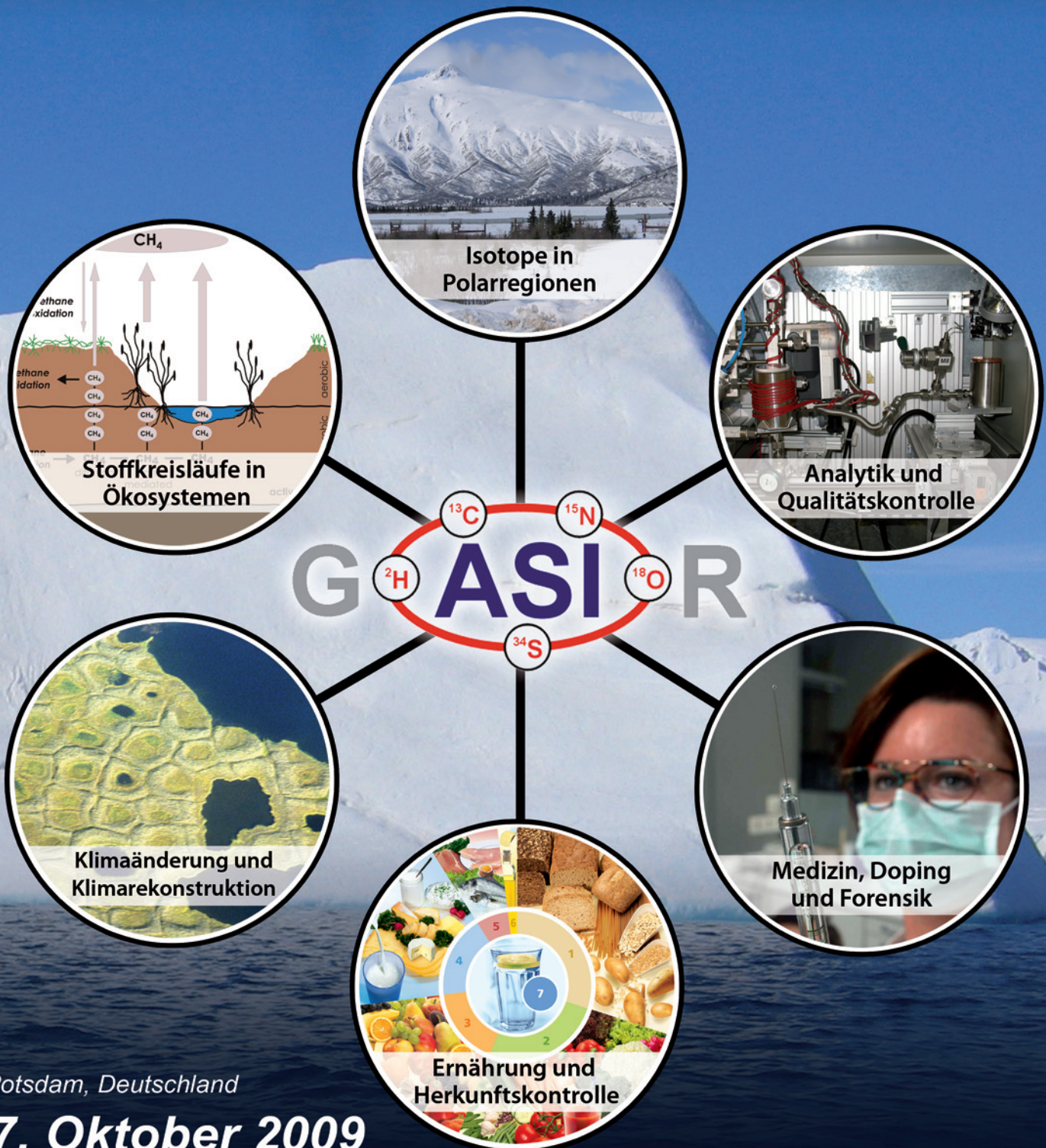


TERRA NOSTRA

- Programmauszug -

Schriften der GeoUnion Alfred-Wegener-Stiftung 2009/3



AWI Potsdam, Deutschland

5.-7. Oktober 2009

Jahrestagung der Arbeitsgemeinschaft Stabile Isotope e.V. (ASI)

Annual meeting of the German Association of Stable Isotope Research (GASIR)

Time	Monday, Oct. 5	Tuesday, Oct. 6	Wednesday, Oct. 7	
9:20	Registration and Office Monday: 11.00 - 18:00 Tuesday: 8:00 - 18:00 Wednesday: 8:00 - 14:00	Isotopes in Polar Regions I	Isotopes in Polar Regions II	
9:40				
10:00		Coffee Break		
10:20		Matter Fluxes in Ecosystems II	Nutrition, Medicine, Doping & Forensics	
10:40				
11:00		Isotope Award of the Karleugen-Habfast-Foundation	Award: Best Poster & Talk Closing Ceremony	
11:20				
11:40		Opening & Keynote Lecture	Lunch Break	
12:00				
12:20		Climate Change & Climate Reconstruction	Analytics & Quality control	Option: Excursion Telegrafenberg
12:40				
13:00	Coffee Break	Matter Fluxes in Ecosystems I	Rooms All scientific sessions take place in the lecture hall of building H. Coffee breaks are in the foyer, lunch breaks are hosted in the canteen of building H. Other locations are mentioned in the table.	
13:20	Coffee Break			
13:40		Poster Session I		
14:00	Poster Session II			
14:20		Annual Meeting of the GASIR Members		
14:40	Conference Dinner			
15:00		Thermo Fisher User Meeting		
15:20	Thermo Fisher User Meeting			
15:40		Thermo Fisher User Meeting		
16:00	Thermo Fisher User Meeting			
16:20		Thermo Fisher User Meeting		
16:40	Thermo Fisher User Meeting			
17:00		Thermo Fisher User Meeting		
17:20	Thermo Fisher User Meeting			
17:40		Thermo Fisher User Meeting		
18:00	Thermo Fisher User Meeting			
18:20		Thermo Fisher User Meeting		
18:40	Thermo Fisher User Meeting			
19:00		Thermo Fisher User Meeting		
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19:40		Thermo Fisher User Meeting		
20:00	Thermo Fisher User Meeting			
20:20		Thermo Fisher User Meeting		
20:40	Thermo Fisher User Meeting			
21:00		Thermo Fisher User Meeting		
21:20	Thermo Fisher User Meeting			
21:40		Thermo Fisher User Meeting		
22:00	Thermo Fisher User Meeting			

General Programme

Breaks

Poster Sessions

Oral Sessions

Monday, Oct. 5, 2009

Opening and keynote lecture, 13:00 - 14:00

Lecture hall (Building H)

Miller, H. *Monday, Oct. 5, 13:30 – 14:00*

Alfred Wegener Institute, Bremerhaven, Germany

Isotope und Eisbohrkerne (for details see abstract page 60)

■ Session A: Climate Change and Climate Reconstruction, 14:00 – 15:00

Lecture hall (Building H)

Chair: H.-W.Hubberten (Potsdam)

- 14:00 – 14:20 A-1 C. Mangili, A. Brauer, B. Plessen
Palaeoclimate reconstruction of the Pliocene Interglacial (400 ka old) by means of stable isotope analyses on endogenic calcite
- 14:20 – 14:40 A-2 A. Gieseemann, C. Balko
Can $\delta^{13}\text{C}$ values serve as an early indicator for drought tolerance of potato genotypes?
- 14:40 – 15:00 A-3 R. Siegwolf, M. Saurer, O. Sidorova
Variability in tree ring stable C and O isotopes as a response to increasing CO_2

Coffee Break, 15:00 - 15:40

■ Session B1: Matter Fluxes in Ecosystems I, 15:40 – 17:00

Lecture hall (Building H)

Chair: H.W.-Hubberten (Potsdam)

- 15:40 – 16:00 B1-1 A. Vieth, M. Gabriel and H. Wilkes
Application of compound-specific carbon and hydrogen isotope ratios to evaluate alteration processes in petroleum reservoirs
- 16:00 – 16:20 B1-2 M. Tichomirowa, C. Heidele, M. Junghans, F. Haubrich
Identifying water sources and the impact of decreasing $\delta^{18}\text{O}$ values of sulfate from precipitation in the region of Freiberg, Southeastern Germany
- 16:00 – 16:40 B1-3 M.E. Böttcher, O. Dellwig, T. Max
Isotope biogeochemistry of dissolved sulfate and sulfide in the water column and surface sediments of the Black Sea

16:40 – 17:00 B1-3 U. Herzsuh, S. Mischke, H. Meyer, B. Plessen, C. Zhang
Lake nutrient variability inferred from isotopic ($\delta^{13}\text{C}$, $\delta^{15}\text{N}$) analyses of aquatic plant macrofossils



Poster Session I, 17:00 - 18:00

see details on the poster presentation on page 17-18

Annual Meeting of the GASIR Members, 18:00 – 19:20

Lecture hall (Building H)

Die Tagesordnung für die jährliche Mitgliederversammlung umfasst die folgenden Punkte:

- Bericht des Vorstandes und des Schatzmeisters
- Diskussionen zu den Berichten und über den Isotopenpreis der Dr. Karleugen Habfast-Stiftung
- Wahl des neuen Vorstandes
- Festlegen der Austragungsorte der ASI-Tagung 2010 und der JESIUM 2012; Vorstellung der Kandidaten

Thermo Fisher User Meeting, 19:20 – 22:00

Lecture hall (Building H)

Tuesday, Oct. 6, 2009



Session C1: Isotopes in Polar Regions I, 9:20 – 10:20

Lecture hall (Building H)

Chair: M.E. Boettcher (Warnemünde)

- 9:20 – 9:40 C1-1 M. Haupt, T. Böttger, M. Friedrich, Y. Kononov
Mathematisch-Statistische Aspekte bei der Erstellung von langjährigen Isotopenchronologien aus zeitlich unterschiedlich aufgelösten Sequenzen von Baumjahren am Beispiel einer *Pinus Sylvestris*-Chronologie (Halbinsel Kola, NW-Russland)
- 9:40 – 10:00 C1-2 P. Quillfeldt, R. McGill, R. W. Furness, C.C. Voigt, J.F. Masello
Small pelagic seabirds in polar waters - stable isotopes reveal migration and foraging patterns
- 10:00 – 10:20 C1-3 H. Meyer, A. Dereviagin, T. Opel, G. Schwamborn, L. Schirrmeister, H.-W. Hubberten
Permafrost ice – a Quaternary climate archive

Coffee Break, 10:20 - 11:00

■ **Session B2: Matter Fluxes in Ecosystems II, 11:00 – 12:20**

Lecture hall (Building H)

Chair: M.E. Boettcher (Warnemünde)

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| 11:00 – 11:20 | B2-1 | <u>C.F. Stange</u> , R. Russow
Messung und Simulation der Entstehung der N-Gase durch Nitrifikation und Denitrifikation mittels eines ¹⁵ N-Markierungsversuches |
| 11:20 – 11:40 | B2-2 | <u>N.Wannicke</u> , F. Korth, M. Voss
Incorporation of diazotrophic fixed N ₂ by mesozooplankton species - Case studies in the southern Baltic Sea using ¹⁵ N-stable isotope tracer addition |
| 11:40 – 12:00 | B2-3 | <u>M. Voss</u> , B. Deutsch, I. Liskow, M. Pastuszak, U. Schulte, S. Sitek
Nitrogen retention in the Oder lagoon, Baltic Sea |
| 12:00 – 12:20 | B2-4 | <u>M. Stöckel</u> , C. Meyer, G. Gebauer
Zwischen Grün und Weiss-Zusammenhang zwischen dem Chlorophyllgehalt der Blätter und dem Grad der Mykoheterotrophie bei der Orchidee <i>Cephalatera Damasonium</i> |

Isotope Award of the Dr. Karleugen-Habfast-Foundation, 12:20 – 13:20

Lecture hall (Building H)

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|---------------|---|
| 12:20 – 13:20 | Der Isotopenpreis der Dr.-Karleugen-Habfast-Stiftung wird an herausragende (junge) Wissenschaftler verliehen, die sich der "Anwendung stabiler Isotope" widmen. Der diesjährige Preisträger wurde durch eine dreiköpfige Jury ausgewählt und zur Nominierung vorgeschlagen. Die Verleihung des Isotopenpreises 2009 wird auf der Jahrestagung der Arbeitsgemeinschaft Stabiler Isotope e. V. in Potsdam erfolgen. |
|---------------|---|

The Isotope Award of the Dr.-Karleugen-Habfast-Foundation will be granted to outstanding (young) scientists, who are devoted their work to the application of stable isotope methods. This year's winner was selected and nominated by a jury of 3 persons. The ceremony of the Isotope Award 2009 will be held in the frame of the GASIR conference in Potsdam.

Lunch Break, 13:20 - 14:20

■ **Session D: Analytics and Quality Control, 14:20 – 16:00**

Lecture hall (Building H)

Chair: M. Gehre (Leipzig)

- 14:20 – 14:40 D-1 B. Chaplgin, H. Meyer, H. Friedrichsen, H.-W. Hubberten
Oxygen isotopes of biogenic silica – calibration studies for using a remotely-operated laser-fluorination based mass spectrometry unit and new methods for removing the hydrous layer
- 14:40 – 15:00 D-2 M. Boner, P. Bliznakov
Möglichkeiten der Hochtemperatur-pyrolyse zur Stabil-Isotopen-Messung unter Einsatz von Temperaturen über 1600° C in Kombination mit der Siliciumcarbid-Einrohr-Technik
- 15:00 – 15:20 D-3 D. Hatscher, O. Kracht, A. Hilkert, J. Schwieters
Advances in automated multi-isotopic fingerprint analysis using Thermo Scientific Elemental Analyzers
- 15:20 – 15:40 D-4 F. Keppler, S. Laukenmann, J. Rinne, H. Heuwinkel, M. Greule, M. Whitar, J. Lelieveld
Measurements of $\delta^{13}\text{C}$ values of methane from anaerobic digesters: Comparison of continuous-flow isotope ratio mass spectrometry and laser absorption spectroscopy
- 15:40 – 16:00 D-5 A. Hilkert, C.B. Douthitt
Multicollectors in isotope ratio MS

Coffee Break, 16:00 - 16:40

■ **Poster Session II, 16:40 - 18:00**

see details on the poster presentation on page 17-18

Conference Dinner, 19:00 - ca. 22:00

see details for location and travel on page 9

Wednesday, Oct. 6, 2009

■ Session C2: Isotopes in Polar Regions II, 9:20 – 10:20

Lecture hall (Building H)

Chair: G. Strauch (Leipzig)

- 9:20 – 9:40 C2-1 M. Behrens, L. Möller, H. Fischer
Carbon isotopic studies on methane in polar ice cores as a clue to past methane sources
- 9:40 – 10:00 C2-2 J. Landsberg, K. Holmen, E. Isaksson, D. Romanini, H.A.J. Meijer, E. Kerstel
Continuous on-line water vapor isotope measurements in Antarctica
- 10:00 – 10:20 C2-3 T. Opel, D. Fritzsche, H. Meyer
Late holocene climate change in the eurasian arctic – Evidence from Akademii Nauk Ice Core (Severnaya Zemlya)

Coffee Break, 10:20 - 11:00

■ Session E: Nutrition, Medicine, Doping & Forensics, 11:00 – 12:20

Lecture hall (Building H)

Chair: G. Strauch (Leipzig)

- 11:00 – 11:20 E-1 M. Greule, F. Keppler
Schnelle und präzise Bestimmung der Isotopenverhältnisse pflanzlicher Methoxygruppen - Methode und Anwendung
- 11:20 – 11:40 E-2 U. Flenker, B. Linster, V. Gougoulidis, F. Hülsemann, W. Schänzer
Possible absence of lipid ^{13}C depletion in sterols and steroids from eukaryotes
- 11:40 – 12:00 E-3 F. Hülsemann, U. Flenker, M. Machnik, I. Schenk, C. Zinner, J. Mester, Wilhelm Schänzer
Identifizierung von Bicarbonat-Applikation bei Mensch und Pferd per IRMS
- 12:00 – 12:20 E-4 T. Piper, U. Flenker, W. Schänzer
Determination of $^{13}\text{C}/^{12}\text{C}$ ratios of endogenous urinary steroids excreted as sulphates: Methods validation and reference population

Award Best Poster and Talk & Closing Ceremony, 12:20 – 13:20

Lecture hall (Building H)

12:20 – 13:20

Auch 2009 in Potsdam werden, einer langen Tradition der ASI-Tagungen folgend, der beste Vortrag und das beste Poster während der Tagung prämiert. Die Auswahl erfolgt durch Mitglieder des ASI-Vorstandes und die Session-Chairs.

Following a long tradition of the GASIR meetings, the best oral and poster presentations will be awarded during the conference by a jury comprising members of the ASI executive committee and the session chairs.

Lunch Break, 13:20 - 14:20

Excursion: Tour to Telegrafenberg, 14:20 – 15:20

Meeting in front of Building H

14:20 – 15:20

Leader: Diedrich Fritzsche, Potsdam

Die Führung ist ein etwa einstündiger Spaziergang über den historisch bedeutsamen Telegrafenberg. Dieser Park beherbergt eine einzigartige Mischung verschiedener wissenschaftlicher Gebäude, deren Bau um 1870 begonnen wurde. Namens gebend ist eine optische Telegrafestation, die Berlin und Koblenz verbinden sollte. Die wissenschaftlichen Aktivitäten haben auf dem Telegrafenberg eine lange Tradition, insbesondere in den Bereichen Astrophysik, Geodäsie und Erforschung des Schwerefeldes der Erde. Im astrophysikalischen Observatorium wurde 1881 von Albert Michelson sein berühmtes Experiment durchgeführt. Das Sonnenobservatorium wurde 1924 fertig gestellt, um Einsteins Relativitätstheorie zu belegen. 1890 wurde das Königlich-Preußische Institut für Geodäsie nach Potsdam verlegt und das meteorologisch-geomagnetische Observatorium gegründet, das damals zahlreiche Expeditionen in die Arktis und Antarktis logistisch unterstützte.

It will be an easy walk through the Telegrafenberg area for about one hour of duration. The park landscape and architecture of a unique collection of scientific facilities whose construction began in the 1870's and continue up to today will be the topics of this tour. The Telegrafenberg is named after a station of an optical telegraph line built to link Berlin with Koblenz via Potsdam. Research has a long tradition here and is characterized by activities in the fields of astrophysics, geodetic surveying and gravitation research. When the first special astrophysical observatory in the world was founded in 1874 it was the birth of the research site on Telegrafenberg hill. In 1924 the solar observatory in the Einstein tower on Telegrafenberg hill was completed which was to provide evidence for the predicted effects resulting from Einstein's general theory of relativity.

Poster Presentations, Oct. 5–7, 2009

Foyer Building H

I.K.U. Adam, G. Gebauer

Wie hoch ist der Gewinn an organischem C und N durch mykoheterotrophe Pflanzen in 1 ha Buchenwald? - Von der relativen Isotopenhäufigkeit zu absoluten Zahlen

B. Aichner, U., H. Wilkes

$\delta^{13}\text{C}$ and δD values of lipid biomarkers in aquatic macrophytes, surface sediments and in a sediment core from Koucha Lake (Eastern Tibetan Plateau)

E. Annweiler¹, A. Probst¹, Th. Huber

Extraktion von Vanillin aus Lebensmitteln und Analyse mittels GC-C-IRMS

G. Battipaglia, P.Linke, V. De Micco, W.A Brand, G. Aronne, P. Cherubini

Assessing climate sensitivity of mediterranean plants by combining dendro-ecology, isotope composition and QWA

M.E. Böttcher, A.M. Al-Raei, M. Segl, N. Volkenborn

Seasonal impact of logworms (*Arenicola Marina*) on biogeochemical processes and carbon isotope geochemistry of intertidal surface sediments: Results from an in-situ experiment

W.A. Brand, H. Geilmann, E.R. Crosson, C.W. Reila

Cavity ringdown for H_2O isotopic analysis; The contamination issue

J. Bünning, V. Winde, O. Dellwig, U. Struck, N. Kowalski, M. Labrenz, M.E. Böttcher

Stable isotope and trace element partitioning in a recent carbonate-precipitating stream, Rügen Island

M. Czymzik, A. Brauer, B. Plessen, P. Dulski, U. von Grafenstein

Stable oxygen and carbon isotope data of detrital carbonates in annually laminated sediment from Lake Ammersee (Southern Germany) as a proxy for flood events

F. Fernandoy¹, H. Meyer¹, C. Olivares² and M. Cartró³

Stable water isotope characteristics of the recent hydrological system of the northern antarctic peninsula - implications for ice and firn core interpretation

C. Frey, C. Fellerhoff, F. Korth, I. Liskow, M. Voß

Uptake of dissolved organic nitrogen of plankton communities in the Baltic Sea

R. van Geldern, V. Becker and A. Myrntinen, J.A.C. Barth

A method for the simultaneous analysis of DIC concentration and carbon isotopic composition in continuous flow mode

C. Heide, M. Tichomirowa

Confirmation of the incorporation of dissolved molecular oxygen into sulphate during abiotic pyrite oxidation experiments

K. Isensee, S. Hille, O. Dellwig, R. Blake, M.E. Böttcher

Zur Sauerstoff-Isotopen Biogeochemie von Phosphat in brackischen Nebenmeeren: I. Das Schwarze Meer

K. Isensee, S. Hille, M. Nausch, O. Dellwig, R. Blake, M.E. Böttcher

Zur Sauerstoff-Isotopen Biogeochemie von Phosphat in brackischen Nebenmeeren: II. Die Ostsee

Z.E. Kayler, E.W. Sulzman, A.C. Mix, B.J. Bond

Steady-State and non steady-state of soil respired $\delta^{13}\text{C}\text{O}_2$ in a douglas fir forest, Oregon, USA

K. Knöller, A. Seebach and I. Baneschi

Are meromictic lakes potential bioreactors for natural attenuation in mining landscapes?

P. Königer, S. Möhring, A. Mulch, H. Wiederhold

Stabil-Isotopenuntersuchungen in der ungesättigten Zone zur Bestimmung der Grundwasserneubildung auf der Nordseeinsel Borkum

J. Köpp, G. Gebauer

Produktion und Konsumption der klimarelevanten Spurengase N_2O und CH_4 in einem sauren Niedermoor

R. Langel, L. Szwec, L. Schwendenmann, J. Dyckmans

Methodische Aspekte bei der Messung von $\delta^{13}\text{C}$ in DOC am LC IsoLink

T.C.W. Moerdijk-Poortvliet, H.T.S. Boschker, P. van Breugel, M. Houtekamer, J.J. Middelburg

Analysis of carbohydrate concentrations and stable carbon-isotope ratios in natural and ^{13}C enriched samples using liquid chromatography coupled to isotope ratio mass spectrometry (LC-IRMS)

Y. Oelmann, U. Hensler, C. Valarezo, Wolfgang Wilcke

The vertical distribution of $\delta^{13}\text{C}$ values to predict mineralized N in soil in a tropical montane rain forest in Ecuador

J. Sommer, K.W. Dixon, M.I. Bidartondo, G. Gebauer

Myco-heterotrophy in a selection of Western Australian orchids

M. Stöckel, V. Merckx, G. Gebauer

C and N isotope signatures of myco-Heterotrophic plants associated with arbuscular mycorrhiza from a tropical rain forest - A new facet of nutrient exchange between fungi and plants

R. Well, H. Flessa

Can isotopic signatures of soil-emitted N_2O be used as indicators of N_2 -fluxes?

S. Wetterich, H. Meyer, B. Plessen, L. Schirrmeister

Stable isotopes in (sub-)arctic freshwaters and ostracod calcite