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

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
Frederikborgvej 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.
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| 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

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 — EEAЕ (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
Olivdo Guzmán - NEA

WG Information Participation and Communication satellite meeting

Thursday 4th April 2019

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)

Coffee Break
Thursday 4th April 2019

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)

Lunch

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)

Poster presentation

Coffee Break
Thursday 4th April 2019

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)

Workshop dinner

Friday 5th April 2019

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)

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 (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 (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 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 Stawomir Potempski — 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
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 – Kasper Andersson (kgan@dtu.dk)
You can also visit the NERIS website (https://eu-neris.net).

Important dates
Registration deadline: 22nd March 2019
Authors’ Powerpoint deadline: 25th March 2019
5th NERIS Workshop: 3rd-5th April 2019