

# Experimental analysis of the thermohygrometric effects on the dynamic behavior of adobe systems

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© 2019 Elsevier Ltd Through long-term monitoring, modal parameters identified in-situ can provide important information about the safety state of civil buildings and infrastructures. Unfortunately, structures are subjected to changing environmental conditions that can mask variations in the dynamic properties caused by damage and, therefore, lead to an incorrect condition assessment. The quantification of the influence of environmental conditions on modal parameters is a crucial step to eliminate their interference in a safety evaluation. Under current state-of-the-art considerations, this step is still an open challenge because environmental variables are time-dependent non-uniform quantities that have different influences on structural systems depending on the predominant material. In this paper, the effects of ambient temperature and humidity on the dynamic properties of earthen constructions are investigated using laboratory tests. A dynamic monitoring system was successfully imple