



IALCCE 2012

Third International Symposium
on Life-Cycle Civil Engineering

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Hofburg Palace, Vienna, Austria

IALCCE

The Symposium is organized on behalf of International Association for Life-Cycle Civil Engineering (IALCCE) under the auspices of the University of Natural Resources and Life Sciences. IALCCE (www.ialcce.org) is a young Association founded in October 2006. Its activities encompass all aspects of life-cycle assessment, design, maintenance, rehabilitation, and monitoring of civil engineering systems.

The International Symposium on Life-Cycle Civil Engineering is a biennial event. In 2012, Austria will host the Symposium for the first time. The IALCCE 2012 Symposium provides an opportunity for academics, engineers, architects, and builders from Austria, Europe, and around the world to keep themselves up to date with latest developments in the field of life-cycle civil engineering.

Special - Sessions SS 4-2:

Fatigue of Concrete - Experiments, Models, Applications

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Fatigue damage of concrete is an important problem in long-term resistance and durability of concrete and reinforced concrete structures subjected to cyclic loading as railway sleepers, anchoring regions of prestressed bridges, or fundaments of wind power plants. Although fatigue, in particular testing of fatigue properties and modelling of material and structural response, is a well-covered topic for metals and similar materials, for concrete (and many other materials commonly used in civil engineering as masonry, timber, or composites) appropriate testing methods or numerical models giving reliable prediction of fatigue damage and fatigue crack growth are still under development, and there are only few experimental data available.

This special session will concentrate on fatigue behaviour of concrete and similar (cementitious, quasi-brittle) civil engineering materials, especially

- testing methods and fatigue tests for various types of cyclic loading (primarily in tension or in bending)
- fracture mechanics under fatigue load - measurement of fracture properties, numerical modelling
- evaluation of test results, approximation of S/N curves for concrete and cementitious materials
- numerical material models for fatigue crack initiation and development, or other damage caused by cyclic loading
- design and assessment of structures subjected to significant cyclic loads (applications, case studies)