

Curriculum Vitae - Susanne Kratzer

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Academic Degrees

Oct 2008 **Associate Professor in Marine Ecology**, Stockholm University, Sweden.
 July 2001 **PhD degree University of Wales, Bangor (UWB)**. Thesis 'Bio-optical studies of coastal waters'. Subject area: Biological Oceanography. Supervisors: Prof. Paul Tett (Napier University, Scotland) and Dr. Dave Bowers (UWB).
 May 1995: **German degree 'Diplom Biologie' (Masters in Biology) Bremen University, Germany**; oral examinations in Marine Biology (main subject), Ecology, Botany and Chemistry in winter 1994. Thesis title (Diplomarbeit): 'A comparison of the optical properties of phytoplankton from coastal and oceanic waters'; examiners: Professor Paul Tett, School of Ocean Sciences, Bangor, UK, and Professor Dr. Victor Smetacek, Alfred-Wegener-Institute for Polar and Marine Research, Bremerhaven, Germany.
 April 1990 **Vordiplom Philipps University Marburg** (first stage of German Diplom degree) in Biology; oral examinations in Botany, Zoology, Physics and Chemistry.

Professional employment history

<i>From</i>	<i>To</i>	<i>Position, organisation, country</i>
2014	<i>date</i>	Senior researcher , Department of Ecology, Environmental and Plant Sciences (EMB), SU, Sweden
2012	2013	Senior advisor , 20120401-20130930 secondment to Brockmann Consult, GmbH, Germany funded by FP7 Marie Curie PEOPLE
2009	2013	Researcher , EMB, SU, Sweden (former Systems Ecology)
2005	2008	Assistant Professor (funded by SNSB) , Department of Systems Ecology, SU, Sweden
2001	2004	Researcher , remote sensing group, Department of Physical Geography and Quaternary Geology (INK), SU, SE; 9 months maternity leave during 2003/2004
1998	2000	Research assistant , Remote Sensing Group, INK, SU
1995	1997	PhD fellow , School of Ocean Sciences (SOS), funded by MAFF, University of Wales, Bangor (UWB), UK
1993	1994	Research officer , 50% (NERC), SOS, UWB, UK

Main supervisor of PhD students

- *Dmytro Kyryliuk* defended his 'Baltic Sea from Space - the use of ocean color data to improve our understanding of ecological drivers across the Baltic Sea basin - algorithm development, validation and ecological applications' on 27 September 2019. Co-supervisors: Prof. Steve Lyon (The Ohio State University) and Dr Michelle Mc Crackin (Baltic Eye, SU).
- *Elina Kari* defended her thesis '[Light conditions in seasonally ice-covered waters](#)' on 7 September 2018. Co-supervisors: Prof Matti Leppäranta, Helsinki University and Prof Monika Winder, DEEP, SU.
- *Krista Alikas, Tartu Observatory (TO), Estonia*, defended her thesis '[From research to applications: monitoring optically complex waters with MERIS/ENVISAT data](#)' on 13 May 2016. I was acting principal supervisor during the last 3 years of Krista's PhD. Main supervisor: Dr Anu Reinart, TO.
- *Jose Beltrán-Abaunza* defended his PhD '[Remote sensing in optically complex waters - water quality assessment using MERIS data](#)' on 29 January 2016. Co-supervisor: Dr Carsten Brockmann, Brockmann Consult BC, Germany and Prof Pauline Snoeijs-Leijonmalm, DEEP, SU.
- *Therese Harvey* defended her thesis '[Bio-optics, satellite remote sensing and Baltic Sea ecosystems - Applications for monitoring and management](#)' on 2 October 2015. Co-supervisors: Dr. Petra Philipson, Brockmann Geomatic AB, Sweden and Dr. Jakob Walve, DEEP, SU.

Hosting of early stage researchers and post docs

- *Dr E. Morozov*, NIERSC, St. Petersburg, Russia, 1-year post doc in 2014 (funded by FP7 EuRuCAS).
- *Dr Monika Wozniak*, from University of Gdansk, Poland; funded by the Swedish Institute (joint application) joint my research group from Sept. 2013 to May 2014.
- *Dr Selima Ben Mustapha* from Tunesia & Canada: research engineer (August 2012-July 2014); funded by EU FP7 WaterS & EU FP7 EuRuCAS & by ESA.
- *Dr Diana Vaičiūtė*, Klaipeda University (KU), Lithuania, visiting PhD student 2011 (Nordic network).
- *Dr A. Hommersom*, Water Insight, The Netherlands, 1-year post doc during 2011, EU FP7 WaterS..

Opponent and expert evaluator of PhD studies

- Chairman Evaluation Committee, PhD thesis 'Broad-scale patterns in organic matter concentrations of inland waters - insights from remote sensing and GIS' by E.S. Al-Kharusi, 28 May 2021, Department of Physical Geography & Ecosystem Science, Lund University, Sweden.
- Opponent for PhD thesis 'Remote Sensing Algorithms for Turbid Waters'(2020) by Kristi Uudeberg Tartu Observatory, University of Tartu, Estonia
- Opponent for PhD thesis 'Bio-optics and Ecology in *Emiliana huxleyi* Blooms: Field and Remote Sensing Studies in Norwegian Waters' (2012) by Erlend Kjeldsberg Hovland Norwegian University of Science and Technology (NTNU), Department of Biology, Trondheim, Norway.
- Expert evaluator for PhD thesis 'Spaceborne Inland Water Quality Monitoring' (2011) by Daniel Odermatt, Faculty of Sciences, University of Zurich (CH), Switzerland.
- Opponent for PhD thesis 'Bio-optical properties of eutrophic lakes' (2008) by Birgot Paavel, Estonian Marine Institute, University of Tartu, Estonia.

Invited expert

- I act as national advisor for Bio-optics and Marine Remote Sensing for the Swedish Agency for Marine and Water Management (Gothenburg). I also provide training in Bio-Optics to the key Monitoring groups in Sweden (SMHI, SU, UU and GU).
- Expert evaluator for the Science Foundation Ireland (SFI); mid-term evaluation of the Investigator Programme Award 'Integrating multidisciplinary geoscientific data into forecasting models to monitor

and predict coastal change: Proof of concept in Dublin Bay' (PI: Prof Brian Kelleher, Dublin City University), Sept. 2021.

- Reviewer for research applications to the Interfederal Space Agency of Belgium (ISAB) (2019)
- Invited expert for the Workshop BONUS EEIG for Information & Communication Technology Services for Environment, Safety and Security in the Baltic, Helsinki, 12 April 2010.
- Expert evaluation for the position 'Assistant Professor in Water and Environmental Studies' at Linköping University, LiU-2008-05306; 15 February 2010.
- Expert Evaluation for two 'Leading Research Fellows in Remote Sensing and Aquatic Optics' at the Estonian Marine Institute, Tartu University, Estonia, 11 January 2010.
- Scientific advisor for the Estonian Research programme (EstSpace) funded by the EU capacity building program (2008-2010).

My major recent assignments

- Editor for the MDPI open access journal *remote sensing* (since 2019).
- Invited Programme Committee Member for the Nordic Remote Sensing Conference 2019 (NoRSC'19), 17-19 September 2019, Aarhus Institute of Advanced Studies (AIAS), Aarhus University, Denmark.
- ESA Living Planet Symposium, Milano, 9-13 May 2019; Invited Session Chair and member of Science Committee.
- PI of the NASA AERONET-OC station in Lake Vänern since 2008. Our data has contributed to the ESA MERMAID data base with a fair number of valid MERIS match-ups in highly absorbing waters.
- Main Coordinator of the [Nordic Network for Baltic Sea Remote Sensing](#) (November 2008-October 2016) with about 70 active researchers & PhD students. Focus: Networking, scientific workshops and PhD training; funded by NordForsk.
- I was invited by the European Association of Remote Sensing Laboratories (EARSeL) to organize and convene a 2-day workshop on 'Coastal and Baltic Sea Remote Sensing' during the EARSeL Symposium held in Stockholm 15-19 June 2015.
- Active member of the ESA MERIS validation team since 2001; My group is also part of the Sentinel-3 validation team since 2014 (project identifier #13596).
- Convenor of Baltic Sea Remote Sensing Plenary Session and a workshop on 'Bio-optical modelling and remote sensing' BSSC 2013, 25-31 August, Klaipeda, Lithuania.
- Convener of Baltic Sea Remote Sensing Plenary Session and of a workshop on 'Bio-optical modelling and remote sensing', BSSC, 22-26 August 2011, St. Petersburg.

Distinctions, prizes, nominations, scholarships

- Prize 'Best student presentation': Satellite Remote Sensing in Marine Coastal Ecosystems – Applications for Monitoring and Management; authors: E. Therese Harvey, Susanne Kratzer & Petra Philipson, Nordic Marine Science Conference, Oslo 28-30 Oct 2013.
- 'Best of Plenary Session' for 'Remote sensing and optical in-water measurements of a cyanobacteria bloom in the Baltic Sea', 6th International Conference Remote Sensing for Marine and Coastal Environments 1-3 May 2000, Charleston, USA.
- Assistant Professorship (2005-2008) funded by Swedish National Space Board.
- PhD Scholarship (1995-1998) from the UK Ministry of Agriculture, Fisheries and Food (MAFF).

PI for current and recent national research projects

- Swedish National Space Board (SNSB) project: 'The use of OLC I Sentinel-3 data for assessing the effect of climate change in coastal and inland waters' (Dnr. 2022-00128, 2023-2026), PI: S. Kratzer.
- Swedish National Space Board (SNSB) project: 'The use of Copernicus Sentinel-3 data for research and societal needs' (Dnr. 2021-00064, 2022-2024), PI: S. Kratzer.
- Swedish National Space Board (SNSB) project: 'Long-term operation of the AERONET-OC station Pålgrunden in Lake Vänern for validation of Sentinel-3 data' (Dnr. 61/17 & Dnr. 2021-00050; 2018-2025), PI: S. Kratzer.
- HaV project: 'Framtagandet av nationella riktlinjer för marin bio-optiska mätningar inom det svenska övervakningsprogrammet' (Dnr. 130-20 & 538-21; 2020-2022), PI: S. Kratzer.
- Swedish National Space Board (SNSB) project: 'Ocean colour remote sensing in optically complex waters - moving from the ENVISAT to the Copernicus programme' (Dnr. 175/17; 2018-2020), PI: S. Kratzer.
- Swedish National Space Board (SNSB) project: 'Improving remote sensing reflectance retrieval in optically complex waters (Baltic Sea and Lake Vänern)' (2013-2016), PI: S. Kratzer
- Stockholm University's strategic marine environmental program Baltic Ecosystem Adaptive Management, BEAM, coordinator: Professor Ragnar Elmgren. PI of the sub-project 'Bio-optical research for management - a collaborative effort between BEAM and ECOCHANGE' (2011-2020) funded through FOMAS.

Recent coordination of and participation in international projects

- EU Interreg Nord project SEAmBOTH (2017-2020), my participation in the project was co-funded by Länsstyrelsen Norrbotten and the Swedish Agency for Marine and Water Management (HaV).
- ESA/ARGANS project: 'MERIS Validation and Algorithm 4th Reprocessing: MERIS Validation Team (MVT)' ref. 003-025, (2015-2020); PI for SU: S. Kratzer.
- EU FP7 funded project European Russian Centre for cooperation in the Arctic and Sub-Arctic environmental and climate research (EuRuCAS, 2012-2015); our focus: sub-Arctic modelling and remote sensing (Lake Vänern & Baltic Sea); PI for SU: S. Kratzer.
- EU FP7 WaterS Marie Curie Industry-Academia Partnerships and Pathways (IAPP), 2010-2014. Focus: Industry-Academia exchange, mobility; PI for SU: S. Kratzer. 18-months secondment to Brockmann Consult, Germany during 2012-2013.
- PI ESA/ESRIN project: Technical Assistance for the validation of MERIS products in lake Vänern and coastal waters of the north-western Baltic Sea (Sweden); 2008-2017.
- Participation Science and Policy Integration for Coastal System Assessment (SPICOSA), Integrated EU FP6 project; my participation in SPICOSA was in WT 10.3 Alternative Technologies, 12.1 Academic training & Curriculum development (2007-2009).

International research and teaching experience

- Invited Lecturer, Baltic Earth Summer School, 24-29 August 2020 organized by Professor Markus Meier, University of Rostock. Half day module on Marine Optics and Ocean Colour Remote Sensing.
- In 2010/2011 I was invited by CSIRO Brisbane, Australia and Hobart, Tasmania to visit their labs and to give a research presentation, and I got a joint travel grant from SU (for docents) and from CSIRO.
- Invited Lecturer, EstSpace Summer School 'Applications and Operational Use of Remote Sensing for Monitoring Environment and Security, Tartu Observatory, Estonia, 27-28 Aug 2008.
- ERASMUS Mundus Masters course on Water and Coastal Management; teaching 2 ECTS module on 'Bio-optical monitoring of coastal waters' at the University of the Algarve, Faro, Portugal (2005; 2006) and 1.5 ECTS at Plymouth University, UK (2007).

- PhD scholarship in Biological Oceanography, School of Ocean Sciences, Menai Bridge, UK (1995-1997). I was invited by PML to learn about calibrations of radiometer, and later I also spent some time there to learn about pigment determination by HPLC.
- Research officer (50%), School of Ocean Sciences, Menai Bridge, UK (1993-1994) whilst writing my Master's thesis.
- Research assistant at the Alfred-Wegener-Institute for Polar and Marine Research, Bremerhaven, Germany (winter term 1992) two months, identifying Antarctic phytoplankton in Prof. Victor Smetacek's Group. My work contributed to the article: Gleitz & Thomas 1993. *J Exp Mar Biol Ecol*, 173(2), 211-230.
- In 1989, I taught in a Plant Physiology course in the Biology Department, Philipps-Universität Marburg; total teaching corresponded to 4 ECTS.

Publications

In total, I have published 48 peer reviewed papers, 27 of which as first or senior author; 10 papers were published in *Remote Sensing of Environment*, the top journal of remote sensing. I also published 2 monographs, 4 book chapters; 8 extended abstracts for conferences and 9 popular science articles (7 of which in Swedish). **Number of Citations:** 2428; h-index: 29; i10-index: 45 (Google Scholar, 30 November 2022).

Recent peer reviewed articles

- Cazzaniga, I., Zibordi, G., Alikas, K. and **Kratzer, S.**, Temporal changes in the Remote Sensing Reflectance at Lake Vänern, *Journal of Great Lakes Research*, in print.
- Kratzer, S.**, Harvey, E.T. and Canuti, E., 2022. International Intercomparison of In Situ Chlorophyll-a Measurements for Data Quality Assurance of the Swedish Monitoring Program. *Frontiers in Remote Sensing*, 3, p. 866712; doi:10.3389/frsen.2022.866712.
- Kratzer, S.** and Plowey, M. 2021, Integrating mooring and ship-based data for improved validation of OLCI chlorophyll-a products in the Baltic Sea. *International Journal of Applied Earth Observation and Geoinformation*, 94, 102212.
- Kratzer, S.**, Kyriliuk, D. and Brockmann, C., 2020. Inorganic suspended matter as an indicator of terrestrial influence in Baltic Sea coastal areas—Algorithm development and validation, and ecological relevance. *Remote Sensing of Environment*, 237, 111609.
- Kratzer, S.**, Kyriliuk, D., Edman, M., Philipson, P. and Lyon, S.W., 2019. Synergy of Satellite, in situ and Modelled Data for Addressing the Scarcity of Water Quality Information for Eutrophication Assessment and Monitoring of Swedish Coastal Waters. *Remote Sensing*, 11(17), 2051.
- Kyriliuk, D. and **Kratzer, S.**, 2019. Evaluation of Sentinel-3A OLCI Products Derived Using the Case-2 Regional CoastColour Processor over the Baltic Sea. *Sensors*, 19(16), 3609.
- Kyriliuk, D. and **Kratzer, S.**, 2019. Summer distribution of total suspended matter across the Baltic Sea. *Frontiers in Marine Science*, 5, 504. DOI: 10.3389/fmars.2018.00504.
- Kratzer, S.** and Moore, G., 2018. Inherent Optical Properties of the Baltic Sea in Comparison to Other Seas and Oceans. *Remote Sensing*, 10(3), p.418.
- Wozniak, M., Craig, S., **Kratzer, S.**, Wojtasiewicz, B. and Darecki, M., 2017. A Novel Statistical Approach for Ocean Colour Estimation of Inherent Optical Properties and Cyanobacteria Abundance in Optically Complex Waters. *Remote Sensing*, 9(4), 343.
- Alikas, K. and **Kratzer, S.**, 2017. Improved retrieval of Secchi depth for optically-complex waters using remote sensing data. *Ecological Indicators*, 77: 218-227.