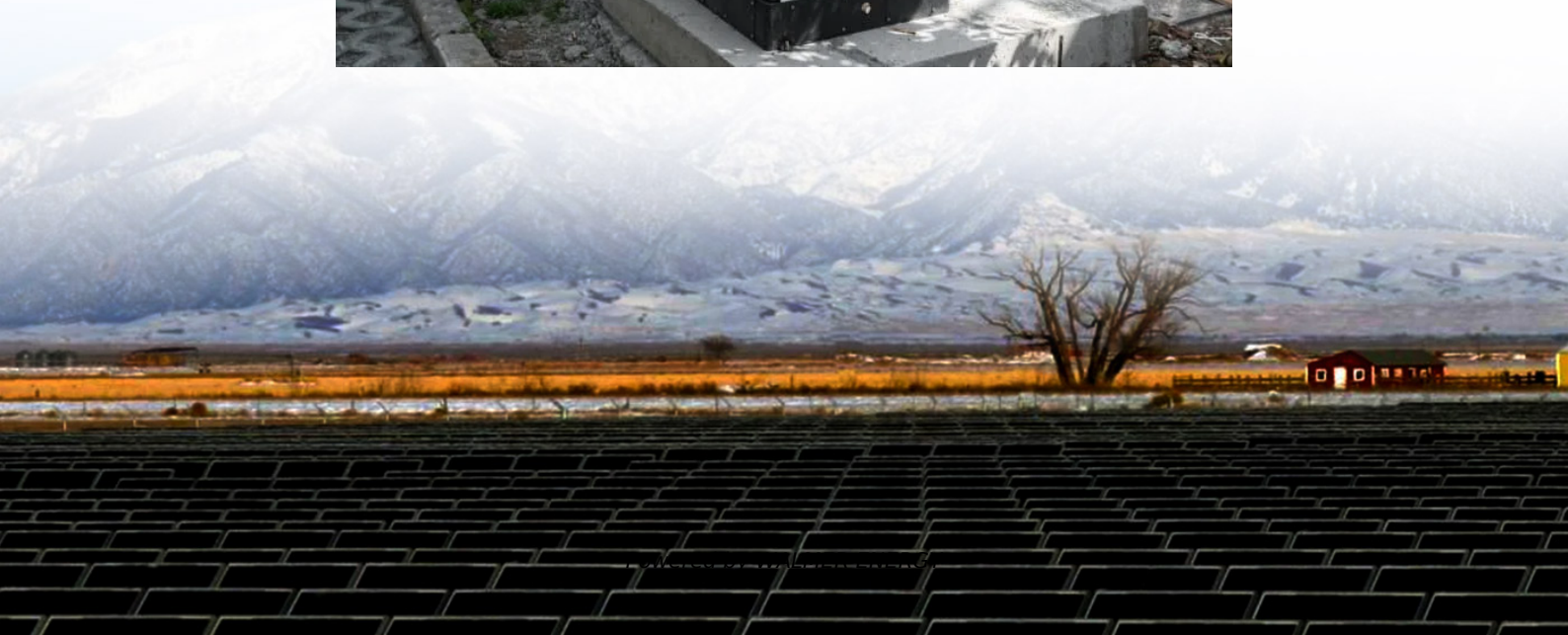


# **Base station intelligent power controller**





## 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.

What is a multi-agent reinforcement learning based power control strategy?

This paper proposed a multi-agent reinforcement learning based power control strategy for base stations in UDN. The method initially modeled system energy consumption with EE and SE as optimization objectives. It was then divided into two sub-problems based on these objectives, optimized simultaneously using two DQNs.

How does distributed execution affect base station control?

In the distributed execution phase, each actor network makes decisions independently based only on its own network and observations, and although each actor executes independently, the whole system is able to obtain a better base station control strategy because their strategies are based on the results of global optimization. Fig. 2.

What is base station dormancy?

In response to the problem of high network energy consumption caused by the dense deployment of SBS, the base station dormancy technique is seen as an effective solution, as it does not require changes to the current network architecture and is relatively simple to implement. This technique was first proposed in the IEEE 802.11b protocol .



## Base station intelligent power controller

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Base station power control strategy in ultra-dense networks ...

Aug 1, 2025 · In response to these challenges, base station sleep technology is increasingly seen as a promising solution [3]. Nonetheless, several current base station sleep algorithms depend ...

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Intelligent Dynamic Power Control with Cell Range ...

Apr 29, 2024 · In 5G heterogeneous networks (HetNets), small-cell base stations (SBSs) are deployed in the coverage of macro base stations (MBSs) to improve the system performance. ...

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5G Micro Base Station Intelligent Power System

Sep 26, 2024 · Reliable, High-efficiency and Intellit. SYP48-3000 is an intelligent power module supply specially designed for 4G and 5G micro base stations. Its small size, light weight, high ...

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Energy-saving control strategy for ultra-dense network base stations

Aug 1, 2025 · A base station control algorithm based on Multi-Agent Proximity Policy Optimization (MAPPO) is designed. In the constructed 5G UDN model, each base station is considered as ...

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Sep 18, 2025 · The detection module monitors various signals in the circuit in real time and transmits these signals to the control module via the communication module. The control ...

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Application of smart power usage on the ...

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Telecom Base Station Intelligent Grid-PV Hybrid Power ...

Stable and reliable: the power module adopts isolated circuit design scheme; Intelligent collaboration: support turnkey monitoring of PV modules, rectifier modules and DCDC ...

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KingSi's intelligent all-digital innovation solution will greatly enhance the intelligence of base station power distribution management. Level, promote the rapid laying of 5G base stations ...

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