



DICAM

DIPARTIMENTO DI INGEGNERIA CIVILE, AMBIENTALE E DEI MATERIALI

Invito al seminario:

Use of accelerometer technology for identifying deterioration in structures

Auletta LAMC, Facoltà di Ingegneria, Viale Risorgimento 2, Bologna

Giovedì 16 luglio 2015 – ore 10.30

Dr. **John Nichols** Texas A&M University, Dr. **Adrienn Tomor**, University of West England

Abstract:

Vibration of structures, including roadway structures, is a major issue in terms of the time to failure of the structure. The issue up until recently has been the cost to measure the vibrations and the time required for the experimental setup. The CX1 accelerometer provides market available device that can measure accurately to a level below the thermally induced acceleration of structures. The in situ infrastructure in terms of software, data acquisition, initial analysis and data communication system are at a near to market level, but require in-situ testing to demonstrate the utility and solve the last of the research problems related to quality control and data presentation. Dr. Nichols is the coordinator of a new INFRAVATION program linking Texas A&M, University of West England and UniBO. The program is based on the large previous experience of Dr. Nichols and Dr. Tomor in damage and deterioration identification in masonry and concrete bridges.

La partecipazione è aperta a dottorandi, ricercatori, professori, tecnici interessati al controllo delle infrastrutture e degli edifici strategici mediante metodi non distruttivi.

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John Nichols



Dr. Nichols has thirty years' experience in structural engineering, dynamic analysis of buildings and forensic engineering having worked at Texas A&M University, the University of Illinois at Urban Champaign, Curtin University of Technology and the University of Newcastle, Australia. He worked for fifteen years for a major Australian Consulting Engineering group achieving shareholder level. He has designed bridges for mining companies. His research in the last decade has focussed on the use of accelerometer technology to measure the dynamic properties of steel and masonry bridges in the USA and Europe. He has made measurements of the Pont-y-Prydd Bridge and the Pont-du-Gard using the CX1 and the software he has developed. He worked with Dr. Tomor on measurement of a concrete bridge in Canada. He has published about 100 papers.

Adrienn Tomor

Dr Adrienn Tomor is senior lecturer at the University of the West of England, UK. She has been working on masonry arch bridges for the past 20 years with particular interest in long-term life expectancy and acoustic emission NDT monitoring for masonry.

She has organised the first European network on masonry arch bridge research (SMART network, EPSRC GR/R84566/01), a number of Masonry Arch Bridges master classes and the first Bridge Inspection Course in the UK to provide training opportunities for the new Bridge Inspection Certificate scheme designed by the UK Department of Transport. She has initiated and is organising a large-scale construction project in the UK to act as a feasibility study for building masonry arch bridges as long-lasting, low-maintenance alternatives for new bridge construction in the 21st century. The project has gained international interest and led to initiating a US-European advisory board for the construction of new masonry arch bridges for the USA. Dr Tomor is currently writing guidelines for the International Union of Railways (UIC) for assessment of long-term life expectancy of masonry arch bridges (UIC project P/0314).