
EGU 2008 Meeting Programme

Isotopes in Geosciences: Instrumentation and Applications

Monday

IG1 Stable Isotopes in Geosciences - Open Session (include special attention to Mass-Independent Fractionation)

Convener: De Groot, P.
Co-Convener(s): Bojar, A., Thiemens, M., Pack, A., Halas, S., Kerstel, E., Revesz, K.
Lecture Room 35
Chairperson: BOJAR, A-V.

8:30–8:45; EGU2008-A-07596; IG1-1MO1O-001

Pack, A.

Determination of D17O by fluorination of silicates without cryogenic separation of NF₃

8:45–9:00; EGU2008-A-01291; IG1-1MO1O-002

Peres, P.; de Chambost, E.; Schuhmacher, M.

CAMECA IMS 7f-GEO: specialized SIMS tool for Geosciences

9:00–9:15; EGU2008-A-10462; IG1-1MO1O-003

Halas, S.; Pelc, A.

New IRMS method of precise d37Cl measurement

9:15–9:30; EGU2008-A-07117; IG1-1MO1O-004

Dyroff, C.; **Zahn, A.;** Werle, P.; Freude, W.

Design and ground-based testing of a tunable diode laser spectrometer for airborne water isotopic ratio measurements

9:30–9:45; EGU2008-A-04814; IG1-1MO1O-005

Hastings, M.G.; Alexander, B.

The global distribution of the oxygen isotopic composition in nitrate and sulfate

9:45–10:00; EGU2008-A-06400; IG1-1MO1O-006

Sachse, D.; Sachs, J.P.; Gleixner, G.; Buchmann, N.; Kahmen, A.

Source-water independent processes influence the hydrogen isotopic composition of lipid biomarkers - Two examples: salinity and leaf water evapotranspiration

10:00 COFFEE BREAK

Chairperson: THIEMENS, M.

10:30–10:45; EGU2008-A-10640; IG1-1MO2O-001

Bojar, A.-V.; Halas, S.; Bojar, H.-P.; Saran, J.

Regional implications of a Miocene acid sulphate alteration, Austria : insights from the H, O, S and K-Ar isotopic record

10:45–11:00; EGU2008-A-02170; IG1-1MO2O-002

Hiraki, Y.; Kasai, Y.; **Ozima, M.;** Seta, T.; Seki, K.; Yamada, A.

High MIF atomic oxygen ions in Earth Wind (EW)

11:00–11:15; EGU2008-A-02738; IG1-1MO2O-003

Miller, M. F.

Oxygen three-isotope distributions in terrestrial carbonates, silicates and waters – Insights and inferences from high precision measurements and a 'mass-independent' fractionation process

11:15–11:30; EGU2008-A-09265; IG1-1MO2O-004

Pickering, J.C.; Lyons, J.R.; Stark, G.; Blackie, D.; Blackwell-Whitehead, R.

Laboratory measurements of SO₂ isotopologues for studies of the ancient Earth atmosphere, in particular for understanding the cause of Sulphur Mass Independent Fractionation.

11:30–11:45; EGU2008-A-10541; IG1-1MO2O-005

Thiemens, M.

New Mass Independent Isotopic Measurements and the Origin of the Solar System

11:45–12:00; EGU2008-A-11568; IG1-1MO2O-006

Cisneros-Dozal, M.; Heikoop, J.; Fessenden, J.; Fawcett, P.; Kawka, O.; Sachs, J.

Glacial-Interglacial climatic shifts during the mid-Pleistocene in northern New Mexico, USA: inferences from $\delta^{13}\text{C}$ and δD analyses of lacustrine organic matter

12:00 LUNCH BREAK

Chairperson: HALAS, S.

13:30–13:45; EGU2008-A-06032; IG1-1MO3O-001

Kolodny, Y.; Rosenfeld, D.; Calvo, R.

Stronger tropical cyclones in the warmer geological past ; a possible explanation for abnormally low $\delta^{18}\text{O}$ rain.

13:45–14:00; EGU2008-A-03915; IG1-1MO3O-002

Alexandre, A.; Crespin, J.; Sonzogni, C.; Hilbert, D

Oxygen isotope composition of phytoliths from tropical forests: towards a new paleo-climate tool

14:00–14:15; EGU2008-A-03627; IG1-1MO3O-003

de Groot, P.

Stable isotope thermometry and climatology versus traceability – An unfortunate situation?

14:15 END OF SESSION

IG1 Stable Isotopes in Geosciences - Open Session (include special attention to Mass-Independent Fractionation) – Posters

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Co-Convener(s): Bojar, A., Thiemens, M., Pack, A., Halas, S., Kerstel, E., Revesz, K.

Display Time: Monday, 08:00–19:30

Authors in Attendance: Monday, 17:30–19:00

Poster Area Hall A

Chairperson: DE GROOT, P.

A0340; EGU2008-A-00643; IG1-1MO5P-0340

Brenner, I.B

Developments of plasma mass spectrometry in geoanalysis

A0341; EGU2008-A-08981; IG1-1MO5P-0341

Blessing, M.; Jochmann, M. A.; Haderlein, S. B.; Schmidt, T. C.

Compound-specific isotope analysis at trace concentrations: evaluation of a large volume injection (LVI) based method

A0342; EGU2008-A-07132; IG1-1MO5P-0342
Tuzson, B.; Mohn, J.; Zeeman, M. J.; Werner, R. A.; Eugster, W.; Emmenegger, L.
QCLAS. A compact isotopologue specific analyzer for atmospheric CO₂

A0343; EGU2008-A-07472; IG1-1MO5P-0343
Waechter, H.; **Mohn, J.**; Tuzson, B.; Emmenegger, L.; Sigrist, M.W.
Nitrous oxide isotopomer determination with a quantum cascade laser based spectrometer

A0344; EGU2008-A-03028; IG1-1MO5P-0344
Landais, A.; Barkan, E.; Luz, B.
The record of d18O and 17O-excess in ice from Vostok Antarctica during the last 150,000 years

A0345; EGU2008-A-09551; IG1-1MO5P-0345
Sonke, J.E.
Mass independent fractionation of mercury isotopes.

A0346; EGU2008-A-10763; IG1-1MO5P-0346
Petrov, O.V.; Malitch, K.N.; Shevchenko, S.S.; Tuganova, E.V.; Kapitonov, I.N.; Prilepsky, E.B.
Isotope-geochemical criteria in exploration for Cu-Ni sulphide ores associated with the Noril'sk-type intrusions (Russia): constraints from S and Cu isotope data

A0347; EGU2008-A-00608; IG1-1MO5P-0347
Piotrowska, N.; Pazdur, A.; Halas, S.; Rutkowski, J.
Carbon and oxygen isotope record in carbonate sediments of Lake Wigry (NE Poland)

A0348; EGU2008-A-07612; IG1-1MO5P-0348
Fallas Dotti, M.; Van molle, M.
Describing vertical paths of carbon stable isotopes for soils of Costa Rica

A0349; EGU2008-A-02911; IG1-1MO5P-0349
Aichner, B.; Herzsuh, U.; Wilkes, H.
Carbon and hydrogen isotope analysis of n-alkanes in aquatic macrophytes and recent lake sediments from the Eastern and Central Tibetan Plateau

A0350; EGU2008-A-02301; IG1-1MO5P-0350
Schwab, V.F.; Sachs, J.P.
Alkenone purification for hydrogen isotope analysis by HPLC-MS: implications for paleoenvironmental reconstruction

A0351; EGU2008-A-07834; IG1-1MO5P-0351
Dublyansky, Y.; Spoetl, C.
Carbonate bedrock alteration during low-temperature hydrothermal karstification: a potential tool for hydrogeological paleothermometry using oxygen isotopes

A0352; EGU2008-A-03031; IG1-1MO5P-0352
Capron, E.; Landais, A.; Masson-Delmotte, V.; Barnola, J.-M.; Mulvaney, R.
Isotopic composition of the air trapped in the Berkner Island ice core (d15N, d18O_{atm}, d40Ar) over the last glacial period and the deglaciation (50-6 kyrs)

A0353; EGU2008-A-04437; IG1-1MO5P-0353
Onac, B. P.; Darmiceanu, V.; Sumrall, J.; Tamas, T.
Sulfur and oxygen isotope constraints on the genesis of gypsum in caves from Cerna Valley (Romania)

A0354; EGU2008-A-05301; IG1-1MO5P-0354
Mandic, M.; Takac, D.; Lutz, H. O.; **Roller-Lutz, Z.**
Stable isotope composition of precipitation in Croatia

A0355; EGU2008-A-06113; IG1-1MO5P-0355
Aubert, A.; **Lazareth, C.E.**; Cabioch, G.
Sclerochronological and $\delta^{18}\text{O}$ study of the giant clam Hippopus hippopus shell. Application to Sea Surface Temperatures reconstructions

IG3 New analytical methods and experimental approach in isotope geochemistry (co-listed in GMPV, co-sponsored by EAG)

Convener: Rouxel, O.
Co-Convener(s): Carignan, J., Roskosz, M., Vigier, N., Williams, H.
Lecture Room 35
Chairperson: ROUXEL, O.

14:15–14:30; EGU2008-A-01847; IG3-1MO3O-004
Meibom, A.
The NanoSIMS Technique and Applications in Cosmochemistry and Biomineralization (solicited)

14:30–14:45; EGU2008-A-03308; IG3-1MO3O-005
Rollion-Bard, C.; Vigier, N.; Spezzaferri, S.
In situ measurements of calcium isotopes by ion microprobe in carbonates and application to foraminifera

14:45–15:00; EGU2008-A-08663; IG3-1MO3O-006
Horn, I.; **von Blankenburg, F.**; Chmeleff, J.; Steinhofel, G
New developments for the in situ-analysis of non-traditional isotopes (solicited)

15:00 COFFEE BREAK

Chairperson: CARIGNAN, J.

15:30–15:45; EGU2008-A-11174; IG3-1MO4O-001
Rouxel, O.; Toner, B.M.; Craddock, P.; Bach, W.; Edwards, K.J.
In situ analysis of Fe and S-isotope composition of hydrothermal chimneys by laser ablation MC-ICPMS

15:45–16:00; EGU2008-A-10074; IG3-1MO4O-002
Kavner, A.; Black, J.
Electrochemical fractionation of transition metal stable isotopes (solicited)

16:00–16:15; EGU2008-A-00499; IG3-1MO4O-003
Asael, D.; Matthews, A.; Oszczepalski, S.; Bar-Matthews, M.; Halicz, L.
Fluid speciation controls of low-temperature copper isotope fractionation

16:15–16:30; EGU2008-A-10660; IG3-1MO4O-004
Hintelmann, H.; Foucher, D
The need for reference materials certified for Hg isotope ratios

16:30–16:45; EGU2008-A-02507; IG3-1MO4O-005
Epov, V.N.; Rodriguez-Gonzalez, P.; Sonke, J.E.; Tessier, E.; Amouroux, D.; Maurice Bourgoïn, L.; Estrade, N.; Carignan, J.; Donard, O.F.X
Measurement of Hg isotopic ratios on molecular level using GC-MC-ICP-MS hyphenation

16:45 END OF SESSION

IG3 New analytical methods and experimental approach in isotope geochemistry (co-listed in GMPV, co-sponsored by EAG) – Posters

Convener: Rouxel, O.

Co-Convener(s): Carignan, J., Roskosz, M., Vigier, N., Williams, H.

Display Time: Monday, 08:00–19:30

Authors in Attendance: Monday, 17:30–19:00

Poster Area Hall A

Chairperson: N.N.

A0356; EGU2008-A-10347; IG3-1MO5P-0356

Polyakov, V.

Equilibrium iron isotope fractionation at core-mantle boundary conditions

A0357; EGU2008-A-08894; IG3-1MO5P-0357

Meisel, T.

Can we certify Isotope Reference materials?

A0358; EGU2008-A-01499; IG3-1MO5P-0358

Richter, S.; Alonso-Munoz, A.; Eykens, R.; Kuehn, H.; Verbruggen, A.; Wellum, R.; Aregbe, Y.

Preparation and Application of new Synthetic Uranium Isotopic Reference Materials at IRMM (cancelled)

A0359; EGU2008-A-01899; IG3-1MO5P-0359

Carignan, J.; Estrade, N.; Donard, O.F.X.

Measuring Hg isotopes in bio-geo-environmental reference materials

A0360; EGU2008-A-10117; IG3-1MO5P-0360

Sonke, J.E.; Zambardi, T.; Toutain, J-P.

Indirect gold trap – MC-ICP-MS coupling for Hg stable isotope analysis using a syringe injection interface.

A0361; EGU2008-A-03906; IG3-1MO5P-0361

Zambardi, T.; Sonke, J.E.; Toutain, J.P.; Sortino, F.; Shinohara, H.

Mercury emissions and stable isotopic compositions at Vulcano Island (Italy)

A0362; EGU2008-A-04770; IG3-1MO5P-0362

Estrade, N.; Carignan, J.; Jorand, F.; Donard, O.F.X.

Hg isotope fractionation during abiotic reduction by the hydroxysulfate green rust 2

A0363; EGU2008-A-12035; IG3-1MO5P-0363

Escoube, R.; Rouxel, O.; Donard, O.

Measurement of Germanium isotope composition in marine samples by hydride generation coupled to MC-ICP-MS

A0364; EGU2008-A-08852; IG3-1MO5P-0364

Bolou Bi, E.B.; Poszwa, A.; Vigier, N.

Experimental determination of magnesium isotope fractionation during higher plant growth

A0365; EGU2008-A-03637; IG3-1MO5P-0365

Holmstrand, H.; Mandalakis, M.; Zencak, Z.; Gadomski, D.; Andersson, P.; **Gustafsson, Ö.**

Compound-specific chlorine and bromine-isotope analysis in organohalogenes from the ambient environment

A0366; EGU2008-A-03210; IG3-1MO5P-0366

Ricard, E. ; Gurlan, A. T.; Peycheran, C.; Prinzhofer, A.; Donard, O.

New approach using femtosecond laser ablation coupled to ICPS for direct determination of trace elements and lead isotope ratios in crude oils and its fractions

A0367; EGU2008-A-03448; IG3-1MO5P-0367

Granet, M.; Caussignac, C.; Chartier, F.; Isnard, H.; Tran, B.

Analyses of Cs isotopes by MC-ICP-MS : suppression of Ba isobaric interferences using N₂O as a reactant gas in the collision-reaction cell

A0368; EGU2008-A-10982; IG3-1MO5P-0368

Wills, J. D.; McSheehy, S.; Oki, T.

High throughput analysis using robust Q-ICP-MS coupled with an advanced sample handling system

A0369; EGU2008-A-07174; IG3-1MO5P-0369

White, N.; Young, S.; Bailey, E.; Breward, N.; Tye, A.

Pb reactivity in soils using 204Pb stable isotope dilution

Tuesday

IG5 Stable Isotopes in Atmospheric Research (co-listed in AS)

Convener: Koppmann, R.

Co-Convener(s): Kiendler-Scharr, A., Röckmann, T.

Lecture Room 35

Chairperson: KOPPMANN, R.

15:30–16:00; EGU2008-A-01769; IG5-1TU4O-001

Savarino, J.; Morin, S.; Frey, M.

Atmospheric nitrate and its isotopic composition (solicited)

16:00–16:15; EGU2008-A-09447; IG5-1TU4O-002

Winterholler, B.; Huth, J.; Andreae, M.O.; Hoppe, P.

High resolution sulfur isotope depth profiling of aged sea salt particles - Understanding the importance of reactions at interfaces as a source of sulfate formation in sea-salt particles

16:15–16:30; EGU2008-A-01168; IG5-1TU4O-003

Kiendler-Scharr, A.; Fisseha, R.; Spahn, H.; Hohaus, T.; Tillmann, R.; Wegener, R.; Wahner, A.

Studies of the kinetic Isotope Effect during SOA Formation from α -Pinene Oxidation

16:30–16:45; EGU2008-A-02541; IG5-1TU4O-004

Spahn, H.; Wegener, R.; Wahner, A.; Krebsbach, M.; Knieling, P.; Heuser, H. P.; Koppmann, R.

Height-resolved stable Carbon Isotope Ratios of VOC sampled aboard a Zeppelin

16:45–17:00; EGU2008-A-06765; IG5-1TU4O-005

Houweling, S.; van der Werf, G.R.; Klein Goldewijk, K.; Roockmann, T.; Aben, I.

Early anthropogenic CH₄ emissions and the variation of CH₄ and 13CH₄ over the last millennium

17:00 COFFEE BREAK

Chairperson: RÖCKMANN, T.

17:30–17:45; EGU2008-A-07149; IG5-1TU5O-001

Assonov, S.S.; Brenninkmeijer, C.A.M.; Koepfel, C.; Schuck, T.; Zahn, A.; Taylor, P.; Berglund, M.

CO₂ isotopic composition in the upper troposphere: the project CARIBIC

17:45–18:15; EGU2008-A-09970; IG5-1TU5O-002

Johnson, M. S.; Nilsson, E.J.K.; Feilberg, K. L.; Walter, S.; Skov, H.; Wallington, T. J.; Röckmann, T.; Nielsen, C. J.

Experimental studies of deuterium propagation through the atmospheric photochemical series CH₄, CH₃O, HCHO, H₂ (solicited)

18:15–18:30; EGU2008-A-11006; IG5-1TU5O-003

Hoffmann, G.; Schmidt, G.

The water isotope signal from the upper troposphere: a model/data comparison

18:30–18:45; EGU2008-A-08327; IG5-1TU5O-004

Dupuy, E.; **Walker, K. A.;** Urban, J.; Boone, C. D.; Kasis, Y.; Baron, P.; Bernath, P. F.; Murtagh, D. P.

HDO measurements from ACE-FTS and Odin/SMR: Validation comparisons

18:45–19:00; EGU2008-A-02086; IG5-1TU5O-005
Steinwagner, J.; Stiller, G.P.; Glatthor, N.; Höpfner, M.; von
Clarmann, T.; Röckmann, T.
HDO measurements with MIPAS

19:00 END OF SESSION

IG5 Stable Isotopes in Atmospheric Research (co-listed in AS) – Posters

Convener: Koppmann, R.
Co-Convener(s): Kiendler-Scharr, A., Röckmann, T.
Display Time: Tuesday, 08:00–19:30
Authors in Attendance: Tuesday, 13:30–15:00
Poster Area Hall A
Chairperson: N.N.

A0392; EGU2008-A-01853; IG5-1TU3P-0392
Moukhtar, S.; Klimkina, A.; Irei, S.; Huang, L.; Rudolph, J.
Study of secondary particulate matter in the atmosphere via
stable carbon isotope measurements

A0393; EGU2008-A-05287; IG5-1TU3P-0393
Iannone, R.; **Moukhtar, S.;** Koppmann, R.; Rudolph, J.
Stable Carbon Isotope Ratios, Mixing Ratios, and Average
Photochemical Ages of Several Light VOCs including
Isoprene, Benzene, and Toluene during May-August, 2005,
Measured near Jülich, Germany

A0394; EGU2008-A-05295; IG5-1TU3P-0394
Iannone, R.; **Moukhtar, S.;** Koppmann, R.; Rudolph, J.
Stable Carbon Kinetic Isotope Effects of the Reactions
of Isoprene, Methacrolein, and Methyl Vinyl Ketone with
Ozone in the Gas Phase

A0395; EGU2008-A-09576; IG5-1TU3P-0395
Gocht, T.; Herklotz, I.; Barth, J.; Grathwohl, P.
Passive samplers as accumulation media for compound spe-
cific stable isotope analysis of persistent organic pollutants

A0396; EGU2008-A-08031; IG5-1TU3P-0396
Zuiderweg, A.; Holzinger, R.; Röckmann, T.; Brenninkmei-
jer, C.
An automated system for NMHC isotope analysis on trace
gases from ambient and CARIBIC samples

A0397; EGU2008-A-03992; IG5-1TU3P-0397
Vigano, I.; Holzinger, R.; Röckmann, T.; van Dijk, A.
The isotope signature of methane emitted from plant matter
upon irradiation with UV light

A0398; EGU2008-A-03177; IG5-1TU3P-0398
Bock, M.; Behrens, M.; Schmitt, J.; Möller, L.; Fischer, H.
A high precision GC-P-irmMS technique to analyse
dD(CH₄-) in air entrapped in polar ice cores

A0399; EGU2008-A-07943; IG5-1TU3P-0399
Sapart, C.J.; Roeckmann, T.; Brass, M.; van der Veen, C.;
Vigano, I.
A dry extraction method for isotope analysis of atmospheric
methane and nitrous oxide from ice cores

A0400; EGU2008-A-07609; IG5-1TU3P-0400
Yan, N.; Morin, S.; Bekki, S.; Savarino, J.
Simulation of the isotope anomaly ($\Delta^{17}\text{O}$) of
NO_x and nitrate during ozone depletion events in the Arctic
boundary layer after polar sunrise

A0401; EGU2008-A-06574; IG5-1TU3P-0401
Miller, M. F.
Oxygen three-isotope distributions in tropospheric and
stratospheric CO₂ – potential inferences from high precision
isotope measurements of carbonate decomposition

A0402; EGU2008-A-03239; IG5-1TU3P-0402
Chrobry, A.; **Jelen, D.;** Kuc, T.; Necki, J.; Rozanski, K.;
Zimnoch, M.
Assessing diurnal changes of carbon budget in the ur-
ban atmosphere: combined use of CO₂, ¹³CO₂/¹²CO₂,
¹²C¹⁸O/¹⁶O/¹²C¹⁶O₂ and ¹⁴CO₂/¹²CO₂ mixing ratios

A0403; EGU2008-A-08329; IG5-1TU3P-0403
Pieterse, G.; Krol, M.C.; Roeckmann, T.
Using functional group analysis to derive a condensed
photochemical oxidation scheme for the isotope effects in
the production of H₂ from deuterated methane and VOC's

A0404; EGU2008-A-08459; IG5-1TU3P-0404
Pieterse, G.; Krol, M.C.; Roeckmann, T.
Modeling global H₂ and its stable isotope HD with the
global TM5 model using a new condensed photochemical
oxidation scheme for deuterated methane and VOC's

A0405; EGU2008-A-09799; IG5-1TU3P-0405
Nilsson, EJK; Andersen, V. F.; Skov, H.; Walter, S.; Röck-
mann, T.; Johnson, M. S.
Deuterium fractionation in formaldehyde photolysis: The
effects of wavelength, temperature and pressure.

A0406; EGU2008-A-10609; IG5-1TU3P-0406
Röckmann for the SAPHIR Team, T.; SAPHIR Team
Photolysis of formaldehyde - effects on hydrogen isotopes

A0407; EGU2008-A-04991; IG5-1TU3P-0407
Danielache, S.; Eskeber, C; Johnson, M; Ueno, Y;
Yoshida, N
High Precision Spectroscopy of ³²S, ³³S and ³⁴S Sulfur
Dioxide: Ultraviolet Absorption Cross Sections and Frac-
tionation Constants

A0408; EGU2008-A-06058; IG5-1TU3P-0408
Morin, S.; Savarino, J.; Frey, M.M.; Domine, F.; Mar-
tins, J.M.F; Bekki, S.; Bottenheim, J.W.
Isotopic constraints on the budget of atmospheric nitrate in
the Arctic