



European Safety, Reliability and Data Association



*Clermont-Ferrand, France*

*October 20<sup>th</sup> – 21<sup>st</sup>, 2016*

51<sup>st</sup> ESReDA Seminar on

## **Maintenance and Life Cycle Assessment of Structures and Industrial Systems**



The Life Cycle Analysis of structures and infrastructures is a challenging topic, where reliability, durability, robustness and resilience have mandatory roles, in addition to economic and political considerations. The life cycle involves all events and operations occurring during the structural lifetime, such as design, construction, testing, use, degradation, inspection, monitoring, maintenance, repair, failure, and recycling. The life cycle management implies not only optimal design of structures and systems, but mainly the degradation handling through monitoring, inspections and maintenance interventions. The random environment and operating conditions that structure can meet during its lifetime make the deterministic predictive models insufficient to fit the safety and reliability requirements. Therefore, the life cycle management should take into account the uncertainties and variability all over the life span and for the whole system, including electronics associated to mechanics or hydraulics. There are therefore real needs to balance conflicting requirements, such as cost, performance, safety, reliability, etc., taking into account non-technical issues such as organisational or financial parameters related to design, use and operation. The above aspects are targeted by the ESReDA project group ROLCCOST: “*Reliability-based Life Cycle Cost Optimization of Structures and Infrastructures*”.

The aim of the 51<sup>st</sup> ESReDA seminar is to bring together scientists, engineers and decision makers in the field of system safety of complex engineering systems and risk management, in order to present and discuss innovative methodologies and practical applications related to system reliability and life cycle: assessment, testing, analysis, design, monitoring, maintenance and optimization. Scientific methodologies, theoretical issues and practical case studies are expected to cover all the range from academic to industrial applications, including electro-mechanical and civil engineering.

A selection from seminar papers will be published in the book edited by ESReDA on *Reliability-based Life Cycle Cost Optimization of Structures and Infrastructures*.

Topics include (but are not limited to):

- Reliability-based design and optimization
- Robustness quantification of complex systems
- Life-cycle assessment and optimization
- Structural and mechanical reliability, including electro-mechanical systems
- Probabilistic degradation models
- Statistical methods in reliability
- Asset management
- Accelerated life testing
- Structural health monitoring
- Risk assessment and decision theory
- Inspection, Maintenance and Repair policy
- Computation procedures in analysis and optimization
- Failure consequences on human lives, activities and environmental damage
- Organisational and societal modelling
- Industrial case studies in mechanical and civil engineering.

## **SEMINAR ORGANISATION**

**The seminar is held by ESReDA**

**Chairman of the seminar**

Luis Ferreria, (ESReDA President, University of Porto, Portugal)

**Technical Program Committee**

Alaa Chateaneuf	(Blaise Pascal University, France), <i>Chairman</i>
Abdelkhalak El Hami	(INSA de Rouen, France)
André Beck	(University Sao Paulo, Brazil)
André Lannoy	(IMdR, France)
Franck Schoefs	(Nantes University, France)
Fabrice Guérin	(Angers University, France)
Joan Ramon Casas	(Technical University of Catalonia, Barcelona, Spain)
Dimos Charmpis	(University of Cyprus, Cyprus)
John Andrews	(University of Nottingham, United-Kingdom)
Mauricio Sanchez-Silva	(University Los Andes, Colombia)
Micaela Demichela	(Politecnico di Torino, Italy)
Milan Holicky	(Czech Technical University, Czech Republic)
Mohamed Eid	(CEA, France)
Yiannis Tsompanakis	(Technical University of Crete, Greece)

## ORGANISING COMMITTEE

Alaa Chateauf (Blaise Pascal University, France)  
Franck Schoefs (Nantes University, France)  
André Orcési (IFSTTAR, France)  
Laurent Bouillaut (IFSTTAR, France)  
Pierre Beaurepaire (Sigma-Clermont, France)

## LOCAL CONTACT:

For practical local information, please, contact Pr. Alaa Chateauf at:  
[alaa.chateauf@univ-bpclermont.fr](mailto:alaa.chateauf@univ-bpclermont.fr)

## RELEVANT DATES

Deadline for abstracts: **June 30<sup>th</sup>, 2016**  
Notification of authors: **July 10<sup>th</sup>, 2016**  
Submission of full papers: **September 30<sup>th</sup>, 2016**  
Date of Seminar: **October 20<sup>th</sup> – 21<sup>st</sup>, 2016**

## ABSTRACT SUBMISSION

Abstracts of 400 words, according to the template provided herein, addressing the paper objectives, methodology and findings.

To be emailed to: [alaa.chateauf@univ-bpclermont.fr](mailto:alaa.chateauf@univ-bpclermont.fr)

Guidance for authors can be downloaded from the ESReDA website: <http://www.esreda.org/>

## REGISTRATION AND SEMINAR FEES

Registration will be accepted until September 30<sup>th</sup>, 2016. A registration form and information package for the venue can be downloaded from the ESReDA website.

- The registration fees are **300 €**, to be paid by bank transfer to ESReDA\*
- One speaker per accepted paper is **free** of seminar fees.
- ESReDA members participating fees are **taken in charge** by the Seminar.

\* Holder: ESReDA – “51<sup>st</sup> Seminar”

Bank: BNP Paribas Fortis Bank, Boulevard Jamar 1 D, 1060 Bruxelles, Belgique

IBAN: BE69 0012 3728 1678

BIC: GEBABEBB36A

## ABOUT EUROPEAN SAFETY, RELIABILITY & DATA ASSOCIATION

European Safety, Reliability & Data Association (ESReDA) is a European Association established in 1992 to promote research, application and training in Reliability, Availability, Maintainability and Safety (RAMS). The Association provides a forum for the exchange of information, data and current research in Safety and Reliability.

ESReDA membership is open to organizations, privates or governmental institutes, industry researchers and consultants, who are active in the field of Safety and Reliability. Membership fees are currently 1000 € for organizations and 500 € for universities and individual members. Special sponsoring or associate membership is also available.



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**Maintenance and Life Cycle Assessment of**  
**Structures and Industrial Systems**

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**Title of the abstract**

**A. Author<sup>1</sup>, B. Author<sup>2</sup>**

<sup>1</sup>Affiliation, address, country

<sup>2</sup>Affiliation, address, country

Please write here your abstract, which should not exceed 400 words, in addition to tables, figures and references.

The abstract should give a clear idea about the work, the methodology and the main results.

The following items should be addressed:

- the objectives of the paper,
- the relevance and novelty of the proposed work,
- a short description of the method,
- the main results and findings.



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**Registration Sheet**

Title ..... : ..... [Ing., Prof., Dr., ...]  
Name, 1<sup>st</sup> name : ..... [Mr., Mrs, Miss.]  
Affiliation ... : .....  
Address (1) . : .....  
Address (2) . : .....  
City/State .... : .....  
Zip ..... : .....  
Country ..... : .....  
Phone/Mobile : .....  
Fax ..... : .....  
E-mail ..... : .....

- I am a speaker. (one speaker/paper is exempted of fees)
- I am an ESReDA member. (maximum 3 participants/ESReDA member organisation are exempted of fees)
- I am neither a speaker nor an ESReDA member. Fees are 300€ to be paid by bank transfer to ESReDA Account (BNP Fortis Bank, Belgium, IBAN: BE69 0012 3728 1678, BIC: GEBABEBB36A, reference: 46<sup>th</sup> ESReDA Seminar). Only bank transfer payment mode is accepted.
- I am accompanied. (Additional 35€ per accompanying person for the Gala Dinner is asked for.)

You may download the announcement and the registration form and practical information from:

<http://www.esreda.org/>

Please mail your reply to: Pr. Alaa Chateauneuf ([alaa.chateauneuf@univ-bpclermont.fr](mailto:alaa.chateauneuf@univ-bpclermont.fr))