



63rd ESReDA Seminar

Resilience assessment: Methodological challenges and applications to critical infrastructures

25-26 October 2023, JRC, Ispra – Italy



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2nd 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)

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Florent ARRIGNON, MAD-Environment, France
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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: **26 June, 2023 (NEW!)**
- Notification to the authors: **10 July, 2023 (NEW!)**
- 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 **(NEW!)**

Ispra is located 35km north of Milano Malpensa (MXP) airport and the transfer to the JRC takes ~30 minutes. Due to unexpected and unilateral contract changes, **JRC experiences temporal difficulties** to provide transportation from the airport to the site/hotel upon your arrival and departure. To ease the situation, we ask you to consider only flights to Milano Malpensa (MXP) and if possible during the day time (avoiding late evening and early morning flights). If that is unavoidable you might need to rent a car or use airport taxi service (consider that cost of a taxi ride MXP-JRC is ~100eur).

Please do not book any hotel at the moment, unless you will be able to be self-autonomous (e.g. rent a car). We are currently working to make the Seminar attendance as smooth as possible, we will keep you informed as soon as an agreement with a hotel is reached to host majority of the participants.