

Does the segmentation model apply to rooftop PV panels?

Segmentation model applicability: Rooftop PV has a high size variable, and there is a difference in the segmentation results of smaller-scale residential rooftop PV panels and larger-scale non-residential rooftop PV systems [31]. In this study, the RPS network focused on the varying sizes of rooftop PV panels.

What is roof-mounted solar PV?

The roof-mounted solar PV is installed at the optimum angle for each latitude and is sun-facing and shade-free to generate maximum electricity output. The building rooftops are flat in design leading to the utilization of the entire rooftop for the installation of solar panels.

Does rooftop PV potential estimation method perform well?

The rooftop PV potential was estimated to total 22,551 GWh. Therefore, the performance of the rooftop PV potential estimation method performs well. In this study, the solar radiation data are the global surface solar radiation (3 h, 10 km) which is more suitable for large-scale photovoltaic potential assessment.

How many rooftop photovoltaic panels are suitable for PV installation?

A total of 176 roofs in six scenarios were suitable for PV installation, and the estimated photovoltaic panel area was 205,827 m<sup>2</sup>. The rooftop photovoltaic potential was estimated to total 22,551 GWh. The results indicated that the rooftop photovoltaic potential estimation method performs well.

Is rooftop PV the future of solar energy?

In 2020, 127 GW of new PV power generation were installed globally, bringing the cumulative installed capacity to 707 GW. Among the available technologies, rooftop PV is the inevitable trend of the coming decades. Understanding rooftop PV potential is critical for the development and utilization of solar energy.

Are rooftop PV systems a viable alternative energy generation technology?

According to SolarPower Europe, global rooftop PV installations experienced a staggering growth of 50%, reaching 118 GW in 2022, representing 49.5% of total installations, demonstrating the promising potential of rooftop PV systems as an alternative energy generation technology.

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