5G base station power outage loss calculation

In this paper, we closely examine the power outage events and the backup battery activities from a 1.5-year dataset of a branch of a major cellular service provider in China, including 4,206 base stations and more than ...

Our approach features an innovative AI-based cell outage detection strategy, named Impv-XGBoost, which excels in high-shadowing conditions and with sparse training data, outperforming traditional methods.

Smart Energy Saving of 5G Base Station: Based on AI and other emerging technologies to forecast and optimize the management of 5G wireless network energy consumption

We demonstrate that this model achieves good estimation performance, and it is able to capture the benefits of energy saving when dealing with the complexity of multi-carrier base stations architectures.

In this work, from another side of battery deployment, we tackle the problem by providing the most cost-efficient allocation of backup power. Specifically, we explore possible opportunities for cost saving ...

Path Loss Calculation: Methods for assessing channel status and determining radio link reception. Base Station Coverage: Techniques for determining the radius and coverage area of a 5G base station. ...

These insights helped pioneer the calculation of the end-to-end power requirements of different 5G network architectures, forming a solid foundation for their sustainable implementation. ...

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Aiming at minimizing the base station (BS) energy consumption under low and medium load scenarios, the 3GPP recently completed a Release 18 study on energy savi

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Compared with the fixed backup time, the base station energy storage model proposed in this article not only improves the utilization rate of base station energy storage, but also reduces the ...

In this paper, we closely examine the base station features and backup battery features from a 1.5-year dataset of a major cellular service provider, including 4,206 base stations distributed across 8,400 square kilometers ...

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