CURRICULUM VITAE

Joachim Jansen
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EDUCATION

05/2015-02/2020 **PhD in Geochemistry**
Stockholm University, Department of Geological Sciences
Thesis: Carbon trace gas dynamics in subarctic lakes
Supervised by Prof. Patrick Crill and Prof. Christoph Humborg

09/2011-08/2014 **MSc in Physics and Climate Science**
Utrecht University, Institute for Marine and Atmospheric Research Utrecht
Thesis: Isotopic analysis of subsea permafrost methane in the East Siberian Arctic
Supervised by Dr. Célia Sapart and Prof. Thomas Röckmann

09/2007-07/2011 **BSc in Liberal Arts and Sciences, major Earth Sciences**
University of Amsterdam, Institute for Interdisciplinary Studies
Thesis: The influence of grain size on hydrophobic organic coatings in dune sand
Supervised by Prof. Karsten Kalbitz and Dr. Sebastiaan de Vet

PROFESSIONAL EXPERIENCE

01/2021-present *PI* **Postdoctoral Fellow** | Dept. of Ecology and Genetics, Uppsala University, Sweden and Dépt. des Sciences Biologiques, Université du Québec à Montréal, Canada
Project: Understanding oxygen decline in northern lakes using big data (BigOx)
Supervision: Prof. Gesa Weyhenmeyer, Prof. Yves Prairie, Prof. Paul del Giorgio
- Collection and assimilation of long-term and high-frequency water quality data
- Data analysis: harmonization and statistical inference using R
- Publication of results in peer-reviewed journals

10/2019-08/2020 **Laboratory Technician** | Stable Isotope Lab, Stockholm University, Sweden
Projects: Swedish Polar Expeditions Petermann 2015 and Ryder 2019
- Operation and maintenance of isotope ratio mass spectrometers
- Laboratory analysis of water and air samples for ^{13}C and ^{18}O
- Data analysis: processing of measurements, calibration and quality control

05/2015-05/2019 **PhD Student** | Department of Geological Sciences, Stockholm University, Sweden
Project: Carbon trace gas dynamics in subarctic lakes
- Field work on lakes in northern Sweden, laboratory analysis of water samples
- Data processing and analysis using MATLAB, Excel, Python
- Publication of results in peer-reviewed journals

02/2015-05/2015 **Visiting Researcher** | National Center for Atmospheric Research, USA
07/2012-09/2012 Project: Microphysics of aerodynamic contrail formation processes
Supervised by Dr. Andrew Heymsfield
- Numerical modeling of cloud droplet growth in Fortran and IDL
- Publication of results in peer-reviewed journals

08/2013-10/2013 **Flight Technician** | NCAR/UCAR Earth Observing Laboratory, USA
Project: Instrument Development and Education in Airborne Science (IDEAS-4)
- Operation of a Picarro laser spectrometer onboard the HIAPER research aircraft

SKILLS and QUALIFICATIONS

Programming	R (2 years), Python (3 years), MATLAB (4 years), IDL (4 years), ArcGIS (1 year), ISODAT (2 years), Excel (10+ years), Fortran (1 year), LoggerNet (1 year)
Data analysis	Statistical inference, automated data retrieval (RESTful API), high performance cluster computing, signal processing, knowledge-guided machine learning
Field	High-frequency sensors (meteorology, water temperature, dissolved O_2), eddy covariance systems, trace gas flux measurements, multi-season sampling design
Laboratory	Gas chromatography, laser spectrometry (TDL & QCL), IRGA, GC-IRMS
Languages	Dutch (native), English (fluent), German, Swedish and French (beginner)

GRANTS

2020	Swedish Research Council | International Postdoc Grant | 280.000 EUR
2019	Bolin Centre for Climate Research | Conference travel grant | 500 EUR
2018	Bolin Centre Climate Research School | Conference travel grant | 500 EUR
2016	A.E.W. Smitts Foundation | Research grant | 2100 EUR
2015	Bolin Centre Climate Research School | Workshop travel grant | 500 EUR
2012	EU Erasmus Programme Study Grant | 880 EUR

MERITS & AWARDS

2022	International Society of Limnology (SIL) | Student paper competition, 2nd place
2017	European Geosciences Union | Outstanding Student Poster and PICO Award
2010	University of Amsterdam | Audience Award for best student presentation

SERVICE

2021, 2022	**Workshop Moderator |** Global Lake Ecological Observatory Network (GLEON) I co-moderate the Lake Metabolism workshop at the annual (virtual) conferences
2018	**Reviewer** | Intergovernmental Panel on Climate Change IPCC Special Report on the Ocean and Cryosphere in a Changing Climate
2016 – 2017	**Board member |** Association of Polar Early Career Scientists Sweden I helped organize and promote events for early career scientist in polar research.
2012 – 2015	**Ambassador** | The Otter Foundation I was responsible for the strategic selection of biodiversity-enhancing projects for long-term funding, working with conservation scientists and private investors
2013	**Representative** | Climate Policy Advisory Panel to the Dutch Ministry of Infrastructure and Environment. I worked with a small team to poll the opinions and ideas of students on climate policy, reporting directly to the State Secretary.
2012 – 2013	**Founding chairman** | Sustainability Committee, Utrecht University Staff and student initiative advocating for sustainability in research and education
2010 – 2011	**Secretary** | Student Council Sustainability Committee, University of Amsterdam I initiated, successfully obtained funding for and co-organized popular sustainability-themed events: film screenings, public debates and a festival.
2010 – 2011	**Project Manager |** De Kleine Consultant, a student-led strategy consultant.

I have reviewed for the following journals: Global Biogeochemical Cycles (AGU), Journal of Geophysical Research: Biogeosciences (AGU), Biogeosciences (EGU), Hydrology and Earth System Sciences (EGU), Limnology and Oceanography (ASLO), Global Change Biology, Environmental Science: Processes and Impacts

MEDIA & SCIENCE COMMUNICATION

2020	Public defense of PhD dissertation | *„Carbon trace gas dynamics in subarctic lakes"*
2017	Interview | Amy Martin for Threshold Podcast (Montana Public Radio) | Season 2: Cold Comfort: https://www.thresholdpodcast.org/season02-episode03
2017	Interview | Devi Lockwood, for her book *„1,001 Voices on Climate Change"*, 2021, Simon & Schuster, New York, USA, p280-281 (link to publisher page).
2016	Talk | Bolin Days, Stockholm, Sweden | *„One winter: carbon trace gas dynamics in three subarctic lakes in winter and spring"*
2016	Interview | Sara Sällström for Swedish Public Radio | Vetenskapsradion: Livet på myren (Science radio: Life on the mire): https://sverigesradio.se/sida/avsnitt/778365?programid=412
2015	Seminar | National Center for Atmospheric Research (NCAR), Boulder, CO, USA | *„Microphysics of Aerodynamic Contrail Formation Processes"*

FIELD EXPERIENCE

2022	**Université du Québec à Montréal** | La Romaine reservoirs, Québec. Canada Water sampling via boat and hydroplane for Paul del Giorgio's CarBBAS project
2021	**Stockholm University, Tarfala Research Station** | Tarfala, northern Sweden Deployment of a new buoy in Tarfala lake to measure temperature and oxygen
2015–2020	**Abisko Scientific Research Station** | Abisko, northern Sweden I led three field seasons in summer and 10+ short campaigns in winter. Sample collection, chemical analyses (GC, IRMS), eddy covariance flux measurements
2018	**Norwegian Polar Institute** | Ny-Ålesund, Svalbard, Norway Installation of a new laser spectrometer for stable isotopes in atmospheric CH_4

TEACHING EXPERIENCE

2018	**Teaching assistant** | Introduction to Geochemistry | Stockholm University Responsibilities: supervision of laboratory exercises and practicals
2015	**Teaching assistant** | Environmental Geochemistry | Stockholm University Responsibilities: field and laboratory supervision, student report grading
2016 – 2018	**Teaching assistant** | Field course in trace gas measurements | Stockholm University Responsibilities: field supervision, data processing practicals
2013	**Lecturer** | Junior College Utrecht | Utrecht University Lecture: *„What can ice cores tell us about climate in the past?"*
2012	**Course Coordinator** | Inst. for Interdisciplinary Studies, University of Amsterdam Responsibilities: acquire funding and accreditation for the Wubbo Ockels Lecture series on Sustainable Development by former ESA astronaut Prof. Wubbo Ockels.

STUDENT SUPERVISION

2021 – 2022 *Co-supervisor*	**Hugo Rudebeck** | PhD | Uppsala University, Dept. of Ecology and Genetics Thesis: Understanding spatial and temporal variation in lake ice properties
2018	**Lise Johnsson** | MSc | Lund University, Dept. of Physical Geography Thesis: Diffusion of CH_4 and CO_2 from subarctic lakes in Stordalen, Abisko

INTERNATIONAL CONFERENCE PRESENTATIONS

2022	GLEON 2022 All Hands' Meeting, Silver Bay at Lake George, NY, USA | Project update | *„MixMet: lake mixing and metabolism"*
2022	36th congress of the International Society of Limnology, Berlin, Germany | Invited Talk | Conference summary at the acceptance of the student paper competition prize
2022	36th congress of the International Society of Limnology, Berlin, Germany | Talk | *„Weakening of inverse stratification in northern lakes"*
2022	23rd International Workshop on Physical Processes in Natural Waters, Vancouver. Canada | Talk | *„Weakening of inverse stratification in northern lakes"*
2021	35th congress of the International Society of Limnology, virtual conference | Talk | *„Winter limnology: how do hydrodynamics and biogeochemistry shape ecosystems under ice?"*
2021	AGU Fall Meeting, virtual conference | Talk | *„Winter limnology: how do hydrodynamics and biogeochemistry shape ecosystems under ice?"*
2021	EGU General Assembly, virtual conference | Poster | *„Winter limnology: how do hydrodynamics and biogeochemistry shape ecosystems under ice?"*
2021	GLEON 2021 All Hands' Meeting, virtual conference | Poster | *„MixMet: lake mixing and metabolism"*
2020	Workshop on Physical Processes in Natural Waters, virtual conference | Talk | *„Physical and biological drivers of the temperature sensitivity of lake CH_4 emissions"*
2019	AGU Fall Meeting, San Francisco, USA | Poster | *„Timescale-dependence of physical and biogeochemical controls on CH_4 emissions from lakes"*
2019	AGU Chapman Conference on Winter Limnology, Polson, MO, USA | Poster | *„Drivers of Spring Emissions of CH_4 and CO_2 from Seasonally Ice-Covered Lakes"*
2018	AGU Fall Meeting, Washington DC, USA | Poster | *„Drivers of diffusive lake CH_4 emissions on daily to multi-year time scales"*
2018	21st International Workshop on Physical Processes in Natural Waters, Solothurn, Switzerland | Poster | *„Interactions between physical and biogeochemical controls on lake carbon gas emissions in spring"*
2018	EGU General Assembly, Vienna, Austria | Poster | *„Large springtime emissions of CH_4 from northern lakes facilitated by winter redox regime"*
2017	CIRC Research Symposium, Abisko Scientific Research Station, Sweden | Talk | *„Under-ice processes: carbon trace gases in three lakes on the Stordalen Mire"*
2017	20th International Workshop on Physical Processes in Natural Waters, Hyytiälä Forestry Field Station, Finland | Talk | *„Hydrological controls on spring carbon gas emissions from sub-arctic lakes"*
2017	EGU General Assembly, Vienna, Austria | Poster | *„Carbon trace gas dynamics in subarctic lakes"*
2016	GHG-LAKE and CarLAC Workshop, Stockholm, Sweden | Talk | *„Carbon trace gas dynamics in three subarctic lakes in winter and spring"*

2015 Polarforum 2015, Stockholm, Sweden | Poster | *„Research projects supported by the Swedish Polar Research Secretariat"*

2015 ICOS-NEON Carbon Workshop, Observatoire de Haute-Provence, France | Poster | *„Emissions of carbon trace gases from Arctic surface waters"*

PUBLICATIONS

Guseva S., Armani F., Desai A.R., Dias N.L., Friborg T., Iwata H., **Jansen J.**, Lükő G., Mammarella I., Repina I., Rutgersson A., Scholz K., Spank U., Stepanenko V.M., Torma P., Vesala T. & Lorke A. (2023) Bulk Transfer Coefficients Estimated from Eddy-Covariance Measurements over Lakes and Reservoirs, *Journal of Geophysical Research: Atmospheres, 128*, doi: 10.1029/2022JD037219

Yuan K, Zhu Q., Li F., Riley W.J., Torn M., Chu H., McNicol G., Chen M., Knox S., Delwiche K., Wu H., Baldocchi D., ... **Jansen J.**, ... Jackson R. (2022) Causality guided machine learning model on wetland CH_4 emissions across global wetlands, *Agricultural and Forest Meteorology*, *324*(6):109115, doi:10.1016/j.agrformet.2022.109115

Woolway R.I., Denfeld B., Tan Z., **Jansen J.**, Weyhenmeyer G.A. & La Fuente S. (2022), Winter inverse lake stratification under historic and future climate change. *Limnol. Oceanogr. Lett*, *7*, 302–311, doi:10.1002/lol2.10231

Weyhenmeyer G.A., Obertegger U., Rudebeck H., Jakobsson E., **Jansen J.**, Zdorovennova G., Bansal S., Block B.D., Carey C.C., Doubek J.P., Dugan H., Erina O., Fedorova I., Fischer J.M., Grinberga L., Grossart H.-P., ... & Zdorovennov R. (2022) Towards critical white ice conditions in lakes under global warming, *Nature Communications, 13,* 4974, doi:10.1038/s41467-022-32633-1

Jansen J., Woolway R.I., Kraemer B.M., Albergel C., Bastviken D., Weyhenmeyer G.A., Marcé R., Sharma S., Sobek S., Tranvik L.J., Perroud M., Golub M., Moore T.N., Råman Vinnå L., La Fuente S., Grant L., Pierson D.C., Thiery W. & Jennings E. (2022) Global increase in methane production under future warming of lake bottom waters. *Global Change Biology*, *28*, 5427–5440, doi: 10.1111/gcb.16298

Jansen J., MacIntyre S., Barrett D., Chin Y., Cortés A., Forrest A., Hrycik A., Martin R., McMeans B., Rautio M. & Schwefel R. (2021) Winter limnology: how do hydrodynamics and biogeochemistry shape unique ecosystems under ice? *Journal of Geophysical Research: Biogeosciences*. *126*. doi:10.1029/2020JG006237

Bolduc B., Hodgkins S.B., Varner R.K., Crill P.M., McCalley C.K., Chanton J.P., Tyson G.W., Riley W.J., Palace M., Duhaime M.B., Hough M.A., IsoGenie Project Coordinators, IsoGenie Project Team (**Jansen J.**), A2A Project Team, Saleska S.R., Sullivan M.B. & Rich V.I. (2020) The IsoGenie database: an interdisciplinary data management solution for ecosystems biology and environmental research. *PeerJ* 8:e9467, doi:10.7717/peerj.9467

Seco R., Holst T., Sillesen Matzen M., Westergaard-Nielsen A., Li T., Simin T., **Jansen J.**, Crill P.M., Friborg T., Rinne J. & Rinnan R. (2020) Volatile Organic Compound fluxes in a subarctic peatland and lake. *Atmospheric Chemistry and Physics*. *20*, 13399–13416. doi:10.5194/acp-20-13399-2020

Jansen J. (2020) *Carbon trace gas dynamics in subarctic lakes.* [PhD Dissertation] Department of Geological Sciences, Stockholm University, Sweden. ISBN 978-91-7797-946-3

Jansen J., Thornton B.F., Wik M., MacIntyre S. & Crill P.M. (2020) Temperature proxies as a solution to biased sampling of lake methane emissions. *Geophysical Research Letters*, *47*. doi: 10.1029/2020GL088647

Jansen J., Thornton B.F., Cortés A., Snöälv J., Wik M., MacIntyre S. & Crill P.M. (2020) Drivers of diffusive CH_4 emissions from shallow subarctic lakes on daily to multi-year timescales. *Biogeosciences*, *17*, 1911-1932. doi:10.5194/bg-17-1911-2020

Jansen J., Thornton B.F., Jammet M.M., Wik M., Cortés A., Friborg T., MacIntyre S. & Crill P.M. (2019) Climate-Sensitive Controls on Large Spring Emissions of CH_4 and CO_2 From Northern Lakes, *Journal of Geophysical Research: Biogeosciences, 124*, 2379-2399. doi:10.1029/2019JG005094

Sapart C.J., Shakhova N., Semiletov I., **Jansen J.**, Szidat S., Kosmach D., Dudarev O., van der Veen C., Egger M., Sergienko V., Salyuk A., Tumskoy V., Tison J. & Röckmann T. (2017) The origin of methane in the East Siberian Arctic Shelf unraveled with triple isotope analysis, *Biogeosciences, 14*, 2283-2292. doi:10.5194/bg-14-2283-2017

Jansen J. & Heymsfield A.J. (2015) Microphysics of aerodynamic contrail formation processes, *Journal of the Atmospheric Sciences, 72*, 3293-3308. doi:10.1175/JAS-D-14-0362.1