

What is cable-supported photovoltaic (PV)?

Cable-supported photovoltaic (PV) modules have been proposed to replace traditional beam-supported PV modules. The new system uses suspension cables to bear the loads of the PV modules and therefore has the characteristics of a long span, light weight, strong load capacity, and adaptability to complex terrains.

Do flexible PV support structures deflection more sensitive to fluctuating wind loads?

This suggests that the deflection of the flexible PV support structure is more sensitive to fluctuating wind loads compared to the axial force. Considering the safety of flexible PV support structures, it is reasonable to use the displacement wind-vibration coefficient rather than the load wind-vibration coefficient.

What are the characteristics of a cable-supported photovoltaic system?

Long span, light weight, strong load capacity, and adaptability to complex terrains. The nonlinear stiffness of the new cable-supported photovoltaic system is revealed. The failure mode of the new structure is discussed in detail. Dynamic characteristics and bearing capacity of the new structure are investigated.

What is a flexible PV mounting structure?

**Flexible PV Mounting Structure Geometric Model** The constructed flexible PV support model consists of six spans, each with a span of 2 m. The spans are connected by struts, with the support cables having a height of 4.75 m, directly supporting the PV panels. The wind-resistant cables are 4 m high and are connected to the lower ends of the struts.

Does a flexible PV support structure exhibit a consistent response trend?

However, for mid-span acceleration, the wind suction condition results in greater values than the wind-pressure condition. Overall, it can be concluded that the flexible PV support structure exhibits a consistent response trend under both wind-suction and wind-pressure conditions. Figure 10.

Is flexible PV support a nonlinear system?

Given the significant geometric nonlinearity inherent in the flexible PV support system, the analysis incorporates nonlinear approaches, specifically selecting the P-D effect and large displacement effects. The time step is set to 1000, with a time interval of 0.1 s.



# Steel strand for photovoltaic flexible support

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