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The Department of Civil and Environmental Engineering, PhD programme in Structural, Seismic and Geotechnical Engineering, is glad to invite you to the following:

Colloquia Doctoralia Seminar

PhD Final Exam – 7th Session

Speaker: Prof. Joan Ramon Casas Rius
(Universitat Politècnica de Catalunya –
BarcelonaTech)

6th July 2017
15:30 – 16:30

Beltrami Room – Building 5
Campus Leonardo

Structural health monitoring of bridges: old and new techniques

Prof. Joan Ramon Casas Rius (Universitat
Politècnica de Catalunya – BarcelonaTech)

SHM is of paramount interest for an optimum assessment and maintenance policy of existing structures and bridges in particular. A Damage Identification Procedure (DIP) comprises three main levels: Detection, Localization and Quantification. In the presentation two existing SHM techniques are shown.

One is based on dynamic identification with data recorded from acceleration transducers and has been extensively used. The other one is an emerging technique still in progress, based on static tests where strain and temperature are measured with distributed fiber optic sensors.

In both cases, some applications using the two techniques carried out by the UPC research group on several bridges and buildings will be presented, showing the main possibilities, advantages and disadvantages and further research possibilities.

Short Bio

Prof. Joan Ramon Casas Rius

Dr. Joan Ramon Casas Rius is full professor of Bridge Engineering at the School of Civil Engineering of Barcelona. He is a Civil Engineer (M.Sc.) since 1984 and Ph.D. by the Universitat Politècnica de Catalunya-BarcelonaTech since 1988.

His research interests include: Bridge Safety and Durability, Reliability-based Inspection and Management of Concrete Bridges, Bridge loading, Long-term performance and Life-cycle analysis of bridges, Concrete Bridge Design and Construction, Dynamic testing of bridges, Inspection methods and Structural Health Monitoring, Bridge Repair and Strengthening with Advanced Composites.

He has been Secretary General of IABMAS (International Association for Bridge Maintenance and Safety) since 1999 and former Chairman of Working Commission I on Structural Performance, Safety and Analysis of IABSE (2009-2013). He is member of FIB Commissions 3 (Existing Concrete Structures) and 8 (Structural Service Life) and member of the Technical Council on Life-Cycle Performance, Safety, Reliability and Risk of Structural Systems of ASCE (American Society of Civil Engineers).

