

# Analysis and Mitigation of Risks in Infrastructures INFRARISK-

4<sup>th</sup> Summer School Workshop  
18<sup>th</sup> July 2018

## Program

9.00 Opening Session

Prof. António Heleno Cardoso  
Head of DECivil, IST

Prof. Rita Bento

Director of the Doctoral Programme INFRARISK-

Dr. Desmond Hartford

Member of the Evaluation Committee

Dr. Sébastien Proust

Member of the Evaluation Committee

9:20 Inviting Lecture

Chairpersons: Prof. Rita Bento, Dr. António A. Correia

The Global Rapid post-disaster Damage Estimation (GRADE)

Approach: Infrastructure and Sectoral Loss Estimates in a fast-paced world

Dr. James Daniell (Invited Speaker)

9.40 Research Project Presentations – Earthquake Engineering

Chairpersons: Prof. Rita Bento, Dr. António A. Correia

Evaluation of the angle of seismic incidence effect on the collapse risk of RC buildings

Despoina Skoulidou (4<sup>th</sup> year)

Supervision: Xavier Romão (FEUP)

Experimental Tests & Numerical Modeling of Cross-Laminated Timber Diaphragms

Leonardo Rodrigues (4<sup>th</sup> year)

Supervision: Jorge Branco (U Minho), Luís Neves (U Nottingham)

Seismic risk assessment of "Placa" buildings. Cost-effectiveness analysis of techniques for risk mitigation

Vasco Bernardo (1<sup>st</sup> year)

Supervision: Paulo Candéias (LNEC), Aníbal Costa (U Aveiro)

Mitigating earthquake vulnerability of mixed URM-RC buildings at the urban scale

Gonçalo Lopes (1<sup>st</sup> year)

Supervision: Romeu Vicente (U Minho), Miguel Azenha (U Minho, Tiago Ferreira (U Minho)

Development of BRD\_AL Prototype: Development of an aluminium alloy hysteretic damping system for seismic retrofitting of pre-coded reinforced concrete buildings

Ricardo Ferreira (1<sup>st</sup> year)

Supervision: Jorge Proença (IST), António Gago (IST)

Seismic Loss Estimation and Strengthening of an old RC building in Lisbon

Claudia Caruso (3<sup>rd</sup> year)

Supervision: Rita Bento (IST), Miguel Castro (FEUP)

11:10 Coffee break

11:30 Research Project Presentations – Earthquake Engineering

Chairpersons: Prof. Romeu Vicente, Prof. Xavier Romão

Optimization methodology for the design of reinforced concrete bridge infrastructures based on evolutionary algorithms

Vítor Camacho (3<sup>rd</sup> year)

Supervision: Mário Lopes (IST), Carlos Sousa Oliveira (IST)

Seismic risk of PreCode RC buildings retrofitted with Jacketing

Sanam Moghimi (3<sup>rd</sup> year)

Supervision: Alexandra Carvalho (LNEC), Paulo B. Lourenço (U Minho)

Development and validation of an experimental platform for hybrid simulation and uncertainty quantification

Gidewon Tekeste (3<sup>rd</sup> year)

Supervision: António A. Correia (LNEC), Aníbal G. Costa (U Aveiro))

Economic prospects of rehabilitation of UCH assets in Portugal: repair cost functions and cost-benefit analysis

Rui Maio (3<sup>rd</sup> year)

Supervision: Romeu Vicente (U Aveiro), Sergio Lagomarsino (U Genova), Tiago Ferreira (U Minho)

Investigations on the seismic behaviour of URM buildings with timber floors: research methodology and introductory results

Maria Pia Ciocci (2<sup>nd</sup> year)

Supervision: Paulo B. Lourenço (U Minho), Rui Marques (U Minho)

13.00 Lunch break

14:30 Keynote Lecture

Chairpersons: Prof. Carlos Sousa Oliveira, Prof. Paulo Lourenço

The hydraulic modelling of extreme flood events

Dr. Sébastien Proust (Invited Speaker)

15:15

Research Project Presentations – Hydrological Engineering

Chairpersons: Prof. Carlos Sousa Oliveira, Prof. Humberto Varum

CERA: GIS-based assessment on coastal erosion risk

Pedro Narra (4<sup>th</sup> year)

Supervision: Carlos Coelho (U Aveiro), Francisco Eduardo da Ponte Sancho (LNEC)

The Joy of Reliable Scour Protections - a PhD survival guide

Tiago Ferradosa (4<sup>th</sup> year)

Supervision: Francisco Taveira Pinto (FEUP), Luciana Neves (FEUP), Teresa Reis (LNEC)

Sensitivity Analysis and Probability Density of Bed Morphodynamics

Bruno Oliveira (3<sup>rd</sup> year)

Supervision: Rodrigo Maia (FEUP), Francesco Ballio (Politecnico di Milano)

Risk-Based Analysis of Bridge Scour Prediction with Live Bed Conditions - 2<sup>nd</sup> year

Ana Margarida Bento (2<sup>nd</sup> year)

Supervision: Teresa Viseu (LNEC), João Pêgo (FEUP), Lúcia Couto (LNEC)

16:15

Coffee break

16:30

Research Project Presentations – Infrastructures & Geotechnics

Chairpersons: Prof. Paulo Lourenço, Prof. Humberto Varum

Experimental investigation and numerical modelling of embankment failure by overtopping

Teresa Alvarez (2<sup>nd</sup> year)

Supervision: Rui Ferreira (IST), Teresa Viseu (LNEC)

Multi-hazard assessment for the safety management of embankment dams

Gonçalo Faustino (1<sup>st</sup> year)

Supervision: Laura Caldeira (LNEC), João Bilé Serra (LNEC), Teresa Bodas Freitas (IST)

Risk analysis of bridges using a new reliability-based robustness assessment methodology

Hugo Guimarães (4<sup>th</sup> year)

Supervision: José Campos e Matos (U Minho), Dan Frangopol (U Lehigh), António Abel Henriques (FEUP)

Risk management applied to cultural heritage buildings.

Georgios Karanikoloudis (3<sup>rd</sup> year)

Supervision: Paulo B. Lourenço (U Minho), João Bilé Serra (LNEC)

Dynamic Structural Health Monitoring of an Overhead Power Line using Interferometric Radar

Fábio Paiva (2<sup>nd</sup> year)

Supervision: Luís Guerreiro (IST), Rui Carneiro de Barros (FEUP)

17:45

Discussion: Board of Studies and Researchers/Scholars

18:15

Closing Session

Prof. Carlos Sousa Oliveira

Members of the INFRARISK-, Board of Studies

Dr. Desmond Hartford

Principal Engineering Scientist, BC Hydro, Vancouver, Canada

Dr. Sébastien Proust

Member of the Evaluation Committee