

FREE ROCKING: NUMERICAL AND EXPERIMENTAL ANALYSIS OF RESTITUTION AND POST-IMPACT BEHAVIOUR

Nina Čeh¹, Gordan Jelenić¹ and Nenad Bićanić²

¹ Faculty of Civil Engineering, University of Rijeka, Radmile Matejčić 3, 51000 Rijeka,
 {nina.ceh,gordan.jelenic}@uniri.hr

² deceased

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Free rocking of a prismatic rigid block is analysed and a numerical procedure based on precise contact detection is developed and tested. In addition, a comprehensive parametric study of free rocking of blocks of different slenderness and size is conducted experimentally. Post-impact behaviour and energy loss in relation to existing restitution models (Housner's classical model [1] and the improved model by Kalliontzis et al. [2]) is investigated in detail. Based on the numerically and experimentally obtained results, the use of the improved model is strongly encouraged, and a procedure to estimate the unknown parameter in the improved formula is suggested.

REFERENCES

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