

## عنوان مقاله:

Numerical validation of a hybrid approach for the assessment of vibrations and reradiated noise in buildings due to railway traffic

## محل انتشار:

ششمین کنفرانس بین المللی پیشرفتهای اخیر در مهندسی راه آهن (سال: 1398)

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## خلاصه مقاله:

In this paper, a hybrid experimental/numerical methodology for the assessment of railway induced ground-borne noise and vibration in buildings based on experimental measurement in the ground surface is proposed and validated. The application of such approach is focused in the prediction of vibrations and re-radiated noise inside buildings to be constructed nearby existing railway infrastructures. Departing from this presuppose, experimental data about ground-borne vibrations in the free field, i.e., before building construction, can be measured. Based with these experimental data, a numerical model is constructed in order to compute a set of virtual forces applied in the ground that give rise to the same incident wave field induced by the railway infrastructure. These virtual forces are subsequently applied on a model of the building/soil system to obtain a prediction of the vibration that will be induced by the existing railway track to the studied building. In the present work, this methodology is presented and validated numerically by a twodimensional example. The proposed hybrid model makes the simulation of vibrations inside future buildings close to railway infrastructures easier. Even more relevant, it reduces the uncertainty of the prediction due to the use of experimental measurements of the particular site to be studied.

## کلمات کلیدی:

Hybrid methodology, Noise & vibration assessment, Ground borne vibrations, Uncertainty of prediction

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/982631>

