



FTMRS SOLAR

# Integrated signal base station energy method





## Overview

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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)  $R_{i,e} = E_{S,M=0} - E_{S,M=i} = E_{S,M=0} - E_{S,M=3}$ .

Can a base station sleep strategy reduce energy consumption in UDN systems?

The goal of this paper is to find a base station sleep strategy in UDN systems that reduces the total system energy consumption while being able to guarantee QoS.

What is threshold-based base station sleep strategy?

Threshold-based base station sleep strategy is a common base station management method in wireless communication networks, which adjusts the operating state of the base station to save energy and improve resource utilization by dynamically setting appropriate thresholds.

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.



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Integrated Sensing and Communication enabled Sensing ...

Oct 13, 2023 · This paper studies the sensing base station (SBS) that has great potential to improve the safety of vehicles and pedestrians on roads. It can detect the targets on the road ...

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Energy-Efficient Interference Cancellation for

Feb 18, 2025 · Integrated sensing and communication (ISAC) systems leverage coordinated multi-point (CoMP) base stations (BSs) to deliver high-accuracy sensing and robust ...

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Integrated Sensing and Communication Enabled Sensing

Jan 10, 2023 · Abstract This paper studies the sensing base station (SBS) that has great potential to improve the safety of vehicles and pedestrians on roads. SBS can detect the targets on the ...

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arXiv:2204.12264v1 [cs ] 26 Apr 2022

Jan 23, 2023 · This paper investigates an ISAC downlink system, where a base station (BS) simultaneously performs multiuser communication and radar target sensing by sending well ...

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Energy efficiency maximization for active RIS-aided ...

Apr 24, 2024 · Abstract This paper investigates energy-efficient communication within an integrated sensing and communication system. The system employs a dual-function radar ...

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Symbol-Level Integrated Sensing and Communication Enabled Multiple Base

Aug 22, 2023 · With the support of integrated sensing and communication (ISAC) technology, mobile communication system will integrate the function of wireless sensing, thereby ...

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Integrated control strategy for 5G base station frequency ...

Aug 1, 2024 · This paper proposes a double-layer clustering method for 5G base stations and an integrated centralized-decentralized control strategy for their participation in frequency ...

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Base Station Energy Saving based on Imitation Learning in ...

Sep 1, 2024 · In this paper, our goal is to minimize the total power consumption of the base station by dynamically controlling the switching status of the base station. This article first ...

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Energy-Efficient Hybrid Beamforming for Integrated ...

Jun 21, 2024 · Abstract--This paper conceives a hybrid beamforming (HBF) design that maximizes the energy efficiency (EE) of an integrated sensing and communication (ISAC) ...

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

Aug 1, 2025 · The authors in the paper [23] investigated that under the constraints of mobile network operators' user QoS demands and base station power budgets, an energy-efficient ...

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