

European Solar Energy Storage

Jamaica smart grid topology



Jamaica smart grid topology



Estimation of smart grid topology using SCADA measurements

This paper shows that the power grid topology can be approximately estimated simply by observing multiple power injection measurement data and exhibits almost similar patterns and characteristics to the original topology. Power grid topology is essential for various aspects of smart grid monitoring and operations. Recent studies show that by using the grid topology, an ...

Power grid surveillance: Topology change detection system using ...

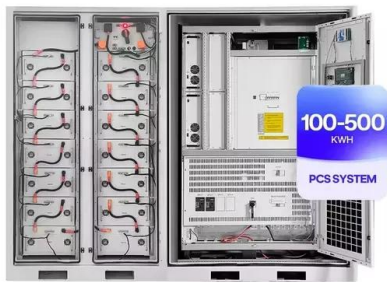
This paper proposes an efficient channel impulse response (CIR)-based technique to detect topology changes in the power grid. The features of the proposed approach include the following aspects: (i) it is a software-only solution, not requiring any intervention on the current smart grid architecture; (ii) topology changes can be detected via a simple distributed ...



Smart-Grid Topology Identification Using Sparse Recovery

This paper develops an efficient solution for power network topology identification and monitoring activities in SG by exploiting the concentration of nonzero elements in the corresponding sparse vectors around the main

diagonal in the nodal admittance or structure matrix of the PN. Smart grid (SG) technology reshapes the traditional power grid into a ...



Govt looking at smart grid technology

Smart grids are electrical networks that can intelligently integrate the behaviour and actions of all users connected to it, in order to efficiently deliver a sustainable, cost ...



Online learning for robust voltage control under uncertain grid topology

Please cite our papers as follows, or use the BibTeX entries below. C. Yeh, J. Yu, Y. Shi, and A. Wierman, "Robust online voltage control with an unknown grid topology," in Proceedings of the Thirteenth ACM International Conference on Future Energy Systems (e-Energy '22), Association for Computing Machinery, Jun. 2022, pp. 240-250, ISBN: 9781450393973.

Online Topology Identification for Smart Distribution Grids ...

Request PDF , Online Topology Identification for Smart Distribution Grids Based on LightGBM and Deep Neural Networks , ?????????????????????????????????????



Unbalanced multi-phase distribution grid topology estimation and ...

For distribution grid topology identification, many methods have been proposed in recent years. For example, in [], the correct topology is searched from a set of possible radial networks. Given the line parameters, Cavraro et al. [] and Sharon et al. [] propose maximum-likelihood methods to select the operational distribution grid topology. Bolognani et al. [], Peppanen et al. [], and Liao ...

On Topology Attack of a Smart Grid: Undetectable Attacks and

Covert data attacks on the network topology of a smart grid is considered. In a so-called man-in-the-middle attack, an adversary alters data from certain meters and network switches to mislead the control center with an incorrect network topology while avoiding detections by the control center. A necessary and sufficient condition for the



Jamaica reaches 75% smart meter coverage



Jamaica Public Service Company has reported that 520,000 smart meters were installed at the end of January, corresponding to about 75% of the customer base. The rollout, launched in 2015, has seen a J\$14 billion ...

JPS aims at better customer delivery, smart grids

JPS, Gantois said, has been at the forefront of Jamaica's fuel diversification strategy with its renewable facilities, the introduction of LNG, and facilitating the addition of renewables to the grid by independent power ...

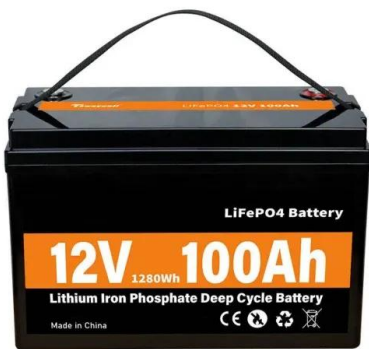


Generating Scale-Free Topology for Wireless Neighborhood

Neighbourhood Area Networks (NANs) are critical infrastructure in smart grid to support communications. With the development of wireless communication technologies, there is a great potential for

An XGBoost-Based Vulnerability Analysis of Smart Grid Cascading

As an example, a cascading failure simulation model based on DC power flow is used to simulate the smart grid behaviors under topology attacks and create the dataset for the XGB classifier [10].



On Topology Attack of a Smart Grid: Undetectable Attacks ...

On Topology Attack of a Smart Grid:
Undetectable Attacks and Countermeasures
Jinsub Kim and Lang Tong, Fellow, IEEE
Abstract--Covert data attacks on the network topology of a smart grid is considered. In a so-called man-in-the-middle attack, an adversary alters data from certain meters and network switches to mislead the control center with

(PDF) Information Technology, Artificial Intelligence and Machine

Information Technology, Artificial Intelligence and Machine Learning in Smart Grid - Performance Comparison between Topology Identification Methodology and Neural Network Identification



[Smart grid ppt , PPT](#)

This document discusses smart grid technology. It defines smart grid as an electric grid that uses information and communication technology to gather data and act on information about supplier and consumer behavior. The key components of a smart grid are smart meters,

phasor measurement, information transfer, and distributed generation.



Efficient neural network architecture for topology identification in

Identifying arbitrary power grid topologies in real time based on measurements in the grid is studied. A learning based approach is developed: binary classifiers are trained to approximate the maximum a-posteriori probability (MAP) detectors that each identifies the status of a distinct line. An efficient neural network architecture in which features are shared for inferences of all line



Adaptable Smart Distribution Grid Topology Generation for

...

Adaptable Smart Distribution Grid Topology Generation for Enhanced Resilience Authors : Nataša Gajić, Stephen Dirk Bjørn Wolthusen Authors Info & Claims Critical Information Infrastructures Security: 18th International Conference, CRITIS 2023, Helsinki Region, Finland, September 13-15, 2023, Revised Selected Papers

[Creating a smarter grid](#)

Since 2012, JPS has been investing in technological intelligence, consistent with the phased transformation of its islandwide infrastructural network into a Smart Grid.

114KWh ESS



[On Topology Attack of a Smart Grid](#)

On Topology Attack of a Smart Grid Jinsub Kim and Lang Tong School of Electrical and Computer Engineering Cornell University, Ithaca, NY 14853. Email: {jk752, lt35}@cornell Abstract--Cyber attacks on a smart grid aiming at mislead-ing the control center with incorrect topology information are considered.

Smart grid in cell topology. , Download Scientific Diagram

Smart grids require information and communication technology (ICT) in order to control dynamics in the power grid. However, adding ICT creates additional entry points in vulnerable hard- and



Smart Grid and Power System Topologies

Issue on Smart Grid and Power System Topologies featuring "How DERs may change grid topology and affect system status and performance", grid topology. bolorchi. topology. June 2020. More Like This. 01 Nov 2023. November - ...



IEEE TRANSACTIONS ON SMART GRID (TO APPEAR) 1 ...

like) topology, which can be modified by changing breaker statuses on available lines [54]. In recent years, the growth of behind-the-meter distributed energy resources (DERs) and smart loads (e.g., air-conditioners, storage devices, electric vehicles) have brought distribution grids to the forefront of smart grid advancement [85].



Jamaica Public Service reports benefits from smart grid ...

Jamaica Public Service reports improvements in power reliability as well as streetlighting energy efficiency. Jamaica's electricity utility has reported that during 2020 the frequency of unplanned power outages fell by ...



Learning Distribution Grid Topologies: A Tutorial

like) topology, which can be modified by changing breaker statuses on available lines [54]. In recent years, the growth of behind-the-meter distributed energy resources (DERs) and smart loads (e.g., air-conditioners, storage

devices, electric vehicles) have brought distribution grids to the forefront of smart grid advancement [85].



The Role of Smart Grids in Jamaica's Energy Future

Smart grids can help address this challenge by efficiently managing the integration of renewable energy sources into the grid. They can prioritize the use of renewable energy when it is available and switch to other ...

Adaptable Smart Distribution Grid Topology Generation for ...

In the authors generate a small-scale grid topology for smart low voltage distribution grids. Most such networks are themselves anchored in real test data such as [6], which presents benchmark low voltage networks based on data sets from German networks, while in [18], the authors describe benchmarks for integrating distribution grid in



Grid Topology Identification With Hidden Nodes via Structured ...

I. Introduction. The knowledge of electric distribution grid topology 1 is crucial to many



power system applications, including state estimation, control of energy resources, and cybersecurity [1], [2]. However, operators have limited or no access to the grid's topology in real-time, and they need to identify it from measurements [3]. Identifying topology from measurements is a challenging

JPS ups investment in grid modernisation

The Jamaica Public Service (JPS) Company Limited will invest US\$41.9 million in its Grid Modernisation Plan, which is now in its final phase. The programme, which had ...

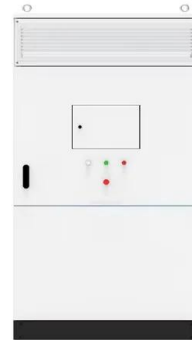


A Comprehensive Review on Smart Grids: Challenges and ...

Classification: (a) Smart Grid Network Topologies, (b) Smart Grid Technologies, and (c) Encryption used in Smart Grids. Table 2 shows the articles that can be classified into Smart Grid Technology. From this table it can be noted that most of the algorithms are categorized into the Internet of Things or Industrial Internet of Things.

Smart grid in cell topology. , Download Scientific ...

Smart grids require information and communication technology (ICT) in order to control dynamics in the power grid. However, adding ICT creates additional entry points in vulnerable hard- and



[PDF] On topology attack of a smart grid , Semantic Scholar

Cyber attacks on a smart grid aiming at misleading the control center with incorrect topology information are considered, and an undetectable attack that requires the modification of only a few meter data is proposed. Cyber attacks on a smart grid aiming at misleading the control center with incorrect topology information are considered. In such ...



Coordinated Topology Attacks in Smart Grid Using Deep ...

The coordinated topology attacks in smart grid, which combine a physical topology attack and a cyber-topology attack, are investigated and a deep-reinforcement-learning-based approach is proposed to determine the minimal attack resources. In this article, we investigate the coordinated topology attacks in smart grid, which combine a physical topology ...



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