



# 5<sup>th</sup> NERIS Workshop

*"Key challenges in the preparedness, response and recovery phase of a nuclear or radiological emergency"*

3-5 April 2019, Roskilde, Denmark

---

Hosted by DTU-Nutech

**DTU Nutech**  
Center for Nuclear Technologies

## Programme

## Objectives of the Workshop

The NERIS Workshop 2019 will focus on “**Key challenges in the preparedness, response and recovery phase of a nuclear or radiological emergency**” as well as on common topics with international organisations and Radiation Protection Platforms.

This will be an opportunity to **discuss and exchange views** with NERIS Members, international organisations and European research communities on research developments and priorities for the European NERIS Platform.

## Venue

**The workshop takes place at DTU Risø Campus**

Niels Bohr Auditorium, building 112  
Frederiksborgvej 399  
DK - 4000 Roskilde  
Denmark



**Please be advised that accommodation in Roskilde is in high demand in April, do not wait to book rooms! You can also book accommodation in Copenhagen or Taastrup and travel to Roskilde.**

## 4 main topics

Plenary sessions will be organised on topics related to the following challenges:

- ▶ **Radiological impact assessment during all phases of nuclear and radiological events**
- ▶ **Countermeasures and countermeasure strategies in emergency & recovery, decision support & disaster informatics**
- ▶ **Setting-up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery**

In addition, a specific session will be held on:

- ▶ **Challenges in estimating the source term and operational radiological picture (on-site versus off-site)**

## Programme Committee

- ▶ **Kasper ANDERSSON** – DTU (*Denmark*)
- ▶ **Johan CAMPS** – SCK•CEN (*Belgium*)
- ▶ **Tatiana DURANOVA** – VUJE (*Slovakia*)
- ▶ **Deborah OUGHTON** –NMBU (*Norway*)
- ▶ **Marie-Claire CANTONE** – UMIL (*Italy*)
- ▶ **Wolfgang RASKOB** – KIT (*Germany*)
- ▶ **Catrinel TURCANU** – SCK•CEN (*Belgium*)
- ▶ **Eymeric LAFRANQUE** – CEPN (*France*)

## Programme

The NERIS workshop will last **3 days** during which part of the first morning will be devoted to the **10<sup>th</sup> General Assembly**. Then, the next two days will be dedicated to oral presentations dealing with the 4 topics of interest for this workshop (see above).

The **NERIS Young Scientist Award** ceremony will mark the end of the workshop. The candidates to this award are identified by a special icon (🏆) in the detailed program.

## Wednesday 3rd April 2019

8:30-9:00 NERIS General Assembly Registration

9:00-11:00 **NERIS General Assembly**

11:00-11:30 Coffee Break / Workshop registration

11:30-11:50 **OPENING CEREMONY**

Welcome & Introduction

*Kasper Andersson – DTU Nutech (Denmark)*

*Thierry Schneider – CEPN (France) - President of the NERIS Platform*

11:50-12:30

**Session A: Radiological impact assessment during all phases of nuclear and radiological events**

*Chairs: Kasper Andersson - DTU Nutech (Denmark) & Johan Camps - SCK•CEN (Belgium)*

The effect of terrain modeling on simulated dose rates

*Gunther Bijloos – SCK•CEN (Belgium) 🏆*

Radiological effects and assessment of a “dirty bomb” scenario on a microscale in urban areas

*Hartmut Walter – BfS (Germany)*

12:30-13:30

Lunch / registration

13:30-15:30

**Session A: Radiological impact assessment during all phases of nuclear and radiological events**

*Chairs: Kasper Andersson DTU Nutech (Denmark) & Johan Camps - SCK•CEN (Belgium)*

Novel stochastic and deterministic models for polydisperse flows resulting from a radiological dispersal Device

*Lucian Ivan – CNL (Canada)*

Uncertainty of atmospheric dispersion prediction

*Jens Havskov Sørensen – DMI (Denmark)*

Source term prediction in case of a severe nuclear accident

*Karine Chevalier-Jabet – IRSN (France)*

Atmospheric transport and dispersion modelling study of the I-131 detected in Jan/Feb 2017 in Europe

*Andy Delcloo (Pieter De Meutter) – SCK•CEN (Belgium)*

Improving European decision support reliability and robustness to manage scenarios involving contamination of inhabited areas

*Kasper Andersson – DTU (Denmark)*

Seasonality influence in the elaboration of risk maps associated to the transfer of radioactivity through the food chain.

*Cristina Trueba – CIEMAT (Spain)*

15:30-16:00

Coffee Break

## Wednesday 3rd April 2019

16:00-18:00

### Session A: Radiological impact assessment during all phases of nuclear and radiological events

*Chairs: Kasper Andersson DTU Nutech (Denmark) & Johan Camps - SCK•CEN (Belgium)*

Radiological impact assessment in preparedness and response phase for nuclear emergency management in Greece

*Dimitris Mitrakos — EEAE (Greece)*

Gene expression as a marker of effects of exposure at the late stage of mitigation of radiation accident

*Dimitry Bazyka — National Research Center for Radiation Medicine (Ukraine)*

Lessons learnt from the gamma-based monitoring stations of RARE (Radiological Alert network of Extremadura, SW Spain): development and real-time performance

*Antonio Baeza — LARUEX (Spain)*

Passive dosimetry measurements used in the aftermath of a radiological accident in the framework of "PREPAREDNESS" EMPIR project

*Giorgia Iurlaro — ENEA (Italy)*

Voluntary radiation measurement team to enhance the radiation measurement preparedness in Finland

*Maarit Muikku — STUK (Finland)*

Addressing emergency and recovery preparedness: on-going developments at NEA

*Olvido Guzmán - NEA*

18:00-19:30

WG Information Participation and Communication satellite meeting

## Thursday 4th April 2019

8:30-10:10

### Session C : Setting-up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery

Subtopic: Stakeholder involvement

*Chairs: Eduardo Gallego – UPM (Spain) & Pascal Croüail – CEPN (France)*

European scenario-based stakeholder discussion panels, to test their engagement in the decision making process during the transition phase of a nuclear emergency

*Montero, Milagros — CIEMAT (Spain)*

The local radiological emergency programs in Spain: the Valencia region program

*Ana Bueno — University of Valencia (Spain) 🏆*

Delphi study to support the involvement of stakeholders in the decision-making process during the transition phase of a nuclear emergency

*Sala Roser — CIEMAT (Spain)*

Stakeholders feedback on mobile Apps and devices for dose and health measurements after nuclear accident (SHAMISEN SINGS project)

*Liudmila Liutsko — ISGlobal (Spain)*

Formal and informal participation in emergency preparedness and response: a purposeful mapping exercise

*Catrinel Turcanu — SCK•CEN (Belgium)*

10:10-10:40

Coffee Break

## Thursday 4th April 2019

10:40-12:20

### **Session C : Setting-up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery**

Subtopic: EP&R

*Chairs: Marie-Claire Cantone – UMIL (Italy) & Veronica Smith - EPA Ireland*

Changes in nuclear and radiological threats and hazards from a Norwegian perspective  
*Øyvind Gjølme Selnæs – DSA (Norway)*

Ensuring radiation safety in slovenian-croatian cross-border region

*Branko Vodenik – Jožef Stefan Institute (Slovenia)*

Nuclear and radiological emergency preparedness in Spain: some keys for improvement

*Eduardo Gallego – UPM (Spain)*

Participation in a Conv-Ex-2c exercise: preparation, performance and outcomes as an accident state

*Veronica Smith – EPA (Ireland)*

The use of non-radiological resources to support nuclear and radiological emergency response.

*Robert Ryan – EPA (Ireland)*

12:20-13:20

Lunch

13:20-15:00

### **Session B: Countermeasures and countermeasure strategies in emergency & recovery, decision support & disaster informatics**

*Chairs: Thierry Schneider – CEPN (France) & Florian Gering – BfS (Germany)*

Local stakeholders confronted to mid- and long-term uncertainties in a post-nuclear accident situation: outputs from the TERRITORIES Workshop

*Pascal Croüail – CEPN (France)*

Involvement of French stakeholders in the decision-making process in the context of uncertainties - The European project CONFIDENCE - WP4

*Vanessa Durand – IRSN (France)*

Decision support diagrams for public protective actions during nuclear emergencies

*Jan Johansson – SSM (Sweden)*

The basis for the Swedish emergency preparedness and response plan for ESS

*Anna Maria Blixt Buhr – SSM (Sweden)*

Procedures for setting intervention regions at the end of the acute phase of a radiological accident

*Christophe Murith – FOPH (Switzerland)*

15:00-15:30

Poster presentation

15:30-16:00

Coffee Break

## Thursday 4th April 2019

16:00-17:40

### Session B: Countermeasures and countermeasure strategies in emergency & recovery, decision support & disaster informatics

*Chairs: Thierry Schneider – CEPN (France) & Florian Gering – BfS (Germany)*

Simulations of decontamination scenarios using the system dynamics approach

*Anna Selivanova – SURO (Czech Republic)*

Significant sources uncertainty in the ERMIN urban dose model

*Thomas Charnock – PHE (United Kingdom)*

Agent-based negotiation simulation

*Shan Bai – KIT (Germany)*

Preparedness for a “dirty bomb” attack: antidotes and screening capacities as complementary medical countermeasure resources

*Prof. Dr. Matthias Port – BIR (Germany)*

Management of contaminated goods in post-accident situation – Lessons learned from Fukushima

*Mélanie Maître – CEPN (France) 🏆*

19:30-22:00

Workshop dinner

## Friday 5th April 2019

8:30-10:10

### Session C : Setting-up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery

Subtopic : Social and psychological aspects

*Chairs: Catrinel Turcanu - SCK•CEN (Belgium) & Tatiana Duranova – VUJE (Slovakia)*

Identification of mental models of uncertainty management in emergency situations

*Nadja Zeleznik – EIMV (Slovenia)*

Uncertainties that decision makers, affected population and emergency responders may face during a nuclear emergency

*Perko Tanja – SCK•CEN (Belgium)*

Non-radiological impact of a nuclear emergency: focus on psychological and mental health

*Zhanat Carr – WHO*

Societal uncertainties in emergency preparedness and response: perception rather than fact

*Bieke Abelshausen – SCK•CEN (Belgium) 🏆*

RP Culture in the field of Emergency Preparedness and Response: First outcomes from the European Project ENGAGE

*Tatiana Duranova – VUJE (Slovakia)*

10:10-10:40

Coffee Break

## Friday 5th April 2019

10 :40-12:00

### **Session D: Challenges in estimating the source term and operational radiological picture (on-site versus off-site)**

*Chairs: Wolfgang Raskob – KIT (Germany) & Spyros Andronopoulos - NCSR D (Greece)*

Update on the IAEA IEC activities in EP&R

*Frederic Stephani- IAEA*

Analysis of the Fukushima source term: implications for source term estimation from radiological observations during emergencies

*Dr. Martin Sogalla — GRS (Germany)*

RASTEP - a versatile tool for decision support in nuclear emergency situations

*Anders Riber Marklund — Lloyd's Register Consulting*

Comparison of ensembles of atmospheric dispersion simulations: lessons learnt from the CONFIDENCE project about uncertainty quantification

*Irène Korsakissok — IRSN (France)*

11 :00-12:00

CONFIDENCE test on communication means

12:20-13:20

Lunch

13 :20-15:30

### **Session D: Challenges in estimating the source term and operational radiological picture (on-site versus off-site)**

*Chairs: Wolfgang Raskob – KIT (Germany) & Spyros Andronopoulos - NCSR DEMOKRITOS (Greece)*

Source term estimation with a model implemented in the JRODOS DSS

*Wolfgang Raskob — KIT (Germany)*

The advanced source inversion module of JRODOS

*Spyros Andronopoulos — NCSR D (Greece)*

Real-time use of inverse modeling techniques to assess the atmospheric accidental release of a nuclear power plant

*Olivier Saunier — IRSN (France)*

Collaborative web application to support source term assessment

*Tuomas Peltonen — STUK (Finland)*

Source term estimation of xenon releases from medical isotope production: a test case for near-range atmospheric dispersion modelling

*Johan Camps — SCK•CEN (Belgium)*

Identification of atmospheric contamination source in an urban area by approximate bayesian computation methodology

*Piotr Kopka (or Anna Wawrzynczak) — NCNR (Poland) 🏆*

15 :30-16:00

CLOSING WORDS

NERIS Young Scientist Award

# List of Posters

## Session A: Radiological impact assessment during all phases of nuclear and radiological events

Use of different meteorological data for near-range assessments during a nuclear emergency

*Johan Camps — SCK•CEN (Belgium)*

Large-scale measurements of internal contamination in case of a nuclear accident

*Martin Hjellström and Nikola Marković — University of Gothenburg (Sweden)*

Study on optimization for the continuous surveillance network of environmental radioactivity in Portugal

*Filipa Jerónimo — IST (Portugal)*

Efficiency of a drone measuring radioactivity for a point source and a homogenous surface contamination.

*Stef Geelen — SCK•CEN (Belgium)*

TRITIUM - a low level real-time monitor system for water quality surveillance

*José Díaz — University of Valencia (Spain)*

## Session B: Countermeasures and countermeasure strategies in emergency & recovery, decision support & disaster informatics

Linking Advanced Monitoring and Modeling in Nuclear Emergency Decision Linking Advanced Monitoring and Modeling in Nuclear Emergency Decision Support Systems

*Luke Lebel — CNL (Canada)*

Application of the RODOS system to determination of the restricted use area and emergency planning zones for the planned nuclear power plant in Poland

*Anna Wawrzynczak or Sławomir Potemski — NCNR (Poland)*

Optimization of the food chain and dose module for terrestrial pathways (FDMT) applied to Portugal

*Catarina Inácio — IST (Portugal)*

Aid on decision support for radiological emergencies based on ERMIN model

*David Ferreira — IST (Portugal)*



## Session C: setting-up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery

Stakeholder engagement in emergency preparedness and response: state of the art

*Bieke Abelshausen — SCK•CEN (Belgium)*

RAMESIS – support to Citizen Radiation Monitoring Network in the Czech Republic

*Petr Kuča — SURO (Czech Republic)*

Modification of the regulatory framework for radiological protection and nuclear safety in Portugal

*Marcia Farto — EPA (Portugal)*

How the EU strengthens CBRN response capacities outside the European Union: 2 examples from the Western Balkans and the Black Sea Region 2 examples from the Western Balkans and the Black Sea Region

*Vandersteen Katrijn — SCK•CEN (Belgium)*

EURDEP system as exercise bed for European nuclear exercises

*Miguel Ceballos — JRC-ISPRA*



## Target audience

The target audience for this workshop are **researchers and organisations involved or interested in emergency and recovery preparedness and management** from all levels and sectors.

## Working language

The working language of the workshop will be **English**.

## Registration and fees

Participation fees will be requested for the Workshop organisation and dinner:

- ▶ **200€ for NERIS supporting organisations**
- ▶ **250€ for NERIS members or other organisations**

*Participation fees include lunches, coffee breaks and the Workshop dinner.*

## Further information

For further information on the NERIS Workshop and the venue, feel free to contact the Organising Committee:

- ▶ NERIS Secretariat – Eymeric Lafranque ([sec@eu-neris.net](mailto:sec@eu-neris.net))
- ▶ DTU-Nutech – Kasper Andersson ([kgan@dtu.dk](mailto:kgan@dtu.dk))

You can also visit the NERIS website (<https://eu-neris.net>).

## Important dates

*Registration deadline: 22<sup>nd</sup> March 2019*

*Authors' Powerpoint deadline: 25<sup>th</sup> March 2019*

*5<sup>th</sup> NERIS Workshop: 3<sup>rd</sup>-5<sup>th</sup> April 2019*



NERIS