

Why are PV power plants accelerating worldwide?

Deployment of PV power plants is accelerating worldwide due to substantial cost reduction and significant socioeconomic and environmental benefits (Joshi et al., 2021; Yu et al., 2018; Zhang et al., 2022).

Where are PV power plants located in China?

The PV power plants in eastern and central China mainly established on croplands (24.6%) and the occupation of croplands presents a significant reduction of 48% from 2017 to 2022.

Do PV power plants expand?

A framework is proposed to extract PV power plants and uncover their expansions. The PV polygons with installation dates in China from 2010 to 2022 is provided. The expansion patterns of PV power plants are explored in both space and time. The occupation of cropland and grassland by PV power plants has a declining trend.

Why is geospatial data important for PV power plants?

The up-to-date geospatial dataset of PV power plants and their expansion pattern analysis offer valuable insights into the understanding of PV development and its land occupation in both space and time, and thereby contribute to the policy-making of carbon mitigation for China.

What is the growth rate of PV power plants in China?

The area of PV power plants in China has over 600-fold increase from 5.86 km² in 2010 to 3712.1 km² in 2022 with the average annual growth of 285 km² and western China has the highest annual growth proportion of 53%.

How accurate is a geospatial dataset of PV polygons in China?

A geospatial dataset of PV polygons with installation dates in China from 2010 to 2022 is obtained with the F1-score of 96.08% for its spatial extent and the overall accuracy of 89.86% for its installation dates.

The lightning transient calculation is carried out in this paper for photovoltaic (PV) bracket systems and the distribution characteristic of lightning transient responses is also ...

rooftop solar photovoltaic potential accurately. This method was validated using high-resolution imagery from Beijing, demonstrating its effectiveness in identifying suitable rooftops for solar ...

2.1. Lightning Current Responses in Photovoltaic (PV) Bracket System A PV bracket system is typically constructed by a series of tilted, vertical and horizontal conductor branches as shown ...

I.e. Wang et al. (2016) found that the introduction of a FiT in China's PV industry increased the profitability

of listed firms in downstream parts of the value chain. On the other hand, authors ...

photovoltaic (PV) generation has become one of the most important renewable energy sources and has been widely used. A review of grid-connected inverters for photovoltaic modules ...

Two groups of photovoltaic modules, which were exposed to two typical climates, namely a hot-humid climate and a hot-dry climate, were investigated. Both types of modules were produced by Siemens...

DOI: 10.1038/s41467-020-15826-4 Corpus ID: 256637914; Solar photovoltaic interventions have reduced rural poverty in China @article{Zhang2020SolarPI, title={Solar photovoltaic ...

in Photovoltaic Bracket System during a Lightning Stroke Xiaoqing Zhang * and Yaowu Wang School of Electrical Engineering, Beijing Jiaotong University, Beijing 100044, China; ...

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