## عنوان مقاله:

Dynamic Analysis of a Large HSR Viaduct Station Subjected to Train loads

## محل انتشار:

پنجمین کنفرانس بین المللی پیشرفت‌های اخیر در مهندسی راه آهن (سال: 1396)

تعداد صفحات اصل مقاله: 8

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## خلاصه مقاله:

In this paper, the vibration responses and the comfort characteristics of a large HSR viaduct station, the New Guangzhou Railway Station, are studied based on the train-structure interaction system. The train vehicle is modelled by the rigid-body dynamics and the wheel-rail interaction force is defined by the displacement corresponding assumption. The structure is modelled by the finite element method, where the superposition method is adopted to reduce the number of DOF. The whole histories of the Pioneer Train passing the station are simulated, with train speed of 200km/h, based on which the structural vibrations of the waiting hall are analyzed and the comfort characteristics of the railway station are estimated. The calculating results show that the floor vibration of the waiting room in the New Guangzhou Railway Station is 0.0185g, which is between the allowances for shopping center and pedestrian bridge, and the side part of the floor exhibits more intense lateral vibration, while the vertical accelerations .are random distributed

## کلمات کلیدی:

high-speed railway, viaduct station, train loads, vibration response, comfort evaluation