

SEDNKEC 3009

Constructions and Durability of Materials and International Symposium on Safety

25-27 February 2009 Barcelona, Spain

Symposium Secretariat

International Center for Numerical Methods

Edificio C1, Campus Norte UPC, Gran Capitán s/n,

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- International Center for Numerical Methods in Engineering

- Applied Sciences (ECCOMAS)

Symposium Venue

specific location will be announced in the symposium web page. Catalonia (UPC), Jordi Girona 1-3, 08034 Barcelona, Spain. The SEDUREC 2009 will take place at the Technical University of

Registration Fees

registration applicable if received before January 15, 2009 are: The registration fees, including social events, with early

312€ 3 081 Students 300 € 300 € Delegates Early

reception and banquet ceedings; Attendance at all scientific sessions; Coffee breaks, delegates fees. The delegate fees will include: Conference Pro-ECCOMAS and IACM members will have a 5% reduction on the

the symposium web site. Registration should be performed electronically via

http://congress.cimne.upc.es/sedurec09

Accommodation

organizers. For detailed information visit the conference site. Block reservations at preference rates will be arranged by the

in Engineering (CIMNE)

Supporting Organisations

(CIMNE), Barcelona, Spain

- School of Civil Engineering, Barcelona, Spain
- Universitat Politécnica de Catalunya (UPC), Barcelona, Spain
- Universidad Politécnica de Madrid (UPM), Spain
- European Community on Computational Methods in
- International Association for Computational Mechanics (IACM)
- Eduardo Torroja Institute for Construction Science, Spain

List of speakers

C. Andrade, Inst. de Ciencias de la Construcción Eduardo Torroja, Spain

A. Barbat, Univ. Politècnica de Catalunya, Barcelona, Spain

A. Bentur, Israel Institute of Technology, Haifa, Israel

F. Biondini, Politecnico di Milano, Italy

F. Bontempi, University of Rome "La Sapienza", Rome, Italy

J.R. Casas, Univ. Politècnica de Catalunya, Barcelona, Spain

M. Faber, Institut f. Baustatik und Konstruktion, Zürich, Switzerland

D.M. Frangopol, Lehigh University, Bethlehem, USA

J. Hurtado, Univ. Nacional de Colombia, Manizales, Colombia

D.R. Jones, University of Cambridge, Cambridge, UK

H. Mang, Technische Universität Wien, Wien, Austria

A. Marí, Univ. Politècnica de Catalunya, Barcelona, Spain

J. Mazars, Institut National Polytechnique de Grenoble, France

G. Meschke, Ruhr-Universität Bochum, Germany

X. Oliver, Univ. Politècnica de Catalunya, Barcelona, Spain

E. Oñate, Univ. Politècnica de Catalunya, Barcelona, Spain

M. Papadrakakis, National Technical University of Athens, Greece R. Owen, University of Swansea, UK

G.Pijaudier-Cabot, Lab. des Fluides Complexes, UMR, Anglet, France

O.I. Rio, Inst. de Ciencias de la Construcción Eduardo Torroja, Spain H. Reinhardt, University of Stuttgart, Germany

P. Roca, Univ. Politècnica de Catalunya, Barcelona, Spain

J. Rodríguez, DRAGADOS, Madrid, Spain

J. Rojek, Inst. of Fundamental Technological Research, Warsaw, Poland

V. Sánchez Galvez, Univ. Politécnica de Madrid, Madrid, Spain

B. Schrefler, Univ. of Padova, Italy

S. Shah, Tecnological Institute, USA

B. Suárez, Univ. Politècnica de Catalunya, Barcelona, Spain

P. Tanner, Inst. de Ciencas de la Construcción Eduardo Torroja, Spain

M.A. Toledo, Universidad Politécnica de Madrid, Spain

F. Tomosawa, Univ. of Tokyo, Japan

K.J. Willam, Dept. of CEAE, Boulder, Colorado, USA

The SEDUREC Project

Safety and Durability of Constructions supported by the Conso-SEDUREC 2009 is an innitiative of the SEDUREC Project on

the Ministry of Science and lider Ingenia 2010 Programme of

Education of Spain.

An ECCOMAS Thematic Conference

Sciences (ECCOMAS) www.eccomas.org European Community in Computational Methods in Applied SEDUREC 09 is one of the Thematic Conferences of the

http://congress.cimne.upc.es/sedurec09

Objectives

Symposium Programme

SEDUREC 2009 will address the advances in both the

implementation of algorithms for static and dynamic problems involving rapidly. Significant advances have been made in the formulation and structures with standard and new composite materials is advancing The ability to provide numerical simulations for predicting failure of engineering and architecture. of the safety and durability of materials and constructions in civil computational methods and the experimental techniques for the analysis

analysis and very often offer the only means of solution for practical element methods, are now extensively employed in non-linear structural Numerical techniques, and in particular finite element and discrete with fundamental material principles and experimental observations. order to produce theoretical models which provide a response in keeping interaction between numerical analysts and material scientists in large scale fracturing, etc. Such advances, however, demand a closer behaviours including multi-physics or multi-scale effects, progressive finite strains, complex contact interaction laws, constitutive material

engineering problems.

MILEJESZ SEUZOL UETMOLKS (MZIA) IUCOLDOLSTIUB THE SAVANCES IN NETWORKED Experimental methodologies for structural analysis on the other hand,

durability of constructions. maintenance systems add new possibilities for enhanced safety and into-mechanical systems (MIMS) for intelligent control and operation of are undergoing significant technological changes. The development of

2FDOREC 2009 will act as a forum for developers and partitioners in

allowed for each presentation.

C. Andrade

E. Oñate (chairman)

durability of constructions. A time for questions and debate will be delivered by recognized international experts in the field of safety and SEDUREC 2009 has been organised on a number of keynote lectures

Sedurec 2009 Format

experimental techniques and identification of future research directions. discuss recent advances in both computational and the field of safety and durability of materials and constructions to

February, 26th, 2009

SESSION 3

SESSION 2

loads to impacts

Coffee

19:30 Welcome Reception

concrete structures

reinforcement

SESSION 4

Coffee

11:30

11:00

00:6

17:00

16:30

14:30

14:00

shells subjected to fire load

areas by means of scenarios

atructural reliability analysis

evolutionary analysis models

structural analysis and design

existing bridges. European Guidelines

numerical simulation of concrete and reinforced

Jerzy Rojek, Structural failure analysis using the

Carmen Andrade, Modelling of service life of the

Herbert Mang, Structural safety of concrete tunnel

Joan Ramon Casas, Safety and durability assessment of

Alex Barbat, Evaluation of the seismic risk in urban

Jorge Hurtado, Optimized information approaches for

Manolis Papadrakakis, Safety of structures under seismic

loading: A critical assessment of the design codes

structures along their service life by nonlinear

Antonio Mari, Evaluation of the performance of

Fabio Biondini, Life-cycle oriented methods for

Dan M. Frangopol, Lifetime safety, redundancy and

concrete structures: Concrete cover and field practices

concrete structures under severe loadings: From static

structures and the development of retrofitting strategies

Jesús Rodríguez, Safety and Durability of Constructions.

Arnon Bentur, Design for durability of reinforced

Jacky Mazars, A strategy to model the response of

Roger Owen, Computational modeling of damage in

durability of structures under uncertainty

Franco Bontempi, Structural robustness: Analysis and

Günther Meschke, Durability oriented modeling and

discrete method and combined discrete/finite element

Peter Tanner, Acceptable level of notional risks 00:6

ZERSION 7

February, 27th, 2009

Banquet 20:30

Farewell Cocktail

SESSION 8

Coffee

accounting for fluid-soil-structure interaction

Modelling and simulation of structural failure

Fuminori Tomosawa, The normative on durability of

Olga Rio, Instantaneous deformability of actual new

Mike Faber, Risk informed decision making concerning

structures - Problems of technology transfer between

David R. Jones, Avoiding tatigue failure in large steel

designers and codes, and codes and the scientific literature

Pere Roca, Reliability analysis of historical structures

Eugenio Onate and Benjamin Suarez

concrete structures in Japan

concept concrete for tunnels

associated with structural design.

engineered facilities

13:30

11:30

11:00

Hans Reinhardt, Exposure supported frost testing of safety and deterioration in front of material failure approach: A computational setting to evaluate structural Xavier Oliver, The continuum strong discontinuity

durability of concrete

Bernard Schrefler, Simulation of fire resistance and effect on reinforced concrete structures

Vicente Sanchez Galvez, Numerical simulation of blast **SESSION 6** 17:00

Coffee 08: 91

models and extraction of crack opening for durability Gilles Pijaudier-Cabot, Monlocal damage based failure

Carbon Nanotube Reinforced Concrete Suru Shah, Some Properties of Highly Dispersed

Miguel Angel Toledo, Rockfill dam safety in overtopping Kaspar J. Willam, Title to be announced

SESSION 2 14:30

> rnucp 13:30

February, 25th, 2009

Welcome Address

SESSION I

An industrial perspective.

Instituto de Ciencias de la Construcción Eduardo Torroja, Spain o.I. Rio

Instituto de Ciencias de la Construcción Eduardo Torroja, Spain

Univ. Politécnica de Madrid (UPM), Spain

Univ. Politècnica de Catalunya (UPC), Spain

V. Sanchez-Galvez, (co-chairman),

Organizing Committee