Photovoltaic support cable structure calculation

In this study, the failure models and bearing capacity of the primary structures of the new CSPS were investigated in detail using the FEM method, and a design method for the new structure ...

In this paper, the mechanical behavior of a single-cable structure is introduced, and the simplified analytical formulations for internal force and displacement are deduced based on the ...

The load bearing capacity of the PV system is discussed under self-weight, static wind load, snow load, and their combination. The influences of row spacing, tilt angle, initial cable force, ...

In this study, the structural characteristics of the new PV system with a span of 30 m are numerically investigated in terms of mode shapes, modal frequency, and nonlinear structural...

In order to respond to the national goal of "carbon neutralization" and make more rational and effective use of photovoltaic resources, combined with the actual photovoltaic substation project, ...

In this paper, the new flexible photovoltaic support structure is summarized, and the related research articles on the structural design model and wind-induced effect of the flexible ...

To improve the span and stiffness and widen the application scene of the flexible photovoltaic support system, a new type of three-dimensional cable-truss flexible photovoltaic support system is proposed ...

Considering the strain energy generated by cable force variation, the method presented in the paper has higher calculation accuracy for suspension cable structures with a small rise-span ratio, and includes ...

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 ...

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In this study, a novel hydrodynamic-structural-material coupled analytical model is developed for a very large floating photovoltaic support structure made with UHPC and EPS ...

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