

Session ID	min.	talk #	Presenting Author	Title
Day 1 Nov. 13th AM (Venue open at 8:30)				
1) Opening Session 8:45 - 9:25				
D1-1	15		Yoshida and Ueno	
D1-1	25	INV-01	John M. Eiler	The radical advance of the isotomics of natural materials
2) Fundamentals of Isotope Fractionation 9:25-10:00 (chaired by Ueno)				
D1-2	18	O-01	Pierre Cartigny	Evaporation-induced 'anomalous' isotope fractionation factors do not require high gas pressures
D1-2	18	O-02	Francois Robert	Mass-Independent Isotope Fractionation in Plasma: Theory and Experiments
coffee break (20 min)				
3) Isotopologues in Atmosphere: CH ₄ , CO and CO ₂ 10:20-11:40 (chaired by Boering and Kasai)				
D1-3	25	INV-02	Malavika Sivan	Clumped isotopic composition of atmospheric methane: advancements in measurements and modelling
D1-3	18	O-03	Matthew S. Johnson	Tropospheric chlorine from mineral dust and sea spray aerosol measured using δ ¹³ C-CO shifts understanding of methane sources
D1-3	18	O-04	Thomas Röckmann	Triple oxygen isotope composition of CO ₂ in the upper troposphere and stratosphere
D1-3	18	O-05	Yasuko Kasai	Overview of isotopologues observation from Space with satellite
Lunch break (80 min)				
Day 1 Nov. 13th PM				
4) Isotopologues in Atmosphere: Ozone, MIF and Δ ¹⁷ O 13:00-14:30 (chaired by Bao and Röckmann)				
D1-4	18	O-06	Kristie A Boering	Mass-independent isotope effects in ozone formation: A brief retrospective and some new data
D1-4	18	O-07	Mao-Chang Liang	Novel triple-oxygen isotope study indicates unprecedented ozone-particulate interaction pathways in atmospheric pollution chemistry
D1-4	18	O-08	Lei Geng	Ozone isotope variability at the Tibetan Plateau and implication for stratospheric ozone intrusion
D1-4	18	O-09	Pallab Roy	Triple oxygen isotope fractionation during rapid dehydration of amphibole and serpentine
D1-4	18	O-10	Shohei Hattori	Large Δ ¹⁷ O in Atmospheric Methanesulfonate (MSA) Predicted by Δ ¹⁷ O(SO ₄ ²⁻) in Antarctic Atmosphere, Snow, and Ice Cores
coffee break (20 min)				
5a) Novel Methodology 1 : Application of Isotopologue Measurement 14:50-16:30 (chaired by Kohl and Ono)				
D1-5a	25	INV-03	Elliott Mueller	Opening isotopic windows into the rumen microbiome with Orbitrap MS
D1-5a	18	O-11	Mi-Ling Li	Developing compound-specific isotope analysis methods for per- and polyfluoroalkyl substances with Orbitrap mass spectrometry
D1-5a	18	O-12	Naizhong Zhang	Rapid and high-sensitivity analysis of methane clumped isotopes (Δ ¹³ CH ₃ D and Δ ¹² CH ₂ D ₂) using mid-infrared laser spectroscopy
D1-5a	18	O-13	Matthieu Clog	Leveraging HR-IRMS for precise Δ ¹⁷ O of carbonates in CM chondrites
D1-5a	18	O-14	David Bajnai	Two years of triple oxygen isotope measurements incarbonates using laser spectroscopy: challenges,achievements, and future directions
P1) Poster session 16:30 - 18:00				
D1-P	90	P01-18	Core time for 18 Poster Presenters	
Day 2 Nov. 14th AM (Venue open at 8:30)				
5b) Novel Methodology 2: Technical Development 8:50-10:10 (chaired by Kohl and Bao)				
D2-5b	25	INV-04	Cajetan Neubauer	How low can we go? Towards isotopocule analysis with picomolar sensitivity for hominin paleodiet studies
D2-5b	18	INV-05 (G)	Andreas Hilkert	High accuracy isotope analysis with the Orbitrap Exploris MS
D2-5b	18	O-15	Zhao Wei	Vertical distribution of phosphate oxygen isotopes during algal blooms in thermally stratified reservoirs
D2-5b	18	O-16	Gabriella M. Weiss	Measuring intramolecular carbon isotope distributions in amino acids using Fourier transform mass spectrometry
coffee break (20 min)				
5b) continued 10:30-12:00				
D2-5b	18	INV-06 (G)	David Nelson	Recent Progress in Isotope Ratio Laser Spectroscopy (IRLS) of Clumped CO ₂ and of Δ ¹⁷ O in CO ₂
D2-5b	18	O-17	Natalia P. Ivleva	Stable Isotope Raman Microspectroscopy as Novel Approach for Analysis of Microbial Degradation of Microplastics
D2-5b	18	O-18	Sarah P. Rockel	2D-LC-IRMS – A journey to more possibilities
D2-5b	18	O-19	Jakub Surma	High-resolution mass spectrometry of SO ₂ F ₂ : Obtaining multiple sulfur, oxygen, and doubly substituted ³⁴ S- ¹⁸ O isotopic signatures from sulfate
D2-5b	18	O-20	Margot Sanchez	A new paradigm for fast single-session 2H and ¹³ C IRM NMR
Lunch break (90 min)				
Day 2 Nov. 14th PM				
6) Isotopes in Mars and Venus 13:30-14:50 (chaired by Johnson and Ueno)				
D2-6	25	INV-07	Amy Hofmann	The Planetary Isotopologue Frontier: Recent Discoveries from Laboratory, Rover, and Telescopic Observations from across the Solar System
D2-6	18	O-21	Yuichiro Ueno	Strong ¹³ C-depletion of CO and organic synthesis in Early Mars atmosphere
D2-6	18	O-22	Shohei Aoki	Isotopic compositions of Mars' atmosphere by remote-sensing observations: latest results and challenges
D2-6	18	O-23	Benjamin Normann Frandsen	Towards Understanding Isotopic Fractionation of Chemical Processes in the Venusian Atmosphere
P2) Poster session 15:00 - 16:30				
D2-P	90	P19-37	Core time for 18 Poster Presenters	

Banquet from 18:00 @ Shiodome City Center (41F Sky View Restaurant) *It takes 40 min from O-okayama to JR Shinbashi Station by train

Day 3 Nov. 15th AM (Venue open at 8:45)

7) 40th anniversary of N₂O isotopomer research 9:00-10:00 (chaired by Mohn and Toyoda)

D3-7	24	O-24	Intrc	Toyoda & Mohn	40 years of N ₂ O isotopomer research: Advances in analytics and exemplary applications
D3-7	18	O-25		Peter M. Homyak	Drought, wildfires, and "fire-loving" fungi effects on ecosystem nitrogen cycling: Understanding global change effects on ecosystem nitrogen losses using N ₂ O isotopologues
D3-7	18	O-26		Teresa Einzmann	Apparent isotope effects of N ₂ O during denitrification in two basins with differential mixing

coffee break (20 min)

7) continued 10:20-11:35

D3-7	18	O-27		Xia Liang	Unveiling the Hidden Dynamics: How Production and Consumption Pathways Influence N ₂ O Emissions in Estuaries
D3-7	18	O-28		Hanif Sulaiman	Insights from Isotopomers on the Pathways of Nitrous Oxide (N ₂ O) Accumulation in the Tropical Pacific Ocean
D3-7	18	O-29		Caroline Buchen-Tschiskale	Combining different methodological approaches for estimating N ₂ O processes and N ₂ O reduction
D3-7	18	O-30		Dominika Lewicka-Szczebak	Enhanced interpretation of N ₂ O isotopocule datasets with three dimensional modelling of simultaneous mixing and fractionation processes

Lunch break (90 min)

Day 3 Nov. 15th PM

P3) Poster session 13:00 - 14:00

D3-P 60 P38-51 Core time for 14 Poster Presenters

8) Biogeochemical Cycle uncovered by PSIA and Clumped 14:00-15:45 (chaired by Ono and Gilbert)

D3-8	25	INV-08		Katherine H. Freeman	Tracking Carbon Flow within Cells: a View from Biomarker Isotope Patterns
D3-8	18	O-31		Gerd Gleixner	Unveiling Carbon Allocation Dynamics in Mountain Grasslands Under Drought Stress Using Position-Specific Isotope Analysis
D3-8	18	O-32		Moritz F. Lehmann	A critical review on the use of stable N-isotopes to assess nitrogen elimination by denitrification and anammox in aquatic environments
D3-8	25	INV-09		Koudai Taguchi	13C-13C Fingerprint in Ethane
D3-8	18	O-33		Alexis Gilbert	Methanogenesis from hydrocarbons biodegradation: evidence from multiple isotopologue proxies in Tokamachi mud volcano, Japan

coffee break (20 min)

9) Metabolism & Medical Application of Isotopologue 16:05-17:25 (chaired by Gilbert and Yamada)

D3-9	25	INV-10		Illa TEA	Isotopologue biomarkers for cancer
D3-9	18	O-34		Yang XIA	Nitrogen nutrition effects on $\delta^{13}\text{C}$ of plant respired CO ₂ are mostly caused by concurrent changes in organic acid utilisation and remobilisation
D3-9	18	O-35		Christopher J. Butch	Pysotopic: A Machine Learning Approach for Chemi-Isotopologics
D3-9	18	O-36		Lubna Shawar	Site-Specific $\delta^{13}\text{C}$, D and Clumped Isotope Analysis of Steroidal Compounds for Forensic and Geochemical Applications

Closing 17:30

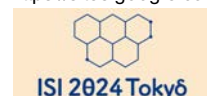
Happy hour (informal event) from 18:00 @ ELSI Agora, Science Tokyo

Poster Session @Digital Hall collaboration room (core time Day 1 16:30-)

D1-P	P-01	Mariusz Orion Jędrysek	$\delta^2\text{H}$, $\delta^{17}\text{O}$ and $\delta^{18}\text{O}$ variations in condensation water from CH ₄ combustion: isotopic tracers and non-mass dependent fractionation?
D1-P	P-02	Chih-Chang Chen	Revising the 13CKIEOH and DKIEOH values for the CH ₄ -OH Sink
D1-3	P-03	Thomas Röckmann	The use of $\delta^{13}\text{C}$ in CO to determine removal of CH ₄ by Cl radicals in the atmosphere
D1-P	P-04	Getachew Agmuas Adnewa	Clumped isotope measurements reveal aerobic oxidation of CH ₄ below the Greenland ice sheet
D1-P	P-05	Marie Kathrine Mikkelsen	Quantum chemical temperature dependent investigation of 13C, D and clumped kinetic isotope effects in the reactions of methane with OH and Cl from 200 to 500 K
D1-P	P-06	Carolina F. M. de Carvalho	Dark O ₂ production in subsurface environments
D1-P	P-07	Hatsumi Kikuchi	Quantitative analysis of the contribution of methane oxidation to stratospheric water vapor using delta-D derived from ACE-FTS satellite remote sensing
D1-P	P-08	Luisa Pennacchio	An RRKM and experiment-based model of isotopic fractionation in formaldehyde photolysis
D1-P	P-09	Zhuang Jiang	What's missing in current theory about O-MIF transfer in atmospheric reactive nitrogen: insight from atmospheric $\Delta^{17}\text{O}(\text{NO}_2)$ observations and modeling
D1-P	P-10	Tao Sun	Mass Law in Thermal Diffusion: Insights from Noble Gases
D1-P	P-11	Shohei Hattori, Zhao Wei	A 60-year atmospheric nitrate isotope record from the SE-Dome ice core
D1-P	P-12	Xiang Sun	S(IV) is oxidized by O ₂ , not NO ₂ , in microdroplets: Triple oxygen isotope evidence
D1-P	P-13	Huiming Bao	Origin of Sulfate in Post-Snowball-Earth Oceans: River Inputs vs. Shelf-Derived H ₂ S
D1-P	P-14	AI Kurihara	Increase of microbial fractionation factor at the end of Proterozoic inferred from high precision quadruple sulfur isotope analysis
D1-P	P-15	Yoshiaki Endo	A numerical analysis of $\Delta^{36}\text{S}/\Delta^{33}\text{S}$ dependence on definitions of sulfur mass-independent fractionation: Implication for modern stratospheric sulfates
D1-P	P-16	Fuyutsuki Seba	Model study of chamber photochemical experiments of Sulfur Mass-Independent Fractionation under reducing conditions
D1-P	P-17	Yuanzhe Li	Isotopic Investigation of Sulfur Dioxide (SO ₂) Photoexcitation
D1-P	P-18	Kazuki Kamezaki	Sulfur isotopes ratio of atmospheric carbonyl sulfide: reduction of required sample amount

ISI 2024 website:

<https://sites.google.com/view/isi2024tokyo/home>



Tokyo Institute of Technology (Tokyo Tech) has been merged with Tokyo Medical and Dental University (TMDU) to establish Institute of Science Tokyo on October 1st, 2024.



Poster Session @Digital Hall collaboration room (core time Day 2 15:00-)

D2-P	P-19	Heejeong Kim	Feedbacks of Emission Regulation on Atmospheric Nitrate Formation Chemistry in the Northeastern US: Insight from Oxygen Isotopes
D2-P	P-20	Chisato Yoshikawa	Nitrogen and oxygen isotope ratios of nitrate in the Pacific and Indian Oceans
D2-P	P-21	Kozue Nishida	Evaluation of clumped isotope thermometer using aragonitic bivalve shells reared at different temperatures and pH conditions
D2-P	P-22	Haoyi Yao	High-Precision Analysis of Clumped Isotopes $\Delta 47$ and $\Delta 48$ Using the Ultra and Kiel IV Instrument
D2-P	P-23	Kaiyu Wu	Separate Extraction of Strontium and Barium in Calcite and Dolomite in Carbonate Rocks
D2-P	P-24	Zhenfei Wang	Oxygen isotope analysis of nano-mole phosphate using PO ₃ - fragment in ESI-Orbitrap-MS
D2-P	P-25	Juyoung Park	Assessing stable isotope composition of per- and polyfluoroalkyl substances using electrospray ionization (ESI) Orbitrap mass spectrometry
D2-P	P-26	Kim Beomsik	The 13C-13C clumping and PSIA of Polycyclic Aromatic Hydrocarbon (PAH) using ESI/APCI-Orbitrap Mass Spectrometry
D2-P	P-27	Hao Xie	Position-specific Oxygen Isotope Analysis of Vanillin Using Orbitrap Mass Spectrometry
D2-P	P-28	Yihang Hong	Determination of the Oxygen Isotope Ratio in Methanesulfonate Using ESI-Orbitrap-MS
D2-P	P-29	Longchen Zhu	Isotope analysis of nano-mole perchlorate using ESI-Orbitrap-MS
D2-P	P-30	Felix Niemann	LC-IRMS Persulfate Oxidation: A Case Study of Neonicotinoid-Related Structures
D2-P	P-31	Kara Müller	Comparison of Stable Isotope Raman Microspectroscopy with Fatty Acid Methyl Ester (FAME)-GC-MS to Analyze Fatty Acid Deuteration in Bacteria
D2-P	P-32	Mhanna Tania	Position-Specific Isotopic Analysis (PSIA) by 13C NMR using the intramolecular referencing concept: application to fatty acid methyl esters
D2-P	P-33	A. Gilbert & Q. Liu	Exploring isotopic clumping in organic molecules using DFT calculations
D2-P	P-34	Marta Jakubiak	Triple $\delta 2H$, $\delta 17O$ and $\delta 18O$ analyses in water by means of the cavity ring-down laser spectroscopy (CRDS): role of salinity and FRAME applications.
D2-P	P-35	Wojciech Drzewicki	Comparative analysis of conductivity and triple isotopic ratios in contaminant water: a labor-atory simulation of brine presence in shallow groundwater systems.
D2-P	P-36	Habib Al-Ghoul	Ni-wall coated microreactor to Increase Sensitivity and Selectivity and to Facilitate GCxGC for Compound-specific Isotope Analysis (CSIA)
D2-P	P-37	Andreas Auernhammer	A precise and less hazardous method to determine chlorine stable isotope composition in aqueous samples

Poster Session @Digital Hall collaboration room (core time Day 3 13:00-)

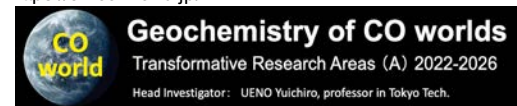
D3-P	P-38	Joachim Mohn	Laser spectroscopic analysis of N ₂ O isotopes: How to get trustworthy data?
D3-P	P-39	Sakae Toyoda	Vertical distribution of stratospheric N ₂ O isotopocules and its temporal variation over Japan and Antarctica
D3-P	P-40	Yuki Sato	Emission factors and isotopic characteristics of N ₂ O from diesel heavy-duty vehicles
D3-P	P-41	E. Harris & Lewicka-Szczebak	TimeFRAME - Time-resolved FRactionation And Mixing Evaluation based on isotope modeling of time series data
D3-P	P-42	S. Deb & Lewicka-Szczebak	Nitrogen Transformation in Groundwater: N ₂ O Isotopocules and Nitrate Isotope Studies for Evaluating Natural Fertilizer Efficiency
D3-P	P-43	Zhe Wang	Position-Specific Carbon Isotope Analyses of C16 n-alkane with Gas Chromatography-Orbitrap Mass Spectrometer
D3-P	P-44	Kazuya Yokota	Effect of analytical conditions on position-specific $\delta 13C$ of propane measured by a GC-pyrolysis-GC-IRMS method
D3-P	P-45	Martin Elsner	Position-Specific Isotope Analysis of Serine Using ESI-Orbitrap
D3-P	P-46	Yuta Sato	Intramolecular 13C distribution of microbial acetate from CO and CO ₂
D3-P	P-47	Yuanhan Zhu	Measurement of carbon isotopic compositions of volatile organic compounds in human breath
D3-P	P-48	Longfei Yu	Long-term inorganic N turnover pattern along a southern Chinese forested catchment
D3-P	P-49	Xinyu Jiang	Methane flux fingerprint on the bulk and in-situ sulfur isotope systematics of pyrite
D3-P	P-50	Yuri Kimura	Phylogenetically conservative isotope fractionation and milk effect in mammals, revealed from feeding-controlled experiments of stable carbon isotopes for paleontology
D3-P	P-51	Prasanta Sanyal	Assessing dietary habits through nitrogen and carbon stable isotope composition of human scalp hair and fingernails
D3-P	P-52	Ryoji Tanaka	Aqueous alteration on asteroid Ryugu: Insights from H-C-N-O and Mn-Cr isotope systematics

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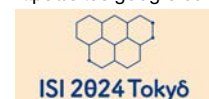
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