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Experimental survey on seismic response of masonry models

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Abstract

This paper is focused on the elaboration of the results recorded during some dynamic experimental tests executed on a masonry arch placed on a shaking table facility at Laboratory of the ENEA Casaccia Research Center. The experimental results are correlated to the theoretical results obtained by means of some calculus codes, which have been elaborated for applications on masonry structures by the researchers of the Department of Structural Engineering of the University of Naples "Federico II" and suitably modified for the study model. The results have shown that the curves solved by the static calculus may be given an exponential form as the dynamic curves by the tests; moreover, it is evident that the static degradation is much faster than in the seismic response, probably thanks to kinetic energy absorption that helps the structure to resist inertia forces. © 2008 Taylor & Francis Group, London.

Indexed keywords

Experimental survey; Experimental test; Exponential form; Inertia force; Masonry arches; Masonry structures; Research center; Shaking tables; Structural engineering; Theoretical result

Engineering controlled terms: Calculations; Masonry materials; Safety engineering; Seismic response

Engineering main heading: Structural analysis

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1 INTRODUCTION

Some interesting experimental tests have been developed

The scope of the present study, and, in general, of the experimental campaign, is to characterize the own vibration frequency of existing structures and to elaborate methods to complete the theoretical results to