

How many ground-mounted PV power stations are there in China?

According to our dataset, China has a total of 2467.7 km<sup>2</sup> ground-mounted PV power stations in 2020. The top three largest provinces refer to Xinjiang, Inner Mongolia and Qinghai, whose PV area ratio are 14.92%, 12.49% and 11.26%, respectively, with a total of nearly 40% of all the PV power stations of China.

Do PV power stations have a high VG fraction?

Compared to the surrounding desert areas, PV power stations have high fractions of LA and SH, and low fraction of HA (Fig. 3 b,e,f). In Fig. 3 c, the shelterbelt is planted around the PV power station, which results in a high VG fraction at the edge of the PV power station.

What is the greening trend of PV power stations?

The desert vegetation in the deployment area of PV power stations presented a significant greening trend. Compared to 2010, the greening area reached 30.80 km<sup>2</sup>, accounting for 30% of the total area of PV power stations.

Can PV panels be installed over a grassy field?

Previously, a modelling study conducted by Cook and McCuen (2013) also indicated that the installation of PV panels over a grassy field did not have considerable effect on the volume of runoff, the peak discharge, and the time to peak.

Is there a spatiotemporal pattern of PV power in China?

Although these studies helped reveal the spatiotemporal pattern of PV power in China, most of them were performed using a single PV model and/or the radiation data with coarse resolution in both space and time, and as a result, showed large discrepancies in their estimates.

Can random forest predict PV power stations of China Parallely on GEE?

Finally, the trained random forest model is adopted to predict PV power stations of China parallelly on GEE. Technical validation has been carefully performed across China which achieved a satisfactory accuracy over 89%.

On the national scale, Feng et al. (2021) derived daily solar radiation at 0.5°; 0.5°; 0.5°; in China based on data at 110 ground sites and estimated an annual mean PV power ...

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