

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 are the structural static characteristics of a new PV system?

The structural static characteristics of the new PV system under self-weight, static wind load, snow load and their combination effect are further studied according to the Chinese design codes (Load Code For The Design Of Building Structures GB 2009-2012 and Code For Design Of Photovoltaic Power Station GB 50797-2012).

What are PV modules made of?

The columns and lateral beams are made of reinforced concrete and steel I-beams, respectively. The load-bearing cables and anchor cables are pretensioned steel wires. The PV modules are directly installed on the upper load-bearing cables (Cables 1 and 2). The pretensioned cable is referred to as Cable 3.

What is the JIS code for photovoltaic modules support structures?

NB/T 10115-2018; Code for Design of Photovoltaic Modules Support Structures. General Electric Power Planning and Design Institute: Beijing, China, 2018. JIS C 8955; Load Design Guide on Structures for Photovoltaic Array. Japanese Standards Association: Tokyo, Japan, 2017. Browne, M.T.L.; Taylor, Z.J.; Li, S.

What factors affect the bearing capacity of new cable-supported photovoltaic modules?

The pretension and diameter of the cables are the most important factors of the ultimate bearing capacity of the new cable-supported PV system, while the tilt angle and row spacing have little effect on the mechanical characteristics of the new type of cable-supported photovoltaic modules.

Are cable-based mounting systems a viable alternative to traditional mounting systems?

Baumgartner et al., 2008, Baumgartner et al., 2009, Baumgartner et al., 2010, Baumgartner et al., 2013a introduced the cable-based mounting system and concluded that it is a viable alternative to traditional mounting systems.

construction easier and less expensive. The specifications were developed with significant input from stakeholders including policymakers, code officials, solar installers, and successful RERH ...

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Cable-supported photovoltaic systems (CSPSs) are a new technology for supporting structures that have broad application prospects owing to their cost-effectiveness, light weight, large span, high headroom, few pile ...

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Steel cable photovoltaic panel on-site construction