Dottorato Internazionale in Ingegneria Civile e Ambientale

A V V I S O   D I   S E M I N A R I O

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Giovedì 25 Gennaio alle ore 11:00,
presso il Dipartimento di Ingegneria Civile e Industriale dell'Università di Pisa,
aula Pacinotti del Polo A della Scuola di Ingegneria,
terrà un seminario, della durata di circa 2 ore, dal titolo

Automatized Inspection and Monitoring of Existing Structures for Enhanced Structural Assessment and Correct Maintenance

Abstract. Automatized survey, construction, inspection, maintenance, restoration and reconstruction have become challenging activities conducted during the process of cultural heritage and civil infrastructure management, due to the revolutionary impact of information technology and mechatronics in the routine operations. The complete process will be overviewed, during the seminar, considering different aspects related to the interconnection between classical engineering and architectural problems with the emerging technologies related to automation, robotics and information communication technologies (ICT). The impact of new technologies on data acquisition for survey, inspection, identification and monitoring will be firstly considered evidencing how the use of robotized systems and easy realizable sensor networks determines new sets of available data to be processed. Emphasis will be given to geometric data extracted through novel methodologies, the use of which will be discussed within the use of automated data acquisition systems. The integration among different information and numerical models will permit to evidence the novelties related to the use of ICT in order to build an exhaustive and unique description of the examined construction. Data and models will be then used to identify and to describe defects and degradation especially in view of determining possible reduction of integrity and reliability in existing structures. Finally it will be shown how all the acquired knowledge opportunely managed constitutes the input for automated or partially-automated decision making process useful in the control, retrofitting and management of large facilities and infrastructure. A series of example will be proposed, taken by the process of reconstruction of the city of L'Aquila.

Referenti dell'invito:

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(*Prof. Ing. Massimo Losa*)