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Ignacio Lombillo is Professor at the School of Civil Engineering of Santander in the University of Cantabria, where he carries out his activity as lecturer and researcher on building technology and refurbishment. He is head of the Building Technology R&D Group. A significant part of his research effort has been devoted to the development of criteria and experimental methodologies for the conservation and restoration of monuments and historical structures. He is director of the Master on Building Technology, Refurbishment and Management, and of the REHABEND Euro-American Congresses on Construction Pathology, Rehabilitation Technology and Heritage Management.

A NEW METHODOLOGY FOR CONTINUOUS STRESS MONITORING OF EXISTING MASONRY STRUCTURES: LABORATORY VALIDATION AND ONSITE RESULTS

Knowledge of the mechanical characteristics of the materials and the behaviour of the structure play an important role in the process of intervention in ancient buildings. Moreover, the heterogeneity of these structures and/or the necessity to know how effective a reinforcement will be, among other aspects, make it necessary to propose new devices and/or techniques that enable the characterisation and evaluation of the associated masonry structures. This conference presents a novel slightly destructive technique for continuous monitoring of stress variations undergone by existing masonry structures. It is based on the estimation of the existing stress state, and its continuous monitoring over time. The development methodology and the validation of results obtained by the stress device in laboratory are discussed. In addition, its implementation in a historic building is presented. The results show the capability of the proposed device to evaluate the continuous stress monitoring of existing masonry structures during intervention processes.