

自錨式吊拉組合橋地震反應之探討

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摘要

A combined cable-stayed suspension bridge, including main girder, tower, main cable, vertical hangers and stayed cables, is characterized by its elegant structural shape. It possesses combines merits of both a self-anchored suspension bridge and a cable-stayed suspension bridge, which forms a totally renewed structure mechanism and is therefore expected to have a more extensive developing room in our country. In order to further understand the applicability of the self-anchored cable-stayed suspension bridge, this paper is intended to investigate the seismic response of self-anchored cable-stayed suspension bridge.

By using ANSYS program and by performing response spectrum analysis, the seismic response along the longitudinal direction of self-anchored cable-stayed suspension bridge were analyzed in this paper in order to understand the characteristic of the seismic response of self-anchored cable-stayed suspension bridge. In addition, the influences of geometric changes and stiffness changes of substructures on the seismic response of self-anchored cable-stayed suspension bridge were also studied in this paper. The results of this paper will be of great use to the designers and researchers in our country.

關鍵字：Self-anchored; Cable-stayed Suspension Bridge; Response Spectrum; Seismic Spectrum