



## Vibration and Mode Shapes Analysis of Cable Stayed Bridges Considering Different Structural Parameters

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GRIN Verlag GmbH Feb 2014, 2014. Taschenbuch. Book Condition: Neu. 211x149x7 mm. Neuware - Research Paper from the year 2014 in the subject Engineering - Civil Engineering, grade: unknown, University of Weimar, language: English, abstract: The vibration characteristic of a cable stayed bridges structure is the main axis of the study in this paper, many structural parameters are used to simulate and determine the effect of vibration on the structural performance by identifying the natural frequencies of the system and the mode shapes that can occur in the real structure. Modeling the stay cables with three famous styles of arrangements such as Harp, Semi Harp and Fan styles, and assigning roller, hinged and fixed boundary conditions on the deck support of the cable stayed bridge, in addition to using two design cases of the girders and pylons dimensions in the global structure for that purpose. Through the use of ABAQUS finite element analysis, the models were generated for each mentioned cases and the results of the frequency linear perturbation step of 10 mode shapes were determined through the simulation of the deformed shapes and the determined values of the natural frequencies of each mode for each case of interest. It...



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