

Abstract submission form

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| | |
|---------------|-------------------------------------|
| First name | Paulo |
| Name | Nunes |
| Organisation | APA – Portuguese Environment Agency |
| Country | Portugal |
| Email address | paulo.nunes@apambiente |

Abstract information

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|---|---|
| Presentation type [1] | Poster |
| Select one or more topic [2] | Preparedness for a sustainable recovery: including nonradiological consequences and effects |
| The subject of the presentation | Strategy Optimization in Portuguese Radiological Emergency Scenarios using the European Model for Inhabited Areas (ERMIN) |
| Participation NERIS Young Scientist Award [3] | NO |
| Proceedings of the Workshop 2020 [4] | YES |

[1] Copy paste:

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Both (The programme committee will choose oral or poster)

[2] Copy paste one or more subject(s):

Operational aspects: from theory to practice

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Preparedness for a sustainable recovery: including nonradiological consequences and effects

Updating handbooks, guidelines, and recommendations to support decision making

Future research needs

Other

[3] To promote young researchers, the NERIS platform awards free participation to the 7th NERIS Workshop (2021) and diploma to the winner of the prize. To participate you must be under 35 years old in May 2020. **Answer: yes / no.**

[4] You can publish a full paper in the proceedings of the Workshop 2020 to be published by the end of 2020. The full paper deadline on 31st July 2020. If you're not sure yet, tell us and we'll come back at you on this after the Workshop. **Answer: yes / no / maybe.**

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Strategy Optimization in Portuguese Radiological Emergency Scenarios using the European Model for Inhabited Areas (ERMIN)

David Ferreira¹, Catarina Inácio¹, Filipa Jerónimo¹, Mário Reis¹, João Oliveira Martins², Luís Portugal², Márcia Farto², Paulo Marques Nunes².

¹ *Instituto Superior Técnico, Centro de Ciências e Tecnologias Nucleares, Universidade de Lisboa, Lisboa, Portugal*

² *Agência Portuguesa do Ambiente (Portuguese Environment Agency), Amadora, Portugal*

Abstract

The European Model for Inhabited Areas (ERMIN) was developed to assess recovery options after an urban environment has been contaminated with radioactive material. The ERMIN has been integrated in several decision support systems like ARGOS and JRODOS. This Model requires the description of the environment to be assessed, the type of contamination and the possible strategies and countermeasures to be adopted for the recovery of a radiological emergency.

The aim of this work was to study the application of ERMIN in radiological emergency scenarios occurring in Portuguese inhabited areas. The work involved creating different radiological scenarios for a postulated accident and the evaluation of countermeasure strategies to be applied in each urban area and in distinct surfaces. The radiological scenarios were based on an accidental melting of a radioactive source in the Seixal steel mill. Different urban areas were identified considering their level of contamination as well as the impact this would have on these affected areas. Several countermeasure strategies were designed and tested using ERMIN.

As a general conclusion, in all studied urban areas it was possible to identify a strategy that produced values of individual dose to the public close to, or below, the annual dose limit for the public (1 mSv).

Keywords: ERMIN, radiological emergency, radiation safety, countermeasures, inhabited areas.
