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Requirements for the deployment of energy management systems in base station rooms

Overview

What are the standardized energy-saving metrics for a base station?

(1) Energy-saving reward: after choosing a shallower sleep strategy for a base station, the system may save more energy if a deeper sleep mode can be chosen, and in this paper, the standardized energy-saving metrics are defined as (18) R i e = E S M = 0 E S M = i E S M = 0 E S M = 3.

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.

Does a macro base station need a hibernation scheme?

In addition to EE, considering that the macro base station will have additional energy consumption used for user connectivity, the hibernation scheme presented by Yang et al. aims to decrease the energy consumption of the cellular network by utilizing the support of SBS.

Does a base station sleep strategy affect EE?

This is because this paper proposes a base station sleep strategy that directly impacts EE and enhances the ratio of the overall system transmission rate to power consumption. In the final EE results are better than the other two methods.

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