

63rd ESReDA Seminar

Resilience assessment: Methodological challenges and applications to critical infrastructures

25-26 October 2023, JRC, Ispra – Italy



© European Commission Joint Research Centre

1st Call for papers

Scope of the Seminar

Research in resilience of infrastructure systems has been constantly increasing during the last decade and is expected to grow further. Although the term resilience was used in material science already in 19th century, the current meaning of system resilience originates from research in ecology back in 70s. Self-repairable computer systems, being developed also in the same decade for space and defence applications, could be considered as examples of resilience applications in engineering. Resilience applications in technical systems domain have evolved most significantly during the last two decades and the term resilience has already been transferred to the policy domain, as the Directive on the Resilience of Critical Entities (CER Directive) went into force in January 2023 and replaced the Critical Infrastructure Directive, published in 2008.

Two fundamental points in resilience domain to be addressed by the Seminar are:

- The methodological development of resilience assessment from a conceptual framework to modelling approaches.
- The metrics for resilience assessment and development of quantitative tools for decision making.

The 63rd ESReDA seminar will be a forum for exploring these points and other related questions. We aim to discuss theories, concepts, and experiences of resilience assessment methodologies and applications. Authors are invited to present their proposals and discuss successes and/or failures and to identify future needs in resilience research. We want to encourage new ideas, scientific papers, conceptual papers, case studies and cross-sectoral research on this topic with examples and applications of infrastructures exposed to both technological and natural threats, hazards. This seminar will bring together researchers, practitioners and decision-makers.

Target groups and domains of application (examples)

Papers for the seminar are welcome from various stakeholders (industry, academia, R&D consultancy organisations) and could address different infrastructure sectors:

- *Energy sector (electricity, gas, hydrogen)*
- *Transport sector (rail, road, air and maritime)*
- *Other Critical infrastructures, networks and entities*
- *Urban development*
- *Public sector and government*

This seminar is aimed at addressing resilience due to different hazards and threats, such as:

- Disruptions of infrastructures due to aging or random failures,
- Natural disasters,
- Intentional attacks or man-made hazards,
- Emerging threats (e.g. hybrid).

Interdependencies of infrastructures and cascading effects are also among the topics of the Seminar. It integrates as well technical, human, organizational, social, financial dimensions. Other topics may be included if they fit well within the topic on resilience assessment.

ESReDA project group on Resilience Assessment of Critical Infrastructure

ESReDA is currently considering a new project group (PG) on Resilience Assessment of Critical Infrastructure, pending approval by the General Assembly of ESReDA during the meeting in April 2023. This project group (PG) continues the work done in the previous ESReDA project group “Resilience Engineering and Modelling of Networked Infrastructure” during 2018-2021 years.

The aim of the PG is to develop and propose an integrated approach for quantitative resilience assessment including management decisions (comparison of solutions for investment, maintenance) in a context of uncertain scenarios (global change and emerging threats).

This Seminar will serve as a forum to discuss the work of the project group, exchange ideas and set a work plan for the next years. A dedicated project group meeting is planned on October 24, the day before the Seminar. The Seminar participants are welcome to join the meeting either as PG members or observers.

Seminar organisation

The Seminar is jointly organised by ESReDA and JRC.

Location

European Commission Joint Research Centre (JRC)
Via Enrico Fermi 2749, I-21027 Ispra (VA), ITALY

Chairwoman of the Seminar

Kristine VLAGSMA (European Commission, Joint Research Centre)

Technical Programme Committee (TPC)

John ANDREWS, University of Nottingham, UK
Florent ARRIGNON, MAD-Environment, France
Anne BARROS, CentraleSupélec, France

Julien BAROTH, University of Grenoble, France
Christophe BÉRENGUER, University of Grenoble, France
Marko ČEPIN, University of Ljubljana, Slovenia
Nicolas DECHY (IRSN, FRANCE)
Sebastien DELMOTTE, MAD-Environment, France
Mohamed EID, RiskLyse, France
Gianluca FULLI (JRC Directorate C – Energy, Mobility and Climate, Italy)
Antonio J. GUILLÉN, Ingeman, Spain
Saulius GUDŽIUS, Kaunas University of Technology, Lithuania
Rainer JUNGWIRTH (JRC Directorate E – Space, Security and Migration, Italy)
*Vytis KOPUSTINSKAS (JRC Directorate C – Energy, Mobility and Climate, Italy)
Elisabeth KRAUSMANN (JRC Directorate E – Space, Security and Migration, Italy)
Pierre-Etienne LABEAU, Université libre de Bruxelles, Belgium
André LANNOY, IMdR, France
Marcelo MASERA, Politecnico di Torino, Italy
Tomasz NOWAKOWSKI, Wroclaw University of Science and Technology, Poland
Rasa REMENYTĖ-PRESCOTT, University of Nottingham, UK
Sigitas RIMKEVIČIUS, Lithuanian Energy Institute
Giovanni SANSAVINI, ETH Zürich, Switzerland
John STOOP (Kindunos, The Netherlands)
Jean-Marc TACNET, University of Grenoble, France
Agnieszka TUBIS, Wroclaw University of Science and Technology, Poland
Bogdan VAMANU, 'Horia Hulubei' National Institute of Physics and Nuclear Engineering, Romania
Laila ZEMĪTE, Riga Technical University, Latvia

*Technical Programme Committee chairperson

Local Organising Committee:

Virginie PETITJEAN (JRC Directorate C – Energy, Mobility and Climate, Netherlands)
Isabel ASENSIO (JRC Directorate C – Energy, Mobility and Climate, Italy)
Hrvoje FORETIC (JRC Directorate C – Energy, Mobility and Climate, Netherlands)
Vytis KOPUSTINSKAS (JRC Directorate C – Energy, Mobility and Climate, Italy)

Relevant dates, abstracts and papers submission, preliminary schedule:

- Submission of abstracts: **1st of June, 2023**
- Notification to the authors: **20th of June, 2023**
- Submission of final papers or extended abstracts: **30th of September, 2023**
- Deadline for registration: **4th October 2023**
- 24 October 2023: ESReDA internal meetings: Board of Directors meeting, project group meetings.
- Seminar: 25-26 October 2023

Procedure to submit an abstract, paper and to register

The abstracts, not exceeding 400 words, should address:

- Tentative title
- Principal author
- Objectives
- Relevance for the Seminar and Novelty
- Methods and findings.

The language of the seminar is English.

Authors wishing to present a paper at the Seminar are invited to [submit an abstract/paper online](#).

Extended abstracts are an alternative to full papers. An extended abstract should be at least one page in length, and it should include a list of most relevant references (5 or 6). Both extended abstracts and full papers will be published in the Seminar proceedings.

If there are any questions related to abstract/paper submission, authors could use functional e-mail of the Seminar: JRC-ESREDA63-Seminar@ec.europa.eu

The Seminar details and paper templates are available on [ESReDA website](#).

Registration and Seminar Fee

The registration is only through the JRC meetings management system at the following [link](#).

Registrations will be accepted until **4th of October, 2023**. Please note this deadline as entrance to the JRC meeting facility is only by permit. You will need your ID and travel schedule in order to register.

If you fall into the following two categories, the Seminar is free of charge:

- One speaker per accepted paper
- ESReDA member (maximum of 3 participants per member organization)

Otherwise, the Seminar fee is 300 EUR to be paid by bank transfer to ESReDA:

Holder: ESReDA
Bank: BNP Paribas Fortis Bank, Boulevard Jamar 1 D, 1060 Bruxelles, Belgium
IBAN: BE69 0012 3728 1678
BIC: GEBABEBB
Subject: Registration to the 63rd ESReDA Seminar

For any questions, please contact the [local organising committee](#).

Accommodation and travel

Ispra is located 35km north of Milano Malpensa (MXP) airport and the transfer to the JRC takes 30 minutes. JRC will provide transportation from the airport to the site/hotel upon your arrival and during the Seminar days. Transportation can be provided also from Milano Central or Varese train stations or Linate (LIN) airport (consider 1.5 hours transfer time from the JRC to Linate airport).

The transportation will be provided **only from the selected hotel** to the site. Further detailed information on the hotel will be provided soon.