

Abstract submission form

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Abstract information

Presentation type [1]	Oral
Select one or more topic [2]	Operational aspects: from theory to practice
Subject of the presentation	Bayesian source reconstruction: overview, applications and the importance of model error
Participation NERIS Young Scientist Award [3]	Yes
Proceedings of the Workshop 2020 [4]	Yes

[1] Copy paste:

Oral

Poster

Both (The programme committee will choose oral or poster)

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

Operational aspects: from theory to practice

Disaster management and resilience in communities

Preparedness for a sustainable recovery: including non radiological 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 a 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 is 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.**

⚠ The abstract submission must respect the following template and must not exceed 1 page. The completed abstract submission form has to be sent by email to the NERIS secretariat (sec@eu-neris.net) by **January 31st, 2020**. Please name your file with an easily identifiable prefix: FirstName_NAME_subject_... etc.

Bayesian source reconstruction: overview, applications and the importance of model error

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Abstract

A Bayesian source reconstruction tool has been developed during the first author's stay at the Radiation Protection Bureau of Health Canada. The tool is able to make inferences of source parameters (such as source location and release amount) given a set of airborne activity concentrations and their corresponding source-receptor-sensitivities obtained from ATM (atmospheric transport and dispersion modelling). An overview of the theory behind the tool will be given, with particular focus on the following aspects: (i) the likelihood formulation, which was designed to deal with instrumental detections and non-detections, (ii) the importance of model error, and the effects of alternative model error formulations. An ensemble of data assimilations will be used in a case study; from that, it will be assessed whether the assumed model error structure is compatible with the error structure obtained from the ensemble. Examples will be shown for the Ru-106 case in autumn 2017 and / or the more recent Se-75 release in May 2019.
