

Analysis and Mitigation of Risks in Infrastructures INFRARISK-

7th Summer School Workshop

National Laboratory for Civil Engineering (LNEC), 17th September 2021

Location: Congress Centre, Manuel Rocha Building

Programme

- 9:30 **Opening Session**
Carlos Pina
President of LNEC
Laura Caldeira
Head of the Department of Geotechnics of LNEC
Rita Bento
Director of the Doctoral Programme INFRARISK-
Atilla Ansal
Desmond Hartford
Carlos Rebelo
Members of the Evaluation Committee
- 9:50 **Keynote Lecture**
Chairpersons: Rita Bento, Alfredo Campos Costa
Seismic risk mitigation in steel moment-frame construction
Prof. Carlos Rebelo (U Coimbra)
Invited Speaker
- 10:40 **Research Project Presentations – Hydrology, Infrastructures & Geotechnics**
Chairpersons: Humberto Varum, António A. Correia
Experimental investigation of embankment failure by overtopping
Teresa Alvarez
Supervision: Rui Ferreira (IST), Teresa Viseu (LNEC)
Risk analysis of transmission lines systems to natural hazards with emphasis on earthquakes and extreme winds
Fábio Paiva
Supervision: Luís Guerreiro (IST), Rui Carneiro Barros (FEUP)
- 11:20 **Coffee break**
- 11:40 **Research Project Presentations – Infrastructures & Geotechnics, Earthquake Engineering**
Chairpersons: Xavier Romão, Paulo Candeias
Field monitoring and experimental investigations of vibrations and fatigue loading in cultural heritage buildings, induced by underground structures
Georgios Karanikoloudis
Supervision: Paulo B. Lourenço (U Minho), João Bilé Serra (LNEC)
Development of multi-hazard risk indicators for immovable cultural heritage assets
Luís Gerardo Flores Salazar
Supervision: Xavier Romão (FEUP), Rui Figueiredo (IUSS Pavia)
Increasing resilience and robustness of critical infrastructures to hazards using artificial intelligence and structural monitoring
Fabiana Navia Miranda
Supervision: João Santos (LNEC), Xavier Romão (FEUP)
Effect of earthquake risk on the real estate market – An application to Lisbon
João Fragoso Januário
Supervision: Carlos Oliv. Cruz (IST), Humb. Varum (FEUP), Vítor Sousa (IST)
- 13:00 **Lunch break (including visit to LNEC's shaking table facility)**
- 14:30 **Research Project Presentations – Earthquake Engineering**
Chairpersons: Paulo Lourenço, José Manuel Catarino
Exploring cost-benefit analysis for earthquake risk reduction
Holger Lovon Quispe
Supervision: Vítor Silva (U Aveiro), Tiago Ferreira (U Minho) Romeu Vicente (U Aveiro)
- 16:10 **Coffee break**
- 16:30 **Research Project Presentations – Earthquake Engineering**
Chairpersons: Alexandra Carvalho, João Santos
BRD_AI prototype – Development of aluminium alloy hysteretic system: System configuration and analysis
Ricardo Ferreira
Supervision: Jorge Proença (IST), António Gago (IST)
Real-time hybrid simulation including a shaking table – Development and application to soil-structure interaction
Gidewon Tekeste
Supervision: António A. Correia (LNEC), Aníbal G. Costa (U Aveiro)
Optimization of the seismic design of reinforced concrete bridges using evolutionary algorithms
Vítor Camacho
Supervision: Mário Lopes (IST), Carlos Sousa Oliveira (IST)
Uncertainty in performance-based analysis of RC buildings due to variability in the ground motion group size and direction
Despoina Skoulidou
Supervision: Xavier Romão (FEUP)
- 17:50 **Discussion: Board of Studies and Researchers/Scholars**
- 18:20 **Closing Session**
Carlos Sousa Oliveira
Laura Caldeira
Members of the INFRARISK-, Board of Studies

Atilla Ansal
Desmond Hartford
Carlos Rebelo
Members of the INFRARISK-, Evaluation Committee
- Towards an integrated vulnerability-based approach for evaluating, managing and mitigating earthquake risk in urban areas
Rafael Ramirez Eudave
Supervision: Tiago Ferreira (U Minho), António Formisano (U Naples)

A BIM-based methodology for the seismic performance assessment of existing URM-RC buildings: Framework for expeditious modelling and analysis
Gonçalo Lopes
Supervision: Romeu Vicente (U Aveiro), Miguel Azenha (U Minho), Tiago Ferreira (U Minho)

Seismic safety and fragility analysis of pre-code masonry buildings
Vasco Bernardo
Supervision: Paulo Candeias (LNEC), Aníbal Costa (U Aveiro)

Investigations into the behaviour of injection anchors in stone masonry
Maria Pia Ciocci
Supervision: Paulo B. Lourenço (U Minho), Rui Marques (U Minho)

