

# SINA - Stable Isotope Network Austria

## 15<sup>th</sup> Stable Isotope Network Meeting

University of Vienna, Austria

24<sup>th</sup> & 25<sup>th</sup> November 2017

## Programme

### **VENUE:**

University of Vienna  
Lecture room 2, UZA 1  
Althanstraße 14  
1090 Vienna



## PROGRAMME

### FRIDAY 24<sup>th</sup> NOVEMBER 2017

- 12:30 – 12:55 Registration
- 12:55 – 13:00 Welcome & Introduction (**Wolfgang Wanek**)

#### SESSION 1 **Chair: Christoph Spötl**

- 13:00 – 13:45 *Key Note Address*  
**Thomas Hofstetter** (Eawag, Swiss Federal Institute of Aquatic Science and Technology, Dübendorf, Switzerland)  
New challenges for the stable isotope analysis of organic pollutant biodegradation
- 13:45 – 14:05 **Jan Wiederhold** (Dept. of Environmental Geosciences, University of Vienna, Austria)  
Tracing sources and fate of mercury in soils and groundwater at industrial contamination sites with stable mercury isotopes
- 14:05 – 14:25 **Christin Müller** (Helmholtz Center for Environmental Research, Department Catchment Hydrology, Halle, Germany)  
Tomography of anthropogenic nitrate contribution along mesoscale rivers in two European catchments
- 14:25 – 14:45 **György Czuppon** (Institute for Geological and Geochemical Institute, Hungarian Academy of Sciences, Budapest, Hungary)  
Relationship between the air moisture source and the stable isotope composition of the precipitation in Hungary
- 14:45 – 15:05 **Stefan Wyhlidal** (AIT – Austrian Institute of Technology GmbH, Tulln, Austria)  
Temporal and spatial distribution of isotopes in river water in Austria

#### 15:05 – 15:40 **Coffee and Tea Break**

#### SESSION 2 **Chair: Jan Wiederhold**

- 15:40 – 16:00 **Christoph Spötl** (Institute of Geology, University of Innsbruck, Innsbruck, Austria)  
Stable isotopes reveal the origin of caves
- 16:00 – 16:20 **Attila Demény** (Institute for Geological and Geochemical Research, Research Centre for Astronomy and Earth Sciences, Hungarian Academy of Sciences, Budapest, Hungary)  
Middle Bronze Age humidity and temperature variations and societal changes in East-Central Europe
- 16:20 – 16:40 **Anna-Lena Grauel** (Godwin Laboratory for Palaeoclimate Research, Department of Earth Sciences, University of Cambridge, Cambridge, United Kingdom)  
Magnitude of temperature change in the lowland Neotropics during the last Glacial
- 16:40 – 17:00 **Kathleen A. Wendt** (Institute of Geology, University of Innsbruck, Innsbruck, Austria)  
775,000 years of climate history from the southwest USA: revamping the famous Devils Hole cave record
- 17:00 – 17:20 **Zoltán Kern** (Institute for Geological and Geochemical Research, Research Centre for Astronomy and Earth Sciences, Hungarian Academy of Sciences, Budapest, Hungary)  
Stable isotope signatures in tree rings of Swiss stone pine (*Pinus cembra* L.) in Romania – annually resolved summer proxy archive for the past 600 years
- 17:20 – 19:00 **Poster session 1 and Stable isotope laboratory tours**
- from 19:00 **Dinner** at Brandauers Bierbögen, Heiligenstädter Straße 31, 1190 Vienna

## SATURDAY 25<sup>th</sup> NOVEMBER 2017

### SESSION 3

Chair: **Albrecht Leis**

09:00 – 09:45

*Key Note Address*

**Rolf Siegwolf** (Paul Scherrer Institute, Villigen, Switzerland)

Trees in a changing environment: Visualizing their responses with stable isotopes

09:45 – 10:05

**Patrick Meister** (Dept. for Geodynamics and Sedimentology, University of Vienna, Austria)

Carbon isotope fractionation during methanogenesis in marine sediments: An evaluation by reactive-transport modelling

10:05 – 10:25

**Micha Horacek** (HBLFA Francisco-Josephinum BLT, Wieselburg, Austria)

Identification of ivory with respect to animal species by stable isotopes

10:25 – 11:00

**Coffee and Tea Break**

11:00 – 11:20

**Danijela Smajgl** (GEOMAR Helmholtz Centre for Ocean Research Kiel, Kiel, Germany)

New analytical approach in monitoring of CO<sub>2</sub> cycle in aquatic ecosystems

11:20 – 11:40

**Filip Volders** (Elementar Analysensysteme GmbH, Langenselbold, Germany)

An LC-IRMS Interface for Flexible Compound-specific Stable Isotope Analysis

11:40 – 12:00

**Oliver Schlegel** (Air Liquide Austria GmbH, Schwechat, Austria)

Improving Measurement Reliability of Isotope Ratios

12:00 – 14:00

**Lunch** (on-site lunch is included in the registration fee!) and **Poster session 2**

### SESSION 4

Chair: **Stefan Wyhlidal**

14:00 – 14:45

*Key Note Address*

**Michaela Dippold** (Dept. of Biogeochemistry of Agroecosystems, Georg-August University Göttingen, Germany)

From position-specific labeling to quantitative soil fluxomics - new dimensions in terrestrial biogeochemistry

14:45 – 15:05

**Yuntao Hu** (Dept. of Microbiology and Ecosystem Science, University of Vienna, Austria)

Multiple isotope tracing reveals the transformation processes of oligopeptides in soils

15:05 – 15:25

**Zsofia Kovacs** (Institute of Earth Sciences, University of Graz, Austria)

The influence of pelagic calcification on the Late Triassic seawater chemistry

15:25 – 15:45

**Lukasz Pytlak** (Applied Geosciences and Geophysics, University of Leoben, Austria)

Light Hydrocarbon Geochemistry of Oils in the Alpine Foreland Basin: Impact of Geothermal Fluids on the Petroleum System

15:45 – 16:05

**Magda Mandic** (Thermo Fisher Scientific, Bremen, Germany)

Studying various processes with  $\delta^{13}\text{C}$  and  $\delta^{18}\text{O}$

16:05 – 16:30

**Coffee and Tea Break**

16:30 –

**Generalversammlung SINA** - Verein für Stabile Isotopen Forschung

(General assembly of the Stable Isotope Network Austria – SINA.

Seminar room 'Ecology', UZA 1, Althanstr. 14, A-1090 Vienna)

**POSTER SESSION 1 Friday 24<sup>th</sup> November**

17:20 – 19:00

- P1: **Cornelia Wilske** (Dept. of Catchment Hydrology, Helmholtz Centre for Environmental Research (UFZ), Halle/Saale, Germany)  
Behavior of stable sulfate isotopes in a coupled Cretaceous and Quaternary aquifer system, Lower Jordan Valley
- P2: **Katharina Schott** (AIT – Austrian Institute of Technology GmbH, Tulln, Austria)  
Isotope patterns of water at different time scales in the Hydrological Open Air Laboratory (HOAL) Petzenkirchen
- P3: **Martin Kralik** (Dept. of Environmental Geosciences, University of Vienna, Austria)  
Tracing stable isotopes ( $\delta^2\text{H}$  and  $\delta^{18}\text{O}$ ) from meteoric water to spring-groundwater in small catchments of the Vienna Woods, Vienna, Austria
- P4: **Stefan Wyhlidal** (AIT – Austrian Institute of Technology GmbH, Tulln, Austria)  
The Austrian Network of Isotopes in Precipitation (ANIP) and its application in hydrology
- P5: **István Gábor Hatvani** (Institute for Geological and Geochemical Research, Research Centre for Astronomy and Earth Sciences, Hungarian Academy of Sciences, Budapest, Hungary)  
Resampling of sedimentary proxy records to evenly spaced time-series using spectral control on the example of speleothem stable isotope records from Europe
- P6: **György Czuppon** (Institute for Geological and Geochemical Research, Hungarian Academy of Sciences, Budapest, Hungary)  
Multi-annual monitoring in the Béke and Baradla caves (NE Hungary): implications for the conditions for the formation cave carbonates
- P7: **Izabela Bujak** (Dept. of Catchment Hydrology, Helmholtz Centre for Environmental Research (UFZ), Halle/Saale, Germany)  
Multi-isotope approach to evaluate sources and fate of nitrogen in the Erlauf River catchment in Austria
- P8: **Vera Winde** (LUBW, Institute for Lake Research, Langenargen, Germany)  
Rhine river plume tracking with stable hydrogen and oxygen isotopes in Lake Constance
- P9: **Giorgio Höfer-Öllinger** (Georesearch Forschungsgesellschaft mbH, Wals, Austria)  
Stable Isotopes in Precipitation: A Case Study on Daily Analyses at Sonnblick Observatory (3.106m) and in Wals Isolab (446m), Salzburg, Austria
- P10: **Máté Karlik** (Institute for Geological and Geochemical Research, Research Centre for Astronomy and Earth Sciences, Hungarian Academy of Sciences, Budapest, Hungary)  
Natural and anthropogenic changes in a lake-forest system in South Bukovina based on stable C and N isotope ratios and lipid biomarkers since 1340 A.D.
- P11: **Zoltán Kern** (Institute for Geological and Geochemical Research, Research Centre for Astronomy and Earth Sciences, Hungarian Academy of Sciences, Budapest, Hungary)  
Establishment of the lab protocol for simultaneous determination of stable isotope composition of carbon, oxygen, and non-exchangeable hydrogen in cellulose samples using a heated vacuum-equilibration device

**POSTER SESSION 2** Saturday 25<sup>th</sup> November

12:00 – 14:00

P12: **Kathrin Schmittner** (AIT – Austrian Institute of Technology GmbH, Tulln, Austria)  
Impacts of nitrogen deposition on forest biogeochemical processes across a trans-European gradient investigated using a tool kit of stable isotope methods

P13: **Elisabeth Ziss** (AIT – Austrian Institute of Technology GmbH, Tulln, Austria)  
Biochar: NET-2-U. Biochar: Negative Emission Technologies are nice to the environment - Using stable isotopes in a citizen science approach

P14: **Andrea Watzinger** (AIT – Austrian Institute of Technology GmbH, Tulln, Austria)  
Consequences of climate change for agroecosystem carbon and nitrogen cycling – an isotope labelling of green manure approach

P15: **Andrea Watzinger** (AIT – Austrian Institute of Technology GmbH, Tulln, Austria)  
Determination of carbon isotope enrichment factors of metabolites after precursor amendment- illustrated by the example of chlorinated ethene degradation

P16: **Nora Fricko** (TU Wien, Institute for Water Quality, Resource and Waste Management, Vienna, Austria)  
Project MINTOX – Microbial nitrogen transformation processes during waste degradation

P17: **Micha Horacek** (HBLFA Francisco-Josephinum BLT, Wieselburg, Austria)  
Imported or already locally native? Stable isotope investigation of invasive tree pests can differentiate between pests grown in local trees (Austria) from pests grown elsewhere: a pilot study of *Monochamus*

P18: **Ingrid Rabitsch** (Dept. of Forestry and Soil Science, University of Natural Resources and Life Sciences, Vienna, Austria)  
Impacts of habitat changes on food availability for the Warbler finch in the Scalesia Forest, Galápagos

P19: **Jan Wiederhold** (Dept. of Environmental Geosciences, University of Vienna, Austria)  
Tracing Hg transformations in contaminated soil using Hg isotopes

P20: **Jan Wiederhold** (Dept. of Environmental Geosciences, University of Vienna, Austria)  
Hg isotope analysis and sequential extractions of industrially contaminated soils in Valais, Switzerland

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