

Energy management construction cost of earthquake communication base station

Can a logistic method be used to predict a base station failure?

One of the primary tasks for effective disaster relief after a catastrophic earthquake is robust communication. In this paper, we propose a simple logistic method based on two-parameter sets of geology and building structure for the failure prediction of the base stations in post-earthquake.

Do communication base stations perform post-earthquake functionality using Bayesian network?

A method to evaluate the post-earthquake functionality of communication base stations using Bayesian network is developed. The dependence between the equipment and its hosting building structure, and the impact of power outages are considered. The method is validated using seismic damage data from the Ludian Earthquake.

How to assess damage to mobile communication facilities during large earthquakes?

Ke et al. proposed a method for assessing damage to mobile communication facilities during large earthquakes. The study analyzed the impact of power outages and evaluated the damage caused by ground motion to base stations using fragility curves .

Do earthquakes affect communication base stations?

Analyzing and summarizing these observed seismic damages can enhance our understanding of the impairment of communication base stations during earthquakes, providing valuable information for establishing a Bayesian network model for functionality loss.

What is an indoor base station?

An indoor base station comprises a communication room accommodating various communication equipment and a communication tower responsible for transmitting and receiving information. The communication room is equipped with wireless communication devices, transmission equipment, power supply equipment, air conditioning, and cable routing racks.

What are the prediction results from post-earthquake base station data?

Using the post-earthquake base station data in Sichuan,China,the prediction results are 96.7% and 90%for the two-parameter sets and all parameter sets,respectively,and 93.3% for the neural network method sets.

The article discusses the costs associated with building and maintaining a communication base station, categorizing them into initial setup costs ...

Nov 15, 2024 · The potential benefits of 5G networks, such as faster data speeds and improved user experiences, come with a critical ...

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Mar 31, 2024 · On the basis of ensuring smooth user communication and normal operation of base stations, it realizes orderly regulation of energy storage for large-scale base stations, ...

The article discusses the costs associated with building and maintaining a communication base station, categorizing them into initial setup costs such as site acquisition, design and ...

Jul 1, 2022 · This study aims to understand the carbon emissions of 5G network by using LCA method to divide the boundary of a single 5G base station and discusses the carbon emission ...

Aug 1, 2023 · An energy consumption optimization strategy of 5G base stations (BSs) considering variable threshold sleep mechanism (ECOS-BS) is proposed, which includes the initial ...

Jun 2, 2023 · Abstract One of the primary tasks for effective disaster relief after a catastrophic earthquake is robust communication. In this paper, we propose a simple logistic method based ...

Jan 11, 2021 · In the cost-effectiveness analysis, the converter transformers of a typical substation were taken as examples to calculate the expected cost in a single earthquake event and the ...

Oct 24, 2025 · In order to solve the poor heat dissipation in the outdoor mobile communication base station, especially in summer, high temperature alarm phenomenon occurs frequently, ...

Jun 2, 2023 · In this paper, we propose a simple logistic method based on two-parameter sets of geology and building structure for the failure prediction of the base stations in post-earthquake.

The \$23 Billion Question: Can We Power Connectivity Without Burning the Planet? As global mobile data traffic approaches 1,000 exabytes monthly, communication base station energy ...

Aug 23, 2019 · With the advent of the 5G era, mobile users have higher requirements for network performance, and the expansion of network coverage has become an inevitable trend. ...

Feb 24, 2023 · With the rapid development of mobile communication, the major operators speed up the pace of network construction, the number of base stations increases significantly, the ...

Sep 1, 2024 · In this paper, a distributed collaborative optimization approach is proposed for power distribution and communication networks with 5G base stations. Firstly, the model of 5G ...

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