

Registration

www.empa-akademie.ch/n2oisotope

Key dates

Deadline abstract submission:

July 31, 2019

Deadline registration:

August 31, 2019

Oral/poster presentations

If you would like to present your research in a talk or a poster, please submit a one-page abstract via the workshop homepage until July 31, 2019. The abstract template can be downloaded from the workshop homepage.

Fees and Payment

The workshop fee of CHF 130.– will cover lunch, Fondue dinner event and snacks during coffee breaks. The number of participants for the Fondue event is limited to 50 and will be handled on a first come/first served base, so be quick!

Cancellation

For cancellations after August 31, 2019, 50% of the fee will be charged. After October 2, 2019, or in case of non appearance, we will charge the full fee. A substitute will be accepted anytime.

Funding



SWISS NATIONAL SCIENCE FOUNDATION



General Information

Location Empa, Überlandstrasse 129, 8600 Dübendorf
AKADEMIE

Registration www.empa-akademie.ch/n2oisotope

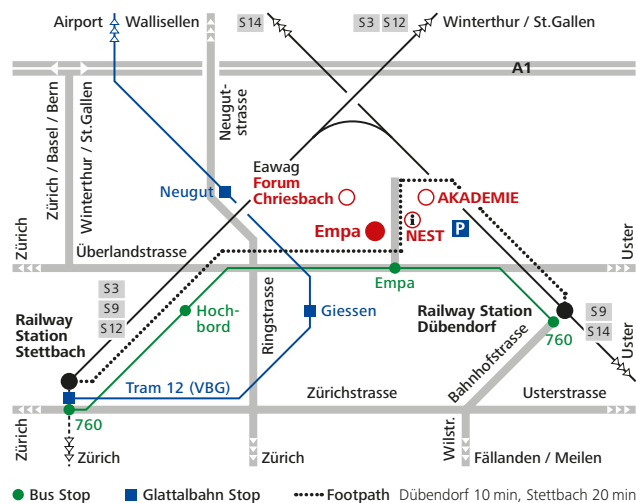
Deadline August 31, 2019

Accommodation Overnight accommodation should be arranged individually. Hotels around the Empa campus can be found on the Empa homepage. Please mention your participation at the Empa workshop to get a discount.

Contact Empa
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How to get here Please do use public transport.
There is only very limited parking available.



WORKSHOP

What can we learn from N₂O isotope data?

Analytics, reaction mechanisms and modelling



Empa, Überlandstrasse 129, Dübendorf
October 23–24, 2019

Online registration:
www.empa-akademie.ch/n2oisotope

Topic

In recent years, research on the N₂O cycle using stable isotopes has significantly advanced driven by the increasing awareness of its global environmental impact. Scientific evolution will further accelerate due to ongoing analytical progress, providing novel tracers and/or enhanced measurement data. Most importantly, commercial N₂O isotope monitors have entered the market and will provide data with a temporal coverage and ease of use that has the potential to revolutionize this area of research. Progress and viability will depend on the reliability of data but also our interpretative capabilities, in particular as the user base will extend from specialized stable isotope laboratories to application-oriented research groups.

Target audience

Scientists, postdocs, PhDs and students from multiple research fields-, related to N₂O or other GHG cycles.

Aims

Foster knowledge exchange and collaboration among experts in advanced analytical methods, reaction kinetics, theory of isotope effects of N₂O and modelling. The following scientific questions will be addressed:

- Which analytical techniques should I select for my experiment? Provide information on state of the art techniques, pros and cons and their benchmark performance.
- What are the reaction mechanisms responsible for N₂O production/destruction? Provide know-how on reaction pathways, intermediates and associated isotope fractionation effects.
- Which experimental design/modelling approach will answer my research questions? Provide an overview on natural abundance and ¹⁵N tracer techniques as well as modelling approaches.

Scientific committee

Dr Joachim Mohn, Empa, Dübendorf

Prof. Johan Six, ETH Zürich

Prof. Moritz F. Lehmann, University of Basel

Preliminary workshop schedule

(the timing may change depending on the number of presentations/posters)

October 23

Session 1 Advances in analytical techniques

12:30 Registration / Coffee and snacks

13:20 Welcome

13:30 Introductory talk:

N₂O isotope researches from bulk $\delta^{15}\text{N}$ and $\delta^{18}\text{O}$ to clumped Δ^{458} , Δ^{548} , Δ^{556}

Naohiro Yoshida, Tokyo Institute of Technology

13:45 Invited talks:

N₂O isotopocule analysis by IRMS to detect and interpret long-term trends in atmospheric N₂O

Sakae Toyoda, Tokyo Institute of Technology

Performance of state-of the art laser spectroscopy (CRDS, OA-ICOS, TDLAS) for N₂O isotopes

Stephen Harris, University of New South Wales

15:05 Coffee and poster session

16:15 Presentations by participants (until 17:30)

18:30 Fondue event at Forsthütte Geeren

October 24

Session 2 N₂O reaction mechanisms

8:45 Invited talks:

Mechanism for N₂O generation in bacterial NO reductase

Margareta R.A. Blomberg, University of Stockholm

Isotopic fractionation in N₂O photolysis in the stratosphere

Matthew Johnson, University of Copenhagen

10:05 Coffee and poster session

11:15 Presentations by participants

12:30 Lunch

Session 3 Modelling and interpretation of N₂O isotope data

13:30 Invited talks:

Understanding the conservative and non-conservative behaviour of stable isotopes as tracers of microbial N₂O production pathways

Nathaniel Ostrom, Michigan State University

Quantification of N transformation pathways via ¹⁵N tracer modelling

Christoph Müller, University of Giessen

14:50 Coffee and poster session

16:00 Presentations by participants

17:15 Workshop closure

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You will receive a confirmation by e-mail.