

Curriculum Vitae Wolfgang Dierking

Education

- 1985-1989 University of Bremen, Department of Physics and Electrical Engineering
Degree: Ph.D. (Dr. rer. nat.)
- 1978-1985 University of Hamburg, Department of Geophysics
Degree: M. Sc. in Geophysics

Professional Data

- Since 2016 Professor II at Center for Integrated Remote Sensing and Forecasting for Arctic Operations, Arctic University of Norway, Tromsø, (part-time, 20 per cent), head of work package "Sea Ice, Iceberg, and Growler Remote Sensing"
- Since 2007 Head of research group "Earth Observation Systems, EOS" at the Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany
- 2007 "150th Anniversary Visiting Professor" at Chalmers University of Technology
- Since 2002 Research scientist at the Alfred Wegener Institute for Polar and Marine Research, Climate Science Division
- 1996-2002 Associate Research Professor at the Danish Center for Remote Sensing, Department of Electromagnetic Systems, Technical University of Denmark
- 1993-1995 Postdoc in the research group "Remote Sensing", Department of Radio and Space Science, Chalmers University of Technology, Gothenburg, Sweden
- 1990-1993 Postdoc in the research group "Sea Ice Modeling and Remote Sensing " at the Alfred-Wegener-Institute for Polar and Marine Research, Bremerhaven, Germany
- 1989-1990 Employee in the research group "Satellite Oceanography", Department of Physics and Electrical Engineering, University of Bremen, Germany

National and International Committees and Memberships

- since 2018 ESA Copernicus L-Band SAR Mission Advisory Group
- since 2015 Co-chair of Applied Science and Research Standing Committee ASRSC of the International Ice Charting Working Group IICWG, member of IICWG Iceberg Committee
- 2011-2015 ESA Sentinel-1 Mission Advisory Group
- 2010-2012 Expert group on "Remote Sensing Strategy" for SIOS (Svalbard Integrated Arctic Earth Observing System)
- since 2009 International Ice Charting Working Group (IICWG)
- 2009-2011 Spokesman of topic "Climate Change in the Polar Regions" of the German Earth Observation Network "Netzwerk-EOS"
- 2007-2008 Spokesman of topic "Ice and Ocean" in the German Helmholtz-EOS (Earth Observation Systems) research network
- 2003-2010 ESA SAR Advisory Group
- since 2003 ESA Category-1 Advisory Group

External Stays

- 2008 - 2017 several stays at Chalmers University of Technology, Gothenburg, Sweden
- 2016 First Institute of Oceanography (FIO), Qingdao, China
- 2015 Finnish Meteorological Institute, Helsinki
- 2011 - 2014 Gateway Antarctica, University of Canterbury, Christchurch, New Zealand (3 stays)
- 1997 Visit of the Communications Research Laboratory (Tokyo, Japan), grant from the Japan International Science and Technology Exchange Center

Other Relevant Items

- Expeditions** Participation in several ship-based, land-based and flight expeditions in the Arctic, Antarctic, and Baltic Sea
- Teaching** Since 2015 lecturer for ocean remote sensing at the University of Applied Sciences in Bremerhaven, (co-)supervision of PhD. students in Germany, Norway, Sweden, and China; invited opponent in PhD defenses in Denmark, Finland, Sweden, Norway, Canada
- PI** Cat-1 and AO-projects at ESA (ERS-1 and 2, Envisat), and for TerraSAR-X, ALOS-PALSAR, and Radarsat-2 (SOAR); Dragon-Cooperation Program between the Ministry of Science and Technology of China and ESA
- Science Team** Member of science teams for Tandem-X and Tandem-L (DLR), CoreH2O and IRIS (ESA Earth Explorers)
- Chairperson** for several sessions at ESA symposia and workshops, co-organizer of the workshops "Radar Remote Sensing of Sea Ice" 2007 and 2011 in Gothenburg/Sweden
- Committee Work** Member of scientific committees, e. g. ESA POLINSAR 2005, 2007, 2009, 2011; ESA Envisat&ERS Symposium 2004, ESA Living Planet symposium 2010, 2013; EO for Cryosphere Science 2012; SeaSAR 2018; member of Organizing Committee for the IICWG-meeting 2015
- Referee/Reviewer** for IEEE Transactions on Geoscience and Remote Sensing, International Journal of Remote Sensing, Journal of Geophysical Research, Radio Science, Remote Sensing of Environment, Remote Sensing, The Cryosphere, proposals for TerraSAR-X, Cosmos-SkyMED, National Science Foundation (USA), and others

Peer-Reviewed Publications 2010-2018

Murashkin, D., Spreen, G., Huntemann, M., Dierking, W. (2018), "Method for detection of leads from Sentinel-1 SAR images", *Annals of Glaciology*, 13 pp., doi:10.1017/aog.2018.6

Griebel, J., and Dierking, W. (2018), "Impact of sea ice drift retrieval errors, discretization and grid type on calculations of sea ice deformation", *Remote Sensing* 10 (393), doi:10.3390/rs1030393

Dierking, W., Lang, O. and Busche, T. (2017), "Sea ice local surface topography from single-pass satellite InSAR measurements: a feasibility study", *The Cryosphere* (11), pp. 1967-1985, doi:10.5194/tc-11-1-2017

Griebel, J. and Dierking, W. (2017), "A Method to Improve High-Resolution Sea Ice Drift Retrievals in the Presence of Deformation Zones", *Remote Sensing* 9 (7), doi:10.3390/rs9070718

- Linow, S. and Dierking, W. (2017)**, "Object-based detection of linear kinematic features in sea ice", *Remote Sensing* 9(5), doi:10.3390/rs9050493
- Hollands, T., Dierking, W. (2016)**, "Dynamics of the Terra Nova Bay Polynya: The potential of multi-sensor satellite observations", *Remote Sensing of Environment* 187, pp. 30-48 doi:10.1016/j.rse.2016.10.003
- Marino, A., Dierking, W., Wesche, C. (2016)**, "A Depolarization Ratio Anomaly Detector to Identify Icebergs in Sea Ice Using Dual-Polarization SAR Images", *IEEE Trans. Geosci. Rem. Sensing* 54 (9), pp. 5602-5615 . doi:10.1109/TGRS.2016.2569450
- Zhang, X., Dierking, W., Zhang, J., Meng, J., Lang, H. (2016)**, "Retrieval of the thickness of undeformed sea ice from simulated C-band compact polarimetric SAR images", *The Cryosphere* 10, pp. 1529-1545, doi:10.5194/tc-10-1529-2016
- Arndt, S., Willmes, S., Dierking, W., Nicolaus, M. (2016)**, "Timing and regional patterns of snowmelt on Antarctic sea ice from passive microwave satellite observations", *Journal of Geophysical Research: Oceans*, doi:10.1002/2015JC011504
- Wesche, C., Dierking, W. (2016)**, "Estimating iceberg paths using a wind-driven drift model", *Cold Regions Science and Technology*, 125 (1), pp. 31-39 doi: 10.1016/j.coldregions.2016.01.008
- Linow, S., Hollands, T., Dierking, W. (2015)**, "An assessment of the reliability of sea ice motion and deformation retrieval using SAR images", *Annals of Glaciology* 56(69), pp. 229-234
- Wesche C., Dierking, W. (2015)**, "Near-coastal circum-antarctic iceberg size distributions determined from synthetic aperture radar images", *Remote Sensing of the Environment* 156, pp. 561-569, doi:10.1016/j.rse.2014.10.025
- Behrendt, A., Dierking, W., Witte, H. (2015)**, "Thermodynamic sea ice growth in the central Weddell Sea, observed in upward-looking sonar data", *J. Geophysical Research Oceans*, 120(3), pp. 2270-2286
- Zhang, X, Dierking, W., Zhang, J., Meng, J. (2015)**, "A polarimetric decomposition method for ice in the Bohai Sea using C-band PolSAR data", *IEEE J. Selected Topics in Applied Earth Observations and Remote Sensing*, Vol. 8, Issue 1, pp. 47-66 doi:10.1109/JSTARS.2014.2356552
- Hollands, T., Linow, S., and Dierking, W. (2015)**, "Reliability measures for sea ice motion retrieval from synthetic aperture radar images", *IEEE J. Selected Topics in Applied Earth Observations and Remote Sensing*, Vol. 8, Issue 1, pp. 67-75, doi:10.1109/JSTARS.2014.2340572
- Dierking, W., Wesche, C. (2014)**, "C-Band radar polarimetry – useful for detection of icebergs in sea ice?", *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 52, No. 1, 25-37, doi:10.1109/TGRS.2012.2234756
- Wesche, C., Jansen, D., and Dierking, W. (2013)**, "Calving fronts of Antarctica: Mapping and Classification", *Remote Sens.* 2013, 5 (12) pp. 6305-6322; doi:10.3390/rs5126305
- Dierking, W. (2013)**, "Sea ice monitoring by synthetic aperture radar", *Oceanography* 26(2):100-111, <http://dx.doi.org/10.5670/oceanog.2013.33>.
- Behrendt, A., Dierking, W., Fahrbach, E., and Witte, H. (2013)**, "Sea ice draft in the Weddell Sea, measured by upward looking sonars", *Earth Syst. Sci. Data*, 5(1), 209-226, doi:10.5194/essd-5-209-2013
- Hollands, T., Haid, V., Dierking, W., Timmermann, R., and Ebner, L.(2013)**, "Sea ice motion at the Ronne Polynia, Antarctica: SAR observations versus model results", *Journal of Geophysical Research* 118(4), 1940-1954, doi:10.1002/jgrc.20158
- Sobiech, J., Dierking, W. (2013)**, "Observing lake- and river-ice decay with SAR: advantages and limitations of the unsupervised k-means classification approach", *Annals of Glaciology*, Vol. 54, No. 62, 65-72, doi:10.3189/2013AoG62A037

Dierking, W., Haas, C. (2012), "Advances of sea ice observations since ARCTIC'91", *Polarforschung*, Alfred Wegener Institute for Polar and Marine Research & German Society of Polar Research, 82(1), 1-18

Dierking, W., Linow, S., Rack, W. (2012), "Towards a robust retrieval of snow accumulation over the Antarctic ice sheet using satellite radar", *Journal of Geophysical Research*, Vol. 117, D09110, doi:10.1029/2011JD017227

Dierking, W., Lemke, P. (2012), "Eis und Schnee", chapter 11 in "Satellitenmeteorologie", Peter Köpke, Michael Sachweh (Eds.), Ulmer UTB-Verlag, Stuttgart, ISBN 978-3-8252-3525-3(UTB) (in German)

Wesche, C., Dierking, W. (2012), "Iceberg detection in SAR images in two test regions of the Weddell Sea, Antarctica", *Journal of Glaciology*, Vol. 58, No. 208, doi:10.3189/2012JOG11J020

Hollands, T., Dierking, W. (2011), "Performance of a multiscale correlation algorithm for the estimation of sea ice drift from SAR images: initial results", *Annals of Glaciology* 52(57), 311-317

Eriksson, L. E. B., Borenäs, K., Dierking, W., Berg, A., Santoro, M., Pemberton, P., Lindh, H., Karlson, B. (2010), "Evaluation of new space borne SAR sensors for sea-ice monitoring in the Baltic Sea", *Canadian Journal of Remote Sensing*, Vol. 36, Suppl. 1, pp. S56-S73

Dierking, W. (2010), "Mapping of different sea ice regimes using images from Sentinel-1 and ALOS synthetic aperture radar", *IEEE Transactions on Geoscience and Remote Sensing* 48(3), 1045-1058, doi: 10.1109/TGRS.2009.2031806