



## New Members

### In 2018

ESReDA warmly welcomes both the University of Nottingham (UK) and the University of Salento (Italy), who joined us as ESReDA Effective Members in 2018.

## Previous ESReDA SEMINARS

### The 54<sup>th</sup> ESReDA Seminar



Franck Schoefs  
*Université de Nantes,  
France*

### 54<sup>th</sup> ESReDA Seminar on Risk, Reliability and Safety of Energy Systems in Coastal and Marine Environments

25-26 April 2018, Nantes, France

The 54<sup>th</sup> ESReDA Seminar will take place in Nantes, France, 25-26 April 2018. The seminar is organized by ESReDA PG on [Reliability of Wind Turbines](#) and hosted by [Université de Nantes](#).

The programme proposes around 30 papers which cover five topics: "Risk at sea: key issues, perception and evaluation", "Marine renewable energy structure and systems reliability", "Reducing the risks and levelized cost of energy - increase safety", "Stochastic degradation processes of marine structures" and "Non-destructive testing, monitoring and diagnosis of marine renewable energy materials, structures and devices". 60 participants from 11 EU countries (Canada, Denmark, France, Germany, Greece, Lithuania, Norway, Poland, Portugal, Romania, Spain, Sweden and United Kingdom) contributed through their presentations, discussions and expertise in establishing the state-of-the-art in the field.

The technical programme includes keynote lectures:

- "Risk, Reliability and Safety of Energy Systems in Coastal and Marine Environments", *JD. Sorensen* (Aalborg University);
- "Presentation of MRE research in Pays de la Loire: West Atlantic Marine Energy Community", *P. Baclet* (CEO of WEAMEC, France);
- "Next H2020 calls in MRE", *F. Kermagoret* (University Bretagne Loire).

**Full programme of the 54<sup>th</sup> ESReDA Seminar** is already available at [ESReDA website](#). Few photos of the seminar were captured and now being displayed in the [Gallery](#) section of the website.

The **final proceedings of the 54<sup>th</sup> ESReDA Seminar** will soon be available for public consultation and free downloading in compliance with ESReDA politics of free dissemination of scientific and technical knowledge.



Alaa Chateaneuf  
*CIDECO, France*

## Forthcoming ESReDA SEMINARS

### The 55<sup>th</sup> ESReDA Seminar

### 55<sup>th</sup> ESReDA Seminar on Accident Investigation and Learning to Improve Safety Management in Complex System: Remaining Challenges

9-10 October 2018, Bucharest, Romania

The 55<sup>th</sup> ESReDA Seminar will take place in Bucharest, Romania, 9-10 October 2018, hosted by the [Romanian Railway Investigating Agency \(AGIFER\)](#).

The 55<sup>th</sup> ESReDA Seminar has attracted a large number of potential contributors and high quality abstracts have been submitted for review; each abstract has been carefully reviewed by the Technical Program Committee members. As a result of the review process, we will now have the opportunity to listen to 22 presentations concentrating on the seminar topic. In addition, two invited lecturers are foreseen at the Seminar:

- Dan Serbanescu, Romanian Academy, ROMANIA
- Teodor Gradinariu, Senior Technical Advisor, International Union of Railways, Paris, FRANCE

**Preliminary Programme and Registration** are already available at [ESReDA website](#).

## The 56<sup>th</sup> ESReDA Seminar



Dmitry Efrosinin  
JKU Linz, Austria



Mohamed Eid  
CEA, France

## The 56<sup>th</sup> ESReDA Seminar on Critical Services continuity, Resilience and Security 23-24 May 2019, Linz, Austria

Critical services continuity is a major societal security issue in modern society. They vital for the society and supplied thanks to a large variety of Critical Infrastructures (CIs). Some services disruptions may endanger the security of the citizen, the safety of the strategic assets and even the governance stability.

The CIs are more and more connected thanks to the information technology (IT) and supply services in every aspect in man's daily-life. The continuous progress in the IT fields pushes modern systems and infrastructures to be more and more: intelligent, distributed and proactive. That increases not only the operational complexity of the CI's but their vulnerability. The more complex a system is, the more vulnerable it will be and the more numerous the threats that can impact on it. The loss of operability of critical infrastructures may result in major disruption in some vital services supply leading to severe crises.

To counterbalance the increasing vulnerability of the systems, engineers, designers and operators should enhance the system preparedness and resilience facing different threats. That requires a supported continuous effort in many corresponding fields. One of them is "Modelling, Simulation & Analysis (SM&A)" of the CI in order to enhance the CIs' preparedness & resilience.

ESReDA as one of the most active EU networks in the field has initiated a project group (CI-PR/MS&A-Data) on the "Critical Infrastructure/Modelling, Simulation and Analysis - Data". The main focus of the project group is to report on the state of progress in MS&A of the CIs preparedness & resilience with a specific focus on the corresponding data availability and relevance.

In order to report on the most recent developments in the field of the CIs preparedness & resilience MS&A and the availability of the relevant data, ESReDA will hold its 56<sup>th</sup> Seminar on the following thematic: "Critical Services continuity, Resilience and Security".

The 56<sup>th</sup> ESReDA seminar will be held on 23-24 May 2019, hosted by [Johannes Kepler University \(Institute for Stochastics and Linz Center of Mechatronics\)](#) Linz, Austria. The **Call for Papers** is online at [ESReDA website](#). **Deadline for draft papers** is the **30<sup>th</sup> November 2018**.



## New ESReDA PROJECT GROUPS

ESReDA have launched three new Project Groups (PG). Join new PG, contact leaders of PGs.

- PG on Resilience Engineering and Modelling of Networked Infrastructure, led by the University of Nottingham (UK);
- PG on Creating Safe and Resilient Supply Chain, led by Wrocław University of Technology (Poland)
- PG on Big Data, Reliability, Risk and Safety Analysis, led by University of Porto (Portugal).

All Members are invited to join new PGs (please contact ESReDA [General Secretary](#) for the purpose).

## Forthcoming Conferences & Seminars



Inga Žutautaitė  
Lithuanian Energy Institute,  
Lithuania



### The 13<sup>th</sup> International Conference on Critical Information Infrastructures Security (CRITIS 2018)

24-26 September, 2018, Kaunas, Lithuania

In 2018, the International Conference on Critical Information Infrastructures Security faces its 13<sup>th</sup> anniversary. CRITIS 2018 continues the tradition of presenting innovative research and exploring new challenges in the fields of critical (information) infrastructures protection (C(I)IP), resilience, and of fostering the dialogue with all stakeholders. CRITIS 2018 topics and the call for papers at [CRITIS 2018 website](#).

CRITIS 2018 aims at bringing together researchers, professionals from academia, critical (information) infrastructure operators, industry, defence sector, and governmental organisations working in the field of the security of critical (information) infrastructures.



Ričardas Krikštolaitis  
Vytautas Magnus  
University, Lithuania

As in previous years, invited speakers will complement a programme of original research contribution. CRITIS 2018 is very proud to announce the [keynotes](#): Dr. Stefan Lüders (Head of Computer Security at CERN, Switzerland) "*Bridging the gap between ICS and corporate IT security: Finding common culture and views*" (25 September, 2018), Dr Hayretin Bahşi (Center for Digital Forensics and Cyber Security, Tallinn University of Technology) "*Comparison of Nordic and Continental Europe Grids from the Cyber Resilience Perspective*".

Besides, this CRITIS conference has a special focus on current and future **energy infrastructures** within a **special session** "[Energy infrastructure operators and stakeholders: key challenges and solution directions](#)", chaired by Marcelo Masera (EC JRC in Petten, the Netherlands). Invited speakers are expected to be from (the list is not complete): Litgrid (electricity TSO, Lithuania), PSE S.A. (electricity TSO, Poland), Enel (electricity and gas DSO, Italy), BKW Group (Switzerland), EC DG HOME (Belgium), NATO ENSEC (Lithuania), World Energy Council (Estonia), Ministry of Energy of the Republic of Lithuania.

Project leaders who intend to disseminate their activities are encouraged to participate in a special [Projects Dissemination Session](#). Similarly, a session will be devoted to Industry working in the field of the security of critical (information) infrastructures. CRITIS 2018 encourages Industry to share their innovative key achievements in a special [Industry session](#).

Visit [CRITIS 2018 website](#) for **Preliminary Programme** and **Registration**.

## Other Conferences and Seminars

**The  $\lambda\mu$  21<sup>st</sup> Risk Management, System Dependability & Safety Symposium**  
16-18 October 2018, Reims, France. Call for papers at the [IMdR website](#).

## Other News



André Lannoy  
ESReDA Honorary  
Member,  
IMdR, France

**We read >> Isabelle Sochet (editor) et al (2018), Blast Effects – Physical Properties of Shock Waves, January 2018, 197 pages, Springer**

Risk is a measure of the value of the consequences of events affected by their probabilities. Risk is therefore a two-dimensional variable: gravity and probability. This variable must however be evaluated during the risk assessment phase (ISO 31000). Isabelle Sochet, editor and her co-authors offer us this remarkable and useful work of synthesis of the experiments, carried out on a small scale and on a large scale, on the phenomenon of detonation which is characterized by the propagation of a destructive shock wave in the environment. This book may allow a risk analyst to evaluate a priori (in the design phase) the consequences of a possible explosion, and to analyze and understand a posteriori a possible accident after the fact.

The explosion is indeed an event feared by industrial process industries and transport, and their authorities. Their concerns mainly concern:

- the handling of conventional solid explosives or nuclear explosives,
- the explosion of a gas cloud following an accident in a process industry; however, it should be noted that the detonation of a gaseous cloud is rare, the cloud generally deflagrate, but the impact of such a gaseous explosion that is supposed to detonate can be considered as an enhancement of the potential effects of the gaseous explosion; nevertheless, in a semi-confined or very obstructed environment, the phenomenon of transition deflagration - detonation can occur in a part of the cloud,
- the bursting of a pressure vessel, either by adiabatic expansion or by a bleve phenomenon,
- sizing structures, in their integrity and reliability.

Chapter 1 is a chapter of generalities. He insists on the importance of overpressure (which destroys fragile materials) and the positive impulse (which destroys ductile materials) but also the period of depression (or negative phase) by its suction property.

Chapter 2 describes the Rankine-Hugoniot equations for calculating the properties of a shock wave.

Chapter 3 presents Friedlander's equations for calculating a pressure law as a function of time. Appendix A shows the regression curves of the effects of detonation (positive pressure, positive phase time and positive impulse) as a function of reduced distance, for hemispherical clouds. This Appendix A therefore provides the boundary conditions of a mechanics- probabilistic design code.

Chapters 6 (Figures 6.12, 6.14, 6.15) and 7 (Figures 7.4, 7.5, 7.6) are the working tools of the risk analyst to estimate the severity of a detonation and to design an installation, respectively for gaseous explosions and for conventional explosives. Note that, curiously, for the latter, the measures seem less numerous in the far field?

Chapter 8 defines the TNT equivalent which represents the mass of TNT that would have caused an

explosion of the same energy, at the same distance, as the explosion considered. The author recommends a value of the TNT detonation enthalpy, defines the explosion efficiency and presents several applications on gaseous clouds and solid explosives. Paragraph 8.4 is very important, it evokes the limits of the equivalent TNT, often used and accepted by the authorities, whose main limitation is certainly that we assimilate a real gas cloud, often in the form of a pancake, which usually deflagrates, to an explosion of TNT, punctual, which always detonates.

This book is a valuable tool, clearly written and easy to use, for any user: risk manager, project manager, design office, risk analyst (both in design and operation), feedback analyst expert, teacher, researcher and doctoral student

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ESReDA Members, you are kindly invited to contribute to the ESReDA newsletter sharing news, announcement of events, your experiences, ideas, etc. You are supposed to elaborate proposals to create new Project Groups, host ESReDA Seminars or initiate collaborative activities.

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**ESReDA: European Safety, Reliability & Data Association**

Association internationale sans but lucratif, régie par la loi Belge du 27 Juin 1921-Titre III (Registration N°: 0452522618 - Siret:E00005802)

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