



5th 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.

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)**

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.

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 **10th 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

Jinxin Qiao – DTU Nutech (Denmark)

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

11:50-12:30

Session 1: 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 2: Radiological impact assessment during all phases of nuclear and radiological events (Cont.)

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 3: Radiological impact assessment during all phases of nuclear and radiological events (Cont.)

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 4: 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 5: Setting-up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery (Cont.)

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 6: 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 7: Countermeasures and countermeasure strategies in emergency & recovery, decision support & disaster informatics (Cont.)

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 8: Setting-up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery (Cont.)

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 9: 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

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

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

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 10: Challenges in estimating the source term and operational radiological picture (on-site versus off-site) (Cont.)

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)

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

Dr. Martin Sogalla — GRS (Germany)

15 :30-16:00

CLOSING WORDS

NERIS Young Scientist Award

List of Posters

Topic 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)

Topic 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)

Topic 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)
- ▶ DTU-Nutech :
Jinxin Qiao (jjqi@dtu.dk)
Kasper Andersson (kgan@dtu.dk)
Helle Tofte Holm (htho@dtu.dk)

You can also visit the NERIS website:

<https://eu-neris.net>

Important dates

- ▶ Registration deadline:
22nd March 2019
- ▶ Powerpoint presentation deadline:
25th March 2019
- ▶ 5th NERIS Workshop:
3 - 5 April 2019



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