), it is evident that as the quantity of SBSs increases, so does the quantity of active SBSs.

Does base station sleep affect grade of service index?

To incorporate practical factors in base station sleep, studied the system energy consumption and grade of service under three base station sleep schemes and proposed an analytical method with high robustness, scalability, and computational efficiency to evaluate the grade of service index.



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