Structural Engineering International: Journal of the International Association for Bridge and Structural Engineering (IABSE)
Volume 12, Issue 4, 2002, Pages 283-288

# Seismic evaluation and retrofit of historical churches

Sorace, S.[a], **Terenzi, G.**[b]
[a] University of Udine, Udine, Italy
[b] University of Florence, Florence, Italy

## Abstract

A methodology for evaluating the seismic response capacities of historical churches is presented. Specially calibrated performance objectives, including the issue of "cultural value safety", and related acceptance criteria are formulated to this aim. A mixed displacement and strength-based control of response is carried out, by interpreting the results of finite element analyses in the dynamic field. A typical historical church is then assessed, where some deficiencies emerge with respect to the proposed criteria. A special base-isolation technology is finally examined as a viable retrofitting strategy for this church, as well as for a wide class of similar buildings where the established performance objectives are not met.