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Improving the Seismic Behavior of Railway Tracks Using Parametric Analysis of Components

J. A. Zakeri[1], P.H. Abdulrazagh[2]

[1]*Department of Railway Engineering, Iran University of Science & Technology, Tehran, Iran, zakeri@iust.ac.ir*
[2]*Department of Civil Engineering, Tehran University, Tehran, Iran, p.abdulrazagh@ut.ac.ir*

ABSTRACT

The stability of railway track system under earthquake load is one of the main concerns of railway engineering. Not considering the seismic effect in the common design methods of railway track, highlights the importance of some revisions in the design methods. In the other words, improvement of the seismic behavior of track system under earthquake load in the railway and subways is the interest of railway industry which is the subject of this paper. Herein, the three dimensional finite element model of the railway track is evaluated by pseudo-static method, and verified for a sample model by the results of the scaled-model shaking table test which was done at University of Tokyo. Then the proposed methods were presented by sensitivity analysis of railway track parameters.

Keywords: Earthquake, Improvement, Railway, Finite Element Analysis, Shaking table test, Seismic Behavior.