Photovoltaic support design in frozen soil areas

512 Wang et al. / J Zhejiang Univ-Sci A (Appl Phys & Eng) 2016 17(7):512-524 Experimental study on the anti-jacking-up performance of a screw pile for photovoltaic stents in a seasonal ...

In order to ascertain the native species best adapted to different soil and climatic conditions in Mediterranean areas degraded by the installation of solar photovoltaic farms, six ...

An energy pile (EP) is a new structure form combining a building pile foundation and GSHP. In an energy pile, a heat exchange pipe is embedded into the pile foundation, and ...

The soils in seasonal frozen regions freeze and thaw frequently, causing severe frost heave and thaw settlement problems, which bring challenges to piles of photovoltaic stents.

Instruments and experimental design. Different types of PV panels are installed in the study area. The FIX PV panels are tilted 34° from the horizontal plane and pointed towards ...

1. Introduction. Seasonally frozen soil is defined as soil or rock having a monthly mean temperature below 0 °C during cold seasons for at least one year and is characterized ...

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These design parameters depend on the soil resistivity of the installation area. Thus, initially, accurate soil resistivity measurements at the site of the planned installation should be ...

In this paper, a simplified two-dimensional porous medium heat transfer model was established to investigate the thermal performance of ground heat exchange pipes on pre-frozen underground soil around the solar ...

the mean soil temperature under the PV panels during the growing season was cooler by approximately 4 °C compared with that of the gap area between PV panel rows (Makaronidou ...

PV SYSTEMS - PHOTOVOLTAIC SOLAR SUPPORTS - Due to the location, the field configuration, necessary resistance to snow and wind, the geotechnical study, the model, weight and size of the panels and the favorite electric ...

The results show that: (1) according to the general requirements of 4 rows and 5 columns fixed photovoltaic support, the typical permanent load of the PV support is 4679.4 N, ...

Thus, this article studied the effects of two types of PV panels (fixed-tilt PV panels and oblique single-axis PV panels) on soil temperature in a desert climate area through field ...

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