

Wissenschaftliches Programm • Montag, 28. September 2015

13:00 Begrüßung

13:15–15:30 Session 1 – Atmosphärische Prozesse

Chair F. Keppler (Heidelberg/DE)

13:15 Keynote–Presentation: The use of isotope measurements in atmospheric research.

V1 T. Röckmann (Utrecht/NL)

13:50 Mapping methane plumes and the delta C-13 composition of anthropogenic sources
around Heidelberg

V2 M. Schmidt (Heidelberg/DE)

14:10 D/H Isotope Ratio Measurements of Atmospheric Volatile Organic Compounds

V3 T. Meisehen (Wuppertal/DE)

14:30 Temperature dependence of the carbon kinetic isotope effect for the oxidation

V4 reaction of ethane by OH radicals under atmospherically relevant conditions: experimental and theoretical studies

T. Piansawan (Jülich/DE)

14:50 Modelling the isotopic composition of long lived trace gases with the AGAGE 12 Box
model

V5 E. Bahlmann (Hamburg/DE)

15:10 Tracking aerosol chemical age with stable carbon isotopes

V6 J. Gensch (Jülich/DE)

15:30–16:30 Postersession und Kaffeepause

16:30–18:10 Session 2 – Analytik: Methoden, Techniken und Standardisierung I

Chair W. Brand (Jena/DE)

16:30 Real-time analysis of $\delta^{13}\text{C}$ - and δD - CH_4 in ambient air with laser spectroscopy:

V7 Method development and intercomparison

J. Mohn (Dübendorf/DE)

16:50 Head space analysis of CO_2 isotopologues with an Isotope Ratio Infrared
Spectrometer

V8 H. J. Jost (Reinach/CH)

17:10 Automatic Data Calibration Strategies with IONOS

V9 F. Volders (Hanau/DE)

17:30 Extending the boundaries of 10 kV isotope ratio MS

V10 A. Hilker (Bremen/DE)

17:50 A comparison of methods for triple isotopocule N_2 analysis

V11 J. Dyckmans (Göttingen/DE)

20:00 User Meeting Thermo Fisher Scientific GmbH

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8:30–09:50 Session 3 – Analytik: Methoden, Techniken und Standardisierung II

Chair W. Brand (Jena/DE)

8:30 Compound-specific hydrogen isotope analysis of heteroatom-bearing compounds via
V12 gas chromatography – chromium/HTC – isotope ratio mass spectrometry (GC-Cr/HTC-IRMS)
J. Renpenning (Leipzig/DE)

8:50 Comparison of carbon and oxygen isotope values from different wood preparation
V13 procedures in dendrochronology
D. F. C. Riechelmann (Mainz/DE)

9:10 Limits and potentials determining stable water isotopes using in-situ measurements
V14 and soil water extractions
M. Gaj (Hannover/DE)

9:30 Oxygen isotope analyses of individual carbohydrates with GC-Pyrolysis-IRMS – a
V15 new and precise method
M. M. Lehmann (Villigen/CH)

09:50–10:50 Postersession und Kaffeepause

10:50 Verleihung des Isotopenpreises

11:50–13:10 Mittagspause

13:10–14:50 Session 4 – Geochemische Stoffkreisläufe und Hydrologie

Chair M. Böttcher (Warnemünde/DE)

13:10 Investigation of sulfur-cycling processes in a BTEX contaminated porous aquifer by
V16 using a high-resolution sampling strategy
F. Einsiedl (München/DE)

13:30 Isotope fractionation of dissolved O₂ reveals the rate-limiting step during enzymatic
V17 dioxygenation of (nitro)aromatic contaminants
S. Pati (Dübendorf/CH)

13:50 What does $\delta^7\text{Li}$ in water tell us about flow paths in an alpine catchment?
V18 C. Meier (Halle a. d. Saale/DE)

14:10 Deuterium (²H) as applied tracer in the vadose zone: experiences from semiarid
V19 Namibia
M. Beyer (Hannover/DE)

14:30 Calcium isotopes as proxy for early diagenetic processes in marine porewaters
V20 N. Gussone (Münster/DE)

14:50–15:10 Kaffeepause

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15:10–16:50 Session 5 – Klimaforschung

Chair M. Zech (Halle a. d. Saale/DE)

15:10 Novel Insights from Multi-Millennial Tree Ring Isotope Records of the Early and Mid-

V21 Holocene

M. M. Ziehmer (Bern/CH)

15:30 Reconstructed isotopic composition of leaf water and precipitation provides new

V22 insight into hydrological changes in East Equatorial Africa during the Last Glacial

J. Hepp (Bayreuth, Halle a. d. Saale/DE)

15:50 Compound-specific leaf wax δD and $\delta^{13}C$ analyses from the Late Quaternary loess

V23 paleosol sequence El Paraiso, Central Spain

I. Schäfer (Bern/CH)

16:10 Late Glacial climate reconstruction based on stable isotopes in biomarkers from the

V24 Gemündener Maar, Germany

L. Wüthrich (Bern/CH)

16:30 Glacial-interglacial productivity changes in the eastern equatorial Pacific upwelling

V25 system: a threshold response to Plio-Pleistocene ice-sheet dynamics? Implications from foraminiferal stable carbon and oxygen isotopes

K. A. Jakob (Heidelberg/DE)

16:50–18:00 ASI–Mitgliedertreffen

Ab 19:00 **Konferenz-Abendessen: Neckarfahrt mit dem Solarschiff „Neckarsonne“**
(pünktliches Ablegen um 19:00!)

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8:50–10:10 Session 6 – Lebensmittel, Forensik und Doping / Metabolismus und Physiologie

Chair G. Gebauer (Bayreuth/DE)

- 8:50 The EU funded project 'SPICE-profiling' (2015-2017): First results of the analytical
V26 characterization of Spice products containing the amino alkyl indole 5F-PB-22 by using stable isotope ratio mass spectrometry (IRMS)
N. Scheid (Wiesbaden/DE)
- 9:10 Stable Isotope Analysis as tool for the identification of authenticity and origin of fruits
V27 and fruit-products
O. Nehlich (Neutal/AT)
- 9:30 High intraspecific ability to adjust both carbon uptake and allocation under light and
V28 nutrient reduction in *Halimium halimifolium* L
F. Wegener (Freiburg/DE)
- 9:50 Direct incorporation of precursor fatty acids into microbial lipids in soils: Position-
V29 specific labeling tells the story
M. Dippold (Göttingen/DE)

10:10–11:10 Postersession und Kaffeepause

11:10 –12:30 Session 7 – Ökosysteme

Chair A. Giesemann (Braunschweig/DE)

- 11:10 Can foliar $\delta^{15}\text{N}$ be retrieved from fresh leaf reflectance spectra? Evidence from an
V30 experimental labeling approach
C. Hellmann (Bielefeld, Freiburg/DE)
- 11:30 The importance of associations with saprotrophic non-Rhizoctonia fungi among fully
V31 mycoheterotrophic orchids is currently under-estimated: novel evidence from sub-tropical Asia
G. Gebauer (Bayreuth/DE)
- 11:50 Does "you are what you eat (plus a few permil)" also hold true for orchids?
V32 J. M.–I. Schiebold (Bayreuth/DE)
- 12:10 Elucidation of microbial metabolic pathway activities in soil at low temperature using
V34 position-specific ^{13}C labeled glucose
E. Bore (Göttingen/DE)

12:30–13:15 Preisverleihungen und Schlussworte

Posterpräsentationen

Die Autoren freuen sich schon sehr darauf, Ihnen ihre wissenschaftlichen Ergebnisse vorstellen zu können. Folgende Beiträge werden Ihnen als Poster präsentiert:

- P1 Messung von stabilen Isotopen in Luftproben für das ICOS Netzwerk
M. Eritt (Jena/DE)
- P2 Challenges in using cryogenic water extraction to trace plant's source water
N. Orłowski (Giessen/DE, Saskatoon/CA)
- P3 Clumped isotope thermometry of carbonate-bearing apatites: Digestion techniques and calibrations
M. E. Böttcher (Warnemünde/DE)
- P4 "An isotopic perspective on the levoglucosan chemical stability
I. Gensch (Juelich/DE)
- P5 Molecularly-imprinted polymers enable the C and N isotope analysis of polar organic micropollutants in the µg/L range
R. Bakkour (Dübendorf/CH)
- P6 Development of non-covalent molecularly-imprinted polymers for stable carbon and nitrogen isotope analysis of 1H-benzotriazole; from synthesis to application
S. Jucker (Dübendorf/CH)
- P7 Application of laser absorption spectroscopy (¹³C-CH₄ and ¹³C-CO₂) for online monitoring in biogas plants
D. Polag (Heidelberg/DE)
- P8 Photocatalyzed Glyphosate Degradation by Titanium Dioxide Characterized with LC-IRMS
J.-B. Wolbert (Essen/DE)
- P9 Measurement of delta O-18 and delta H-2 in atmospheric water vapour and precipitation in Heidelberg using two commercial laser-based spectrometers
M. Schmidt (Heidelberg/DE)
- P10 Analysis of N₂O isotopic composition at a tall tower in central Switzerland to identify emission sources and hot spots
E. Ibriam (Dübendorf, Zürich/CH)
- P11 "Carbon diagenesis in sediments of the subtropical Beibu Gulf, South China Sea: A stable isotope and modeling study
B. Liu (Rostock/DE)
- P12 δ⁸¹Br and δ³⁷Cl – what do they tell us about the origin and fate of fluids in highly saline settings? Case study in the Zechstein formation of the Northern German Basin.
S. Stadler (Hannover/DE)
- P13 Discharge driven nitrogen dynamics in a large river catchment: an isotope study
C. Müller (Halle a. d. Saale/DE)
- P14 Evidence for methane formation from algae in oxic seawater using a stable isotope approach
T. Klintzsch (Gießen/DE)

Posterpräsentationen

- P15 Assessment of land subsidence mechanisms triggered by dolomitic marble dissolution from hydrogeochemistry and stable isotopes of spring waters
R. van Geldern (Erlangen/DE)
- P16 Oxygen isotope fractionation in double carbonates
M. E. Böttcher (Warnemünde/DE)
- P17 The stable isotope hydrogeochemistry of ground waters in Mecklenburg-Western Pommerania
M. E. Böttcher (Warnemünde/DE)
- P18 Multi-isotope composition of fresh water sources for the North-German coast
M. E. Böttcher (Warnemünde/DE)
- P19 The stable water isotope composition of surface waters from European marginal seas (Baltic, Black, Mediterranean, North Seas)
M. E. Böttcher (Warnemünde/DE)
- P20 The application of $\delta^{34}\text{S}$, $\delta^{13}\text{C}$ and $87\text{Sr}/86\text{Sr}$ to differentiate water resources in the western Dead Sea multi-aquifer system
C. Wilske (Halle, Freiberg/DE)
- P21 Can changes in the natural isotopic composition of N-Nitrosodimethylamine provide new insights into its formation pathway?
S. Spahr (Dübendorf/CH)
- P22 Tracking biotransformation of hexachlorocyclohexane isomers by compound-specific isotope analysis
I. Schilling (Dübendorf/CH)
- P23 Controls of the pelagic dissolved carbon system in a temperate tidal basin: A long-term hydrochemical and stable carbon isotope study
V. Winde (Rostock/DE)
- P24 Two water worlds? The use of ^{18}O and ^2H to trace water sources through vegetation and stream flow and partition evapotranspiration fluxes
C. Werner (Freiburg/DE)
- P25 Element fluxes across the sediment-water interface and mixing processes in surface sediments of the Baltic Sea
M. Lipka (Rostock/DE)
- P26 Stable Isotope Signatures of Groundwaters from the Biyadh Aquifer, Saudi Arabia
N. Michelsen (Darmstadt/DE)
- P27 The fate of sulfur and implications for methane emissions in a rewetted brackish peatland
F. Koebisch (Potsdam/DE)
- P28 A $\delta^2\text{H}$ and $\delta^{18}\text{O}$ biomarker transect study from Central to Northern Europe
J. Hepp (Bayreuth, Halle a. d. Saale/DE)
- P29 Compound-specific leaf-wax δD analyses in the loess-paleosol sequence Krems-Wachtberg, Austria
S. Knoll (Freising/DE, Bern/CH)

Posterpräsentationen

- P30 Optimizing the sampling strategy for carbon and oxygen isotope analysis of an annually laminated stalagmite from Zoolithencave (Bavaria, Germany)
D. F. C. Riechelmann (Mainz/DE)
- P31 *Fucus vesiculosus* as proxy for climate change induced impacts on North Sea coastal waters
V. Winde (Rostock/DE)
- P32 Annual temperatures of cold and temperate regions derived from stable hydrogen isotope values of wood lignin methoxyl groups
T. Anhäuser (Heidelberg/DE)
- P33 Effects of reduced energy-intake on $^{13}\text{C}/^{12}\text{C}$ ratios of urinary steroids – a case study
P. Riemann (Köln/DE)
- P34 Isotopic composition of polyhalomethanes from marine macrophytes -Systematic effects of the halogen substituents on the isotopic composition
E. Bahlmann (Hamburg/DE)
- P35 Using position-specific ^{13}C and ^{14}C labeling and ^{13}C -PLFA analysis to assess microbial transformations of free versus sorbed Alanine
C. Apostel (Göttingen/DE)
- P36 Direct photolysis of sulfamethoxazole at different irradiation conditions and the resulting carbon stable isotope fractionation
S. Willach (Essen/DE)
- P37 Evaluating the contribution of water resources to crop growth of rice and maize by stable water isotopes
A. Mahindawansa (Gießen/DE)