SolarHome Energy

Earthquake Communication Green Base Station

Overview

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 factors affect a post-earthquake communication base station?

While ignoring that the damage of the post-earthquake communication base station is also related to many factors such as the geographical location of the base station, the distance from the earthquake source, the geography and geology between the earthquake source and the communication base station.

How do earthquakes affect communication?

Earthquake disasters can cause collapse of houses, damage to communication base stations towers and transmission lines, resulting in the disruption of

communication services over a large area.

How many base stations were damaged in a quake?

According to post-earthquake statistics, a total of 14,896 base stations were damaged in the 2008 Wenchuan earthquake, 724 base stations were interrupted in the 2013 Lushan earthquake, 234 base stations were out of service in the 2017 Jiuzhaigou earthquake, and 385 base stations were interrupted in the 2019 Changning earthquake .

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Field Test of "Green Base Station" Designed for ...

the Great East Japan earthquake, NTT DOCOMO announced its intention to create a "Green base in May of 2011 - an environmentally friendly telephone base station designed to ...

Aerial Base Stations for Enabling Cellular Communications during

During disasters such as hurricanes, earthquakes, tornadoes, storms, tsunamis and man-made disasters, the need for communication becomes more imperative for the

Seismic fragility analysis of critical facilities in communication base

The seismic fragility curves described in Fig. 16 will be used to calculate the seismic fragility and post-earthquake functional failure probability of the communication base station ...

Taiwan earthquake knocks nearly 200 base stations offline

The magnitude 7.2 quake saw communications infrastructure across the region disrupted,

primarily due to power lines to base stations being damaged or severed. All three of ...

Seismic fragility analysis of critical facilities in communication ...

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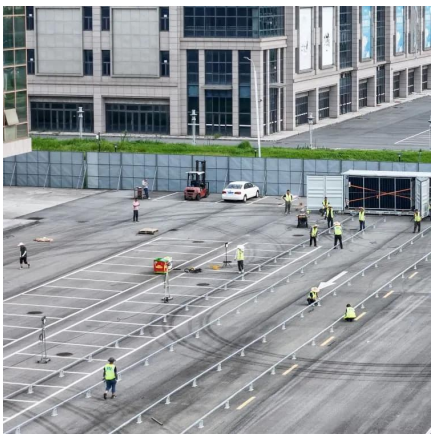
Reliability prediction and evaluation of communication base stations ...

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 ...



Real-time Seismogram Displays

Real-time Seismogram Displays These seismogram displays depict ground motion recorded by seismograph stations in real-time, updated every few minutes. Each plot represents 24 hours ...

Breaking Down Base Stations - A Guide to Cellular Sites

Every day, billions of people use their phones and devices to connect to each other around the globe. This is made possible by cellular ...

Solutions for Sustainable and Resilient Communication ...

I Introduction Major natural disasters and public safety incidents significantly disrupt communication network infrastructure. In the aftermath of major disasters, such as ...

SafetyLit: Reliability prediction and evaluation of communication base

SafetyLit is produced by the SafetyLit Foundation in cooperation with San Diego State University and the World Health Organization.

Reliability prediction and evaluation of communication base ...

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Seismic fragility analysis of critical facilities in communication base

The Yushu earthquake also severely damaged the communication system in the disaster area, and many base stations were rendered completely inoperable and unable to be ...

Ship-based mobile stations debut in quake-affected Noto

As communication failures continue in areas affected by the Noto Peninsula Earthquake, NTT Docomo and KDDI have begun operating an off ...

Communication Base Station Seismic Rating , HuiJue Group E-Site

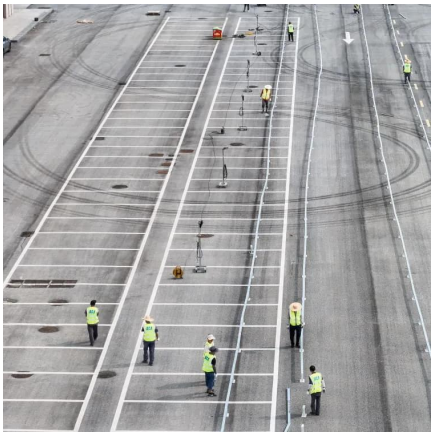
When a 7.8-magnitude earthquake struck Türkiye in February 2023, communication base stations with subpar seismic ratings collapsed within minutes, delaying rescue operations.

[An Independent UAV-Based Mobile Base Station]

In disaster scenarios, e.g., earthquakes, tsunamis, and wildfires, communication infrastructure often becomes severely damaged. To rapidly ...

Damage assessment of mobile communication facilities subjected ...

ABSTRACT Communication systems play a critical role in emergency response during disasters. In this study, we proposed a methodology for assessing damage to mobile ...



Post-earthquake functional state assessment of communication base

?? Post-earthquake functional state assessment of communication base station using Bayesian network ?????????????????????? ????

Detecting the Unseen: Understanding the Mechanisms and ...

For example, during the Wenchuan MS8.0 earthquake in 2008, communication base stations affected by the earthquake were located throughout the >=VI intensity zone, and 29,064 base ...

[Location correction technique based on mobile ...]

Article history: Received 7 June 2017 Accepted 31 January 2018 Available online 13 February 2018 Keywords: Earthquake emergency Location-based service Mobile communication base ...

Damage assessment of mobile communication facilities subjected ...

In this study, we proposed a methodology for assessing damage to mobile communication facilities subjected to major earthquakes, with consideration of both ground ...

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Location correction technique based on mobile communication ...

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