

Geomathematics, Remote Sensing and Cryospheric Sciences Laboratory
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Dr. Ute Christina Herzfeld

November 11, 2022

ECEE

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CURRICULUM VITAE

Research Professor, Department of Electrical, Computer and Energy Engineering, University of Colorado Boulder

Affiliate Professor, Department of Computer Sciences, CU Boulder

Affiliate Professor, Department of Applied Mathematics, CU Boulder

Department Representative of ECEE to the CU Geophysics Program

Academic Education and Degrees

- 1978-1983 Study of mathematics and evangelical theology, Universität Mainz, Germany, and University of Warwick, Coventry, England
- Dec. 1983 **State Examination (Master's Degree)**, Mathematics, Evangelical Theology, Johannes Gutenberg-Universität Mainz, Germany (summa cum laude), thesis in the theory of finite soluble groups
- 1982-1986 Study of geology, geophysics, oceanography, geography, glaciology
- June 1986 **Doctoral Degree (Dr. rer. nat.)**, Mathematics (with Prof. Dr. K. Doerk), thesis in the theory of finite groups, secondary subjects applied mathematics and geosciences, Johannes Gutenberg-Universität Mainz
- 1986 **Diploma of Postgraduate Studies in Mathematical Geology**, Free University of Berlin, Germany (with Prof. Dr. W. Skala), two thesis papers (a) on geostatistical estimation of bathymetric data, and (b) on statistical classification of digital satellite images (LANDSAT)

Fellowships and Awards

- 1978-1983 **Scholarship, German National Scholarship Foundation** (Studienstiftung des deutschen Volkes), Bonn, Germany
- 1980-1981 **Scholarship for Studies Abroad, German National Scholarship Foundation**, Bonn, at the University of Warwick, Coventry, Great Britain
- 1984-1986 **Doctoral Fellowship, German National Scholarship Foundation**, Bonn
- 1987-1988 **Postdoctoral Fellowship, German Science Foundation** (Deutsche Forschungsgemeinschaft), Bonn, Germany, at Mathematical Geology, Free University of Berlin, Germany
- 1988-1992 **Feodor Lynen Fellowship, Alexander von Humboldt Foundation**, Bonn, Germany, at Scripps Institution of Oceanography, University of California at San Diego, USA
- 1992 **President's Prize of the International Association for Mathematical Geology** for outstanding contributions to theoretical and applied geostatistics

- 1994-1995 **Heisenberg Fellow, German Science Foundation** (Deutsche Forschungsgemeinschaft), at Institute of Arctic and Alpine Research, University of Colorado Boulder
- 2002-2004 **CIRES Visiting Fellow**, at CIRES (Cooperative Institute for Research in Environmental Sciences), University of Colorado Boulder
- 2009 **National Aeronautics and Space Administration Ames Honor Award** to CASIE Project Team for excellence in the category Group/Team; signed by S. Pete Worden, Center Director, Ames Research Center (Ute Herzfeld Coinvestigator of Characterization of Arctic Sea Ice Experiment (CASIE))
- 2010 **National Aeronautics and Space Administration Group Achievement Award** to CASIE Team for outstanding accomplishments in the Characterization of Arctic Sea Ice Experiment (CASIE), conducted in Svalbard, Norway, July 2009; signed by NASA Administrator C. Bold Jr. (Ute Herzfeld Coinvestigator of CASIE)

Positions

- 2021-present **Affiliate Professor, Department of Computer Sciences** (since March 2021)
- 2018-present **Research Professor, Department of Electrical, Computer and Energy Engineering, University of Colorado Boulder**, Director of the Geomathematics, Remote Sensing and Cryospheric Sciences Laboratory (Computational mathematics, Data science methods and applications, especially in cryospheric sciences, laser Altimetry, and image classification, Machine learning algorithms and applications, Development of physically constrained mathematical and statistical algorithms and applications in physical sciences, airborne and satellite remote-sensing technology; Development of algorithms for detection of ice surfaces, cloud layers, tree canopy and ground in micro-pulse laser altimeter data for ICESat-2; Cyberinfrastructure development for data-driven classification, parameterization and numerical modeling; Classification methods for signal processing; Big Data computational algorithms and analysis; Bering Glacier Surge 2011-2014 (Alaska) and Negribreen Surge 2017-2021 (Svalbard): Airborne and satellite observation, analysis and numerical modeling; Spatial statistical analysis of roughness structures of glaciers and sea ice and their influence on satellite signals; Model-data comparison)
- 2015-present **Department Representative of ECEE to the CU Geophysics PhD Program**
- 1993-present **Affiliate Professor, Department of Applied Mathematics, University of Colorado Boulder** (advisory of undergraduate and graduate research assistants)
- 2004-2019 **Senior Research Associate, Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder** (complex changes in Arctic sea ice, glaciology of fast-moving glaciers in Greenland, Antarctica, Iceland and Alaska, geostatistical classification of sea ice and glaciers from field and remote-sensing data, energy transfer cryosphere – atmosphere)
- 2010-2018 **Research Associate Professor, Department of Electrical, Computer and Energy Engineering, University of Colorado Boulder**, Director of the Geomathematics and Remote Sensing Laboratory (development of physically constrained mathematical and statistical algorithms and applications in physical sciences, airborne and satellite remote-sensing technology; Classification methods for signal processing; Big Data computational algorithms and analysis; Development of algorithms for detection of ice surfaces, cloud layers, tree canopy and ground in micro-pulse laser altimeter data for ICESat-2; Bering Glacier Surge 2011-2014 (Alaska) and Negribreen Surge 2017 (Svalbard): Airborne and satellite observation, analysis and parameterization; Spatial statistical analysis of roughness structures of glaciers and sea ice and their influence on satellite signals; Model-data comparison; New course Spring 2011: Remote Sensing, Signal Processing and Spatial Data Analysis ECEN 4004)
- 2007-2008 **Lecturer, Department of Applied Mathematics, CU Boulder** (APPM 7400-001: Spatial Statistics: Theory and Applications, and APPM 2350: Calculus 3 for Engineers)

- 2002-2004 **CIRES Visiting Fellow at the University of Colorado, Boulder** (“Study of ice-surface features as indicators of glaciologic and climatic processes, based on analysis of ground and satellite data”; collaboration with Prof. Dr. Konrad Steffen, Cooperative Institute for Research in Environmental Sciences, and Prof. Dr. Roger Barry, Director, National Snow and Ice Data Center / World Data Center for Glaciology)
- 1995-2003 **Professor (Universitätsprofessor, C3) and Head of Geomathematics Division, University of Trier, Department of Geography and Geosciences** (development and organisation of a geomathematics program, research in geomathematics, remote sensing, geophysics, environmental and cryospheric sciences, Greenland expeditions, instrument development) [on maternity leave 2002-2003]
- 10/1999-3/2000 **Sabbatical** at the University of Colorado, Boulder (snow surface roughness, snow hydrology, and geostatistics; with Prof. Dr. Nel Caine, Institute of Arctic and Alpine Research) and as **Visiting Professor** to the University of British Columbia, Vancouver, Canada (study of damaged material (crevassed glaciers) using continuum damage mechanics and geostatistical classification; with Prof. Dr. Garry Clarke)
- 1995-2003 **Fellow Adjoint and Senior Research Associate, Institute of Arctic and Alpine Research, University of Colorado Boulder**
- 1994-1995 **Heisenberg Fellow, German Science Foundation** (Deutsche Forschungsgemeinschaft; geomathematics and satellite geophysics – applications in polar research)
- 1993-1995 **Research Associate, Institute of Arctic and Alpine Research, University of Colorado Boulder**; and **Member of the Graduate Faculty, Department of Geological Sciences** (projects in remote sensing, glaciology, geomathematics, marine geology and geophysics)
- 1991-1993 **Assistant Research Geomathematician (Project Scientist) at Scripps Institution of Oceanography, University of California San Diego** (marine geology and geophysics, satellite altimetry over ice and oceans, geomathematics and geophysical inverse theory, data analysis for new shipboard remote-sensing instruments)
- 1988-1992 **Feodor Lynen Research Fellow, Alexander von Humboldt Foundation, Bonn, Germany, at Scripps Institution of Oceanography, University of California at San Diego, USA** (projects in physical oceanography and mathematical geology, geostatistics related to geophysical inverse theory, variography and fractals, with Prof. Dr. W. H. Berger)
- 10/1987-4/1988 **Research Scientist, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Expedition ANTARKTIS VI/3, RV POLARSTERN** (application of geostatistics in the evaluation of SEABEAM data and ground-penetrating radar data of Antarctic glaciers)
- 1987-1988 **Postdoctoral Research Fellow (Deutsche Forschungsgemeinschaft) and Lecturer, Mathematical Geology, Free University of Berlin, Germany** (development of geostatistical methods, spatial continuity measures for geologic and bathymetric data, mineral exploration)
- 7-8/1987 **Visiting Research Scientist, Centre de Géostatistique, Ecole des Mines de Paris, Fontainebleau, France** (theory of geostatistical estimation under constraints)
- 1986-1987 **Assistant Professor, Department of Geology, Bayerische Julius-Maximilians-Universität, Würzburg** (establishment of a mathematical geology program through lectures and seminars, introduction of computer applications)
- 10-11/1984 **Research Scientist during Expedition ANTARKTIS III/1, RV POLARSTERN, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany** (development and implementation of software for the SEABEAM post-processing, coordination of SEABEAM technology course)
- 1984-1986 **Graduate Teaching Assistant in Mathematics, University of Mainz, Germany** (algebra, analysis)
- 1981-1983 **Teaching Assistant in Mathematics, University of Mainz, Germany** (linear algebra, calculus, analysis, differential equations)

1980-1981 **Teaching Assistant in Mathematics, University of Warwick, Coventry, Great Britain**
(linear algebra, calculus, differential equations)

Synergistic Activities

- (1) Pioneering research in physically, geophysically and environmentally constrained mathematical and spatial statistical methods and algorithms
- (2) Pioneering contributions to establishing geostatistics and geomathematics as a discipline in international and multi-disciplinary research communities
- (3) Design of the density-dimension-algorithm (DDA) for analysis of photon-counting micro-pulse lidar altimeter data for ice and atmosphere, applied as operational algorithm for NASA ICESat-2 atmospheric data products (layer detection) and ICESat-2 high-resolution ice-surface products (research products on the NASA cloud); member of the ICESat-2 Science Team
- (4) Extensive software development for geostatistical estimation and classification systems (since 1990s), development of open-source cyber-infrastructures (presently)
- (5) Development and lead of a graduate and undergraduate Geomathematics Program, Universität Trier, Germany, including statistics, geostatistics, linear algebra, analysis and advanced geomathematics
- (6) Pioneering work on the role of spatial ice surface roughness in glaciology and remote sensing, through physical and statistical theory, instrument development (Glacier Roughness Sensor, ULS), field work in Greenland and on alpine glaciers
- (7) Geophysical observation of surges of Bering Glacier, Alaska (1993-1995 and 2011-2013), environmental catastrophes associated with sudden accelerations of Americas largest and longest glacier; coordination of airborne remote-sensing observations and classification of laser-altimeter and image data; parameterization of physical processes exemplary of glacial acceleration and disintegration (PI of NSF RAPID response to natural catastrophe project)
- (8) Lead author of ICESat-2 Algorithm Theoretical Base Document (ATBD) for the Atmosphere, Part II: Detection of Atmospheric Layers and Surface Using a Density Dimension Algorithm; also algorithm development for detection of snow, ice and vegetation in next-generation micro-pulse laser altimeter data, for NASA's ICESat-2 Mission [2010-present]
- (9) Airborne geophysical data collection to study the surge of Negribreen, Svalbard (2017-2019). Airborne geophysical validation of ICESat-2 data (2019). Collaboration with the University Centre in Svalbard and the Norwegian Polar Institute. Funded participation in the Svalbard Integrated Arctic Earth Observing System (SIOS) as the first PI from a non-European institution (2018).
- (10) PI for European Space Agency (ESA) satellites ERS-1, ERS-2, ENVISAT and CryoSat-2 (launched 2010), 1992-present
- (11) Member of ICESat-2 Science Team, official collaborator of ICESat Project (2003-2009), National Aeronautic and Space Administration (NASA) and PI of ICESat/ ICESat-2 research projects funded by NASA Cryospheric Sciences
- (12) Regular contribution to MABEL flight planning (The Multiple Altimeter Beam Experimental Lidar (MABEL) is an aircraft prototype of the ICESat-2 multi beam micro-pulse photon-counting lidar), coordinated by NASA ICESat-2 Project (2010-present)
- (13) Spatial statistical analysis of airborne remote-sensing data from NASA's Operation IceBridge 2009-present
- (14) PI for RADARSAT mission data analysis, Canadian Space Agency and NASA
- (15) Participation in SeaRISE through physically constrained spatial analysis of ice-bed topographic data (SeaRISE is a community project to assess maximal sea-level rise from mass

- loss of ice sheets), 2010-2013
- (16) Participation in the Ice Sheet Model Intercomparison Project 6 (ISMIP-6) of the World Climate Research Programme (WCRP) Climate Model Intercomparison Project 6 (CMIP-6), established 2014
 - (17) Contributions to Community Earth System Modeling (CESM) through the Polar Climate Working Group, Land Ice Working Group and Uncertainty Quantification interest group
 - (18) Extensive experience as PI and expedition lead of Greenland glaciology and remote sensing field projects (5 expeditions, 1996-2005)
 - (19) Extensive experience in flight-planning and leading of airborne geophysical observations in Greenland, Alaska, Iceland, Canada and Svalbard (Norway) (1993, 1994, 1995, 1996, 1997, 1999, 2001, 2003, 2004, 2005, 2011, 2012, 2013, 2017, 2018, 2019)
 - (20) Co-PI in the 2009 “Characterization of Arctic Sea Ice Experiment” (CASIE; Science PI J. Maslanik), observations of sea ice in the Fram Strait from a base in Ny Alesund, Svalbard, with NASA AMES SIERRA UAV (NASA Airborne Operations PI M. Fladeland); two NASA Awards received 2009, 2010
 - (21) Contributions to the International Polar Year through research on sea-ice roughness as an indicator of changes in the Arctic Sea-Ice (collaborative with JPL, Brigham Young University, Ft Hays State University, KS, funded by NASA Cryospheric Sciences)
 - (22) Design and development of the Glacier Roughness Sensor (GRS), with Electrical Engineering Group, Universität Trier and supported by Deutsche Forschungsgemeinschaft
 - (23) Collaboration on development of UAV laser profilometer system with aerospace engineers, CU Boulder (funded by NSF Arctic Sciences and NASA Cryospheric Sciences)
 - (24) Development of a small integrated system for coregistered collection of laser altimeter, video and GPS data of ice surfaces (Bering-Bagley Glacier System, AK), as input for automated surface classification system
 - (25) Participation in sea-going expeditions in Antarctica, the Arctic, the central Atlantic and several regions of the Pacific (1984-1992), geophysical surveying and collaboration on development of marine geophysical instrumentation, with Alfred-Wegener Institute for Polar and Marine Research (Germany), Scripps Institution of Oceanography (USA), Lamont-Doherty Geophysical Observatory (USA), NOAA, and Universität Kiel (Germany)
 - (26) Development and teaching of new interdisciplinary statistics courses at CU Boulder
 - (27) Extensive teaching experience and graduate and undergraduate student advisory (1980-present)
 - (28) Faculty advisor of the Student Chapter of the International Association for Mathematical Geosciences at the University of Colorado Boulder (2009-present)
 - (29) Member of founding Board of Directors, Alexander von Humboldt Association of America
 - (30) PI or Co-PI on 115 funded research projects (105 as PI)
 - (31) Introduction of the concept of spatial sea-floor roughness to marine geophysics, study of influence of roughness on acoustic scattering and reverberation
 - (32) 20 years of editorship of Computers & Geosciences: Associate Editor 1995-2007, Assistant Editor 1987-1994
 - (33) Reviewer for funding agencies in this and other countries

Professional Societies — Memberships and Services

- *International Union of Geodesy and Geophysics (IUGG)*
 - Liaison of the International Association of Cryospheric Sciences (IACS) to the IUGG Commission on Mathematical Geophysics (CMG)

- *International Glaciological Society*
 - Scientific Editor: Annals of Glaciology, International Symposium on Changes in Glaciers and Ice Sheets, 8-13 July 2013, Beijing, China (published 2014)
 - Reviewer “Journal of Glaciology” and “Annals of Glaciology”

- *International Statistical Institute*
 - Invited Speaker and Discussion Panel Member, 58th session, Dublin 2011 (Title: “Geophysical and spatial statistical approaches to understanding recent complex changes in Greenland glaciers at centimeter to ice-sheet-wide scales” in IPM 28 “Statistical analysis of nonlinear water systems”)
 - Invited Speaker and Discussion Panel Member, 52nd session, Helsinki 1999 (Title: “New approaches to the statistical analysis of satellite and remote sensing data”)

- *International Association for Mathematical Geosciences (IAMG)*
 - Preparation of Article on “Mathematical Methods in Remote Sensing Data and Image Analysis”, Earth Sciences Series. Encyclopedia of Mathematical Geosciences, edited by B. S. Daya Sagar, Qiuming Cheng, Jennifer McKinley and Frits Agterberg, Springer/Nature
 - Convener of Symposium “Advances in Remote Sensing of the Cryosphere in the Polar Regions” at the 35th International Geological Congress 2016, Cape Town, South Africa
 - Organisation of a special session on “Geomathematics, Geoinformatics and Remote Sensing” at the 34th International Geological Congress 2012, Brisbane, Australia
 - Organisation of a special session on “Spatial Analysis and Remote Sensing”, IAMG 2005 Meeting “GIS and Spatial Analysis”, Toronto, Canada (co-convener C.R. De Souza Filho, University of Campinas, Brazil)
 - Organisation of a special session on “Understanding Geology and Geophysics through Geomathematical Analysis of Remote Sensing Data”, International Geological Congress, Florence, Italy, 2004 (co-convener D. F. Merriam, University of Kansas)
 - Guest Editor of Special Issue “Inverse Theory in the Earth Sciences”, Mathematical Geology
 - Organisation of a session on “Inverse Theory”, Silver Anniversary Meeting, Prague, Czech Republic, Oct. 1993
 - Exhibitor for IAMG at the American Geophysical Union Fall Meeting, every year 2001-2019
 - Faculty Advisor, Student Chapter of IAMG at the University of Colorado Boulder, 2009-present
 - Assistant Editor of “Mathematical Geology”, since 1995
 - Associate Editor of “Computers & Geosciences” (1995-2007), Assistant Editor 1987-1994
 - Member, Nomination Committee (President, Vice President, Treasurer, Secretary General, Council) 2003/2004
 - Member of Council 1996–2000; President Nomination Committee 2003
 - Chair, President’s Prize Committee 1994; Member, President’s Prize Committee 1993

- Recipient of IAMG President’s Prize for Outstanding Contributions to Theoretical and Applied Geostatistics, 1992

- *American Geophysical Union (AGU)*
 - Reviewer “Geophysical Research Letters” , “Journal of Geophysical Research” and “Water Resources Research”
 - Convener and chair of a special session on “Exploration, Observation, and Modeling of Fast-Moving Glaciers, Ice Sheets, and Permafrost Landscapes” in the AGU Cryospheric Sciences Section, Fall Meeting, San Francisco, 2016
 - Convener and co-chair of a special session on “Innovative Mathematical Algorithms for Analysis of Geophysical Big Data” in the AGU Non-linear Geophysics Section, Fall Meeting, San Francisco, 2015
 - Convener and chair of a special session on “Linking Cryospheric Observations and Modeling” in the AGU Cryospheric Sciences Section, Fall Meeting, San Francisco, 2014
 - Convener and co-chair of a special session on “Neural Networks in Geophysics” and of a special session on “Non-Gaussian and Non-linear Techniques for Data Assimilation/Fusion, Predictability, and Uncertainty Quantification and Neural Networks” in the AGU Non-linear Geophysics Section, Fall Meeting, San Francisco, 2014
 - Convener and co-chair of a special session on “Fast Glacier Flow” in the AGU Cryospheric Sciences Section, Fall Meeting, San Francisco, 2012
 - Representation of IAMG at AGU Fall Meetings through Exhibition, Journal Editorship, Membership Services, every year 2001-2019
 - Co-Chair of Session ”Nonlinear Geophysics: Horizons” , Nonlinear Geophysics Section, Fall Meeting, San Francisco, 2010
 - Organisation of a special session on “Non-Differentiability, Non-Continuity and Roughness of Earth Surfaces” in the AGU Nonlinear Geophysics Section, Fall Meeting, San Francisco, 2010
 - Organisation of a special session on “Connecting Observations and Modeling of Glacial Change” in the AGU Cryospheric Sciences Section, Fall Meeting, San Francisco, 2010
 - Organisation of a special session on “Snow and Ice Surface Roughness and Remote Sensing” in the AGU Cryospheric Sciences Section, Fall Meeting, San Francisco, 2009
 - Organisation of a special session on “Geomathematical Methods for Information Retrieval in Complex Geophysical Systems” (co-convener Q. Cheng, York University, Canada), jointly with geophysical inverse theory in the AGU Nonlinear Geophysics Section, Fall Meeting, San Francisco, 2004
 - Organisation of a special session on “Roughness of Snow and Ice Surfaces” in the AGU Cryospheric Sciences Section, Fall Meeting, San Francisco, 2004

- *Alexander von Humboldt Association of America*
 - Member of Founding Board of Directors 1994–1997
 - Founding Member since 1994

- *International Geological Congress*
 - 35th IGC, 2016, Cape Town, South Africa: Convener of Symposium “Advances in Remote Sensing of the Cryosphere in the Polar Regions”
 - 34th IGC, 2012, Brisbane, Australia: Convener of special session “Geomathematics, Geoinformatics and Remote Sensing”
 - 32nd IGC, 2004, Florence, Italy: Convener of special session “Understanding Geology and Geophysics through Geomathematical Analysis of Remote Sensing Data”

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- *European Geophysical Society*
 - Assistant Editor of “Journal of Geodynamics” 1994–2001
 - Invited Speaker, European Geophysical Union Meeting, Vienna, 2015, 2016

 - *IEEE - Institute of Electrical and Electronics Engineers*
 - Geoscience and Remote Sensing Society (member)
 - Reviewer, Transactions in Geoscience and Remote Sensing

 - *Remote Sensing and Photogrammetry Society (UK)*
 - Reviewer, International Journal of Remote Sensing

 - *Deutsche Gesellschaft für Polarforschung*

 - *American Alpine Club*

 - *Deutscher Alpenverein*

PUBLICATION LIST

Books

- (1) DAVIS, J.C. and U.C. HERZFELD (eds.) (1993), Computers in geology: 25 years of progress, International Association for Mathematical Geology, Studies in Mathematical Geology, no. 5, Oxford University Press, New York, 298 p.
- (2) HERZFELD, U.C. and W.H. BERGER (1993), Ocean productivity and indicator variables: Map comparisons for the Atlantic and World Oceans, S.I.O. Reference Series no. 93-7, Scripps Institution of Oceanography, University of California San Diego, La Jolla, California, USA, 75 p.
- (3) HERZFELD, U.C. (1998), The 1993-1995 surge of Bering Glacier (Alaska) — a photographic documentation of crevasse patterns and environmental changes, Trierer Geographische Studien, 17, 211 pp., Geographische Gesellschaft Trier und Fachbereich VI – Geographie/Geowissenschaften, Universität Trier
- (4) HERZFELD, U.C. (2004), ATLAS OF ANTARCTICA — Topographic Maps from Geostatistical Analysis of Satellite Radar Altimeter Data, Springer Verlag Heidelberg, New York, Tokyo, 364+XVI pp., 145 maps, 25 figs, 5 tables, 1 chart, CDROM
- (5) HERZFELD, U. C., Detecting Changes in the Earth System with a Spaceborne Laser Altimeter System: A Universal, Cross-Disciplinary Algorithm for Analysis of ICESat-2 data, Monograph in SpringerBriefs in Earth Sciences. Publisher: Springer Nature Switzerland AG (in preparation)

Services as Journal Editor

Associate Editor: Computers & Geosciences, International Association for Mathematical Geology (1995-2007, Assistant Editor 1987–1994)

Assistant Editor: Mathematical Geology, International Association for Mathematical Geology (1994-2010)

Assistant Editor: Journal of Geodynamics, European Geophysical Society (1994-1997)

Editor: Inverse Theory in the Earth Sciences, Special Issue, Mathematical Geology, vol. 28, no. 2 (1996); Introduction to the Special Issue: p. 133-251

Scientific Editor: Annals of Glaciology, International Symposium on Changes in Glaciers and Ice Sheets, 8-13 July 2013, Beijing, China (2013)

Guest Editor: Special Issue "Mathematical Models for Remote Sensing Image and Data Processing" of the Journal "Remote Sensing", published by MDPI (2018-2019)

Theses

- (1) HERZFELD, U.C., Formationen und Einbettungseigenschaften endlicher auflösbarer Gruppen, Wiss. Arbeit Lehramt Gymnasien, Fachbereich Mathematik, Johannes Gutenberg-Universität Mainz, West Germany (1983), 128 p.
(Thesis) [Formations and Embedding Properties of Finite Soluble Groups, Master Thesis, Department of Mathematics, Johannes Gutenberg-University Mainz, Germany (December 1983)] (Advisor: Klaus Doerk)
- (2) HERZFELD, U.C., Frattiniklassen und Maximale Teilklassen, Insbesondere zu Formationen Endlicher Gruppen, Dissertation, Doktor der Naturwissenschaften (doctor rerum naturalium), Fachbereich Mathematik, Johannes Gutenberg-Universität Mainz, West Germany (26.06.1986), [Frattini Classes and Maximal Subclasses, Especially of Formations of Finite Groups, Dissertation (PhD Thesis), Doctor of Natural Sciences, Department of Mathematics, Johannes Gutenberg-University Mainz, Germany (26 June 1986)] (Advisor: Klaus Doerk)

- (3a) HERZFELD, U.C. (1986), Kartographische Auswertung bathymetrischer Daten mit Hilfe geostatistischer Prädiktion, Berliner Geowissenschaftliche Abhandlungen A, Freie Universität Berlin, [Cartographical Evaluation of Bathymetric Data using Geostatistical Prediction, Berliner Geowissenschaftliche Abhandlungen A, Freie Universität Berlin]
- (3b) HERZFELD, U.C. (1986), Kartographische Auswertung bathymetrischer Daten mit Hilfe geostatistischer Prädiktion, Berliner Geowissenschaftliche Abhandlungen A, Freie Universität Berlin, [Cartographical Evaluation of Bathymetric Data using Geostatistical Prediction, Berliner Geowissenschaftliche Abhandlungen A, Freie Universität Berlin] same as (3a), accepted as Projektarbeit 1 zum Weiterbildenden Studium “Mathematische Methoden und Modelle in den Geowissenschaften”, Institut für Geologie - Mathematische Geologie -, Freie Universität Berlin (1986) [accepted as Thesis 1 for Graduate Studies “Mathematical Methods and Models in the Geosciences” Certificate Program, Institute for Geology - Mathematical Geology, Free University of Berlin (1986)]
- (4) HERZFELD, U.C. and A.M. AUCOUR, Thematische Kartierung eines Shebka-Gebiets (Siwa-Oase, Ägypten) durch digitale Satellitenbilddauswertung, Institut für Geologie - Mathematische Geologie -, Freie Universität Berlin (1986), 30 p. (Projektarbeit 2 zum Weiterbildenden Studium “Mathematische Methoden und Modelle in den Geowissenschaften”, Thesis for Graduate Studies “Mathematical Methods and Models in the Geosciences”) [Thematic Mapping of a Shebka Oasis (Siwa Oasis, Egypt) Using Digital Satellite Image Analysis, Thesis 2 for Graduate Studies “Mathematical Methods and Models in the Geosciences” Certificate Program, Institute for Geology - Mathematical Geology, Free University of Berlin (1986)]

Algorithm Theoretical Base Documents (Reviewed)

- (1) PALM, S., Y. YANG and U.C. HERZFELD (2014) ICESat-2 Atmosphere Products Algorithm Theoretical Base Document, Version 4.0, November 1, 2014, 160 pp. (submitted to NASA Headquarters via the NASA ICESat-2 Project)
- (2) HERZFELD, U.C., S. PALM and Y. YANG (2015) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part II: Detection of Atmospheric Layers and Surface Using a Density Dimension Algorithm (Code version v103), v5.0, 4 June 2015, 109 pp. (NASA ICESat-2 Project)
- (3) PALM, S., Y. YANG and U.C. HERZFELD (2015) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part I: Level 2 and Level 3 Data Products, v5.0, June 4, 2015, 58p. (NASA ICESat-2 Project)
- (4) HERZFELD, U.C., S. PALM and Y. YANG (2015) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part II: Detection of Atmospheric Layers and Surface Using a Density Dimension Algorithm (Code version v105), v6.0, 31 October 2015, 153 pp. (NASA ICESat-2 Project)
- (5) PALM, S., Y. YANG and U.C. HERZFELD (2015) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part I: Level 2 and Level 3 Data Products, v6.0, October 31, 2015, 60p. (NASA ICESat-2 Project)
- (6) HERZFELD, U.C. and S. PALM (2016) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part II: Detection of Atmospheric Layers and Surface Using a Density Dimension Algorithm (Code version v106), v7.0, 24 August 2016, 163 pp. (NASA ICESat-2 Project)
- (7) HERZFELD, U.C. and S. PALM (2016) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part II: Detection of Atmospheric Layers and Surface Using a Density Dimension Algorithm (Code version v106), v7.1, 23 September 2016, 163 pp. (NASA ICESat-2 Project)
- (8) PALM, S., Y. YANG and U.C. HERZFELD (2016) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part I: Level 2 and Level 3 Data Products, v7.0, September 1, 2016, 58 pp. (NASA ICESat-2 Project)
- (9) HERZFELD, U.C. and S. PALM (2017) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part II: Detection of Atmospheric Layers and Surface Using a Density Dimension Algorithm (Code version v110), v8.0, 17 November 2017, 237 pp. (NASA ICESat-2 Project)
- (10) PALM, S., Y. YANG and U.C. HERZFELD (2017) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part I: Level 2 and Level 3 Data Products, v7.3, November 15, 2017, 79 pp. (NASA ICESat-2 Project)

- (11) HERZFELD, U.C. and S. PALM (2018) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part II: Detection of Atmospheric Layers and Surface Using a Density Dimension Algorithm (Code version v110), v8.1, 21 March 2018, 255 pp. (NASA ICESat-2 Project)
- (12) PALM, S., Y. YANG and U.C. HERZFELD (2018) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part I: Level 2 and Level 3 Data Products, v7.5, 16 June 2018, 83 pp. (NASA ICESat-2 Project)
- (13) HERZFELD, U.C. and S. PALM (2018) ICESat-2 Algorithm Theoretical Base Document for the Atmosphere, Part II: Detection of Atmospheric Layers and Surface Using a Density Dimension Algorithm (Code version v111), v9.0, 20 December 2018, 288 pp. (NASA ICESat-2 Project)
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- (2) NASA ICESat-2 ATL09_v001 Data Product: ATLAS/ICESat-2 L3A Calibrated Backscatter Profiles and Atmospheric Layer Characteristics, Version 1 (released May 2019), Data Contributors: Steve Palm, Ute Herzfeld, Yuekui Yang, David Hancock, Kristine Barbieri, Jesse Wimert, publisher: NASA National Snow and Ice Data Center (NSIDC) Distributed Active Archive Center, Boulder, Colorado, U.S.A.
(<https://nsidc.org/data/ATL09>), doi=10.5067/ATLAS/ATL09.001
- (3) NASA ICESat-2 ATL04_v002 Data Product: ATLAS/ICESat-2 L2A Normalized Relative Backscatter Profiles, Version 2 (released October 2019), Data Contributors: Steve Palm, Ute Herzfeld, Yuekui Yang, David Hancock, Kristine Barbieri, Jesse Wimert, publisher: NASA National Snow and Ice Data Center (NSIDC) Distributed Active Archive Center, Boulder, Colorado, U.S.A.
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- (4) NASA ICESat-2 ATL09_v002 Data Product: ATLAS/ICESat-2 L3A Calibrated Backscatter Profiles and Atmospheric Layer Characteristics, Version 2 (released October 2019), Data Contributors: Steve Palm, Ute Herzfeld, Yuekui Yang, David Hancock, Kristine Barbieri, Jesse Wimert, publisher: NASA National Snow and Ice Data Center (NSIDC) Distributed Active Archive Center, Boulder, Colorado, U.S.A.
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- (5) NASA ICESat-2 ATL04_v003 Data Product: ATLAS/ICESat-2 L2A Normalized Relative Backscatter Profiles, Version 3 (released June 2020), Data Contributors: Steve Palm, Ute Herzfeld, Yuekui Yang, David Hancock, Kristine Barbieri, Jesse Wimert, publisher: NASA National Snow and Ice Data Center (NSIDC) Distributed Active Archive Center, Boulder, Colorado, U.S.A.
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- (6) NASA ICESat-2 ATL09_v003 Data Product: ATLAS/ICESat-2 L3A Calibrated Backscatter Profiles and Atmospheric Layer Characteristics, Version 3 (released June 2020), Data Contributors: Steve Palm, Ute Herzfeld, Yuekui Yang, David Hancock, Kristine Barbieri, Jesse Wimert, publisher: NASA National Snow and Ice Data Center (NSIDC) Distributed Active Archive Center, Boulder, Colorado, U.S.A.
(<https://nsidc.org/data/ATL09>), doi=10.5067/ATLAS/ATL09.003
- (7) NASA ICESat-2 ATL04_v004 Data Product: ATLAS/ICESat-2 L2A Normalized Relative Backscatter Profiles, Version 4 (released February 2021), Data Contributors: Steve Palm, Ute Herzfeld, Yuekui Yang, David Hancock, Kristine Barbieri, Jesse Wimert, publisher: NASA National Snow and Ice Data Center (NSIDC) Distributed Active Archive Center, Boulder, Colorado, U.S.A.
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- (11) NASA ICESat-2 ATL04.v006 Data Product: ATLAS/ICESat-2 L2A Normalized Relative Backscatter Profiles, Version 6 (to be released December 2022), Data Contributors: Steve Palm, Ute Herzfeld, Yuekui Yang, David Hancock, Kristine Barbieri, Jesse Wimert, publisher: NASA National Snow and Ice Data Center (NSIDC) Distributed Active Archive Center, Boulder, Colorado, U.S.A.
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- (226) UTE HERZFELD, Surface-height and cloud retrieval from ICESat-2 over complex surfaces and relevance for modeling of complex processes, Inter-Agency Arctic Workshop, National Center for Atmospheric Research, Boulder, April 9, 2018 (oral presentation)
- (227) UTE HERZFELD, THOMAS TRANTOW, GAVIN MEDLEY, ALEC STILLER, SAMUEL BENNETTS, STEPHEN PALM, DAVID HARDING, PHIL DABNEY (2018) Airborne and ICESat-2 Surface Height Retrieval over Complex and Crevassed Terrain — Relevance for Ice-Dynamic Modeling and Elevation-Change Assessment, Community Earth System Modeling (CESM) Workshop, Joint Land Ice and Polar Climate Working Group Session, National Center for Atmospheric Research, Boulder, 18-20 June 2018 (oral presentation)
- (228) THOMAS TRANTOW, UTE HERZFELD (2018), Constraining Model Parameters using Surge Crevassing, Community Earth System Modeling (CESM) Workshop, Joint Land Ice and Polar Climate Working Group Session, National Center for Atmospheric Research, Boulder, 18-20 June 2018 (oral presentation)
- (229) UTE HERZFELD, STEPHEN PALM, THOMAS TRANTOW and TASHA MARKLEY, Detection of tenuous cloud layers, aerosols and blowing snow and applications in climate science and transportation hazard assessment ? Post-launch update, ICESat-2 Early Adopter Benchmark Meeting, Boulder, Oct 31-Nov 1, 2018
- (230) UTE HERZFELD, THOMAS TRANTOW, CONNOR MYERS, ANNIE ZAINO (2018), Evaluation of ICESat-2 Surface Height Determination over Crevassed and Other Complex Ice Surfaces: Negribreen, Svalbard, During Surge and Fast-Moving Greenland Glaciers, American Geophysical Union Fall

Meeting 2018, Washington, DC, 10-14 December 2018 (abstract and presentation)

- (231) THOMAS TRANTOW, UTE HERZFELD, VEIT HELM, JOHAN NILSSON (2018) Effects of CryoSat-2 Processing Techniques on Modeled Ice Dynamics in a Large Alaskan Mountain Glacier, American Geophysical Union Fall Meeting 2018, Washington, DC, 10-14 December 2018 (abstract and presentation)

Published Abstracts and Presentations 2019

- (232) UTE HERZFELD, THOMAS TRANTOW (2019) Towards a new community software for data-model connection, Community Earth System Modeling (CESM) Workshop, Joint Land Ice, and Polar Climate and Paleoclimate Working Group Meeting, National Center for Atmospheric Research, Boulder, 4-5 February 2019 (oral presentation)
- (233) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, ICESat-2 Lidar Measurements of the Polar Atmosphere, American Meteorological Society, 99th Annual Meeting, Phoenix, Arizona, USA, 6-10 January 2019
- (234) UTE HERZFELD, THOMAS TRANTOW, TASHA MARKLEY and MATTHEW LAWSON, Data-Model Integration and the Role of Cyber-Infrastructure, CESM Summer Workshop Boulder, Polar Climate and Land Ice Working Group, June 17-19, 2019 (oral presentation)
- (235) UTE HERZFELD, THOMAS TRANTOW, On the role of subglacial topographic observations and analysis in ice-dynamic modeling, Abstract for the IGS International Symposium on “Five Decades of Radioglaciology”, Stanford University, 8-12 July 2019 (accepted for oral presentation)
- (236) LAWRENCE JACK HESSBURG, TASHA MARKLEY, UTE HERZFELD, CONNOR MYERS, Machine Learning and Glaciology: Using “Deep Learning” and Physically Constrained Neural Networks to Derive Complex Glaciological Change Processes from Modern Satellite Imagery, American Geophysical Union Fall Meeting, San Francisco, 13-18 Dec 2019
- (237) ADAM HAYES, UTE HERZFELD, THOMAS TRANTOW, STEPHEN PALM, MATTHEW LAWSON, ALEC STILLER, Ice Surfaces, Clouds and Aerosols: Heights, changes and surface roughness in satellite altimetry — Comparison and Integration of Data Analyses from ICESat, CryoSat and ICESat-2, American Geophysical Union Fall Meeting, San Francisco, 13-18 Dec 2019
- (238) MATTHEW LAWSON, UTE HERZFELD, THOMAS TRANTOW, ICESat-2 and the DDA-ice: Ice surfaces and surface processes from submeter scale to ice-sheet wide scale, American Geophysical Union Fall Meeting, San Francisco, 13-18 Dec 2019
- (239) THOMAS TRANTOW, UTE HERZFELD, Constraining Ice-Dynamic Model Parameters using Crevasse Observations, American Geophysical Union Fall Meeting, San Francisco, 13-18 Dec 2019
- (240) UTE HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON, CONNOR MYERS, Negribreen, Svalbard: Surge in an Arctic Glacier or Disintegration of an Entire Glacier System? American Geophysical Union Fall Meeting, San Francisco, 13-18 Dec 2019
- (241) ELLEN BUCKLEY, SINEAD L. FARRELL, K. DUNCAN, UTE C. HERZFELD AND MELINDA WEBSTER, Sea Ice Melt Pond Properties as Observed by ICESat-2, American Geophysical Union Fall Meeting, San Francisco, 13-18 Dec 2019
- (242) MATTHIAS HERZFELD MAYER and UTE HERZFELD, Technology and Earth Observation: The Example Of ICESat-2, American Geophysical Union Fall Meeting, San Francisco, 13-18 Dec 2019
<https://agu.confex.com/agu/fm19/meetingapp.cgi/Paper/520259>

Published Abstracts and Presentations 2020

- (243) HERZFELD, UTE C., L. HESSBURG, T. TRANTOW, T. MARKLEY, M. LAWSON, Linking Satellite Data Analysis and Cryospheric Modeling via Auto-Adaptive Classification and Machine Learning: A Perspective for the Sea-Ice and Polar Climate Community, CESM Winter Workshop – Polar Climate Working Group, Boulder, Colorado, 6-7 February 2020
- (244) HERZFELD, UTE C., T. TRANTOW, L. HESSBURG, T. MARKLEY, A. DE LA PENA GONZALEZ, M. LAWSON, Linking Satellite Data Analysis and Ice-Dynamic Modeling via Auto-Adaptive Classification and Machine Learning, CESM Winter Workshop – Land Ice Working Group, Boulder, Colorado, 10-12 February 2020

- (245) HERZFELD, UTE C., Data-Driven Auto-Adaptive Classification of Cryospheric Signatures as Informants for Ice-Dynamic Models, NSF Office of Advanced Cyberinfrastructure (OAC) Cyberinfrastructure for Sustained Scientific Innovation (CSSI), P.I. Meeting, Seattle, Washington, U.S.A., 13-14 February 2020 Oral and Poster Presentation,
<https://cssi-pi-community.github.io/2020-meeting/#talks>
- (246) UTE C. HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON, ADAM HAYES, Airborne Geophysical Evaluation of ICESat-2 Altimeter Data Over the Surging Negribreen, Svalbard (2020) SIOS Online Conference on “Earth Observation (EO), Remote Sensing (RS) and Geoinformation (GI) Applications in Svalbard”, 4-5 June 2020 (SIOS - Svalbard Integrated Arctic Earth Observing System)
- (247) HERZFELD, UTE C., THOMAS TRANTOW, MATTHEW LAWSON, ADAM HAYES (2020) Glacial Acceleration, Rifting, Calving and Melt in West Antarctica and Measurement Using ICESat-2, West Antarctic Ice Sheet (WAIS) Meeting, September 2020 (virtual meeting)
- (248) HERZFELD, UTE C., MATTHEW LAWSON, ADAM HAYES, THOMAS TRANTOW (2020) ICESat-2, SkySat, WorldView and Sentinel: Automated Extraction of High-Resolution Spatial Information for Investigation of Surging and Fast-Moving Glaciers, American Geophysical Union Fall Meeting 7-11 Dec 2020 (virtual meeting) Earth and Space Science Open Archive, doi: 10.1002/essoar.10504882.1
- (249) HAYES, ADAM, UTE HERZFELD, STEVEN PALM, DAVID HANCOCK, KRISTINE BARBIERI, ICESat-2 Atmospheric Data Product News: Capabilities of the DDA-Atmosphere for Detection of Tenuous Clouds, Aerosol Layers and Blowing Snow and Applications in Atmospheric and Climate Science Topics, American Geophysical Union Fall Meeting 7-11 Dec 2020 (virtual meeting)
- (250) STEPHEN PALM, YUEKUI YANG, UTE HERZFELD, The Atmospheric Measurements of ICESat-2, American Geophysical Union Fall Meeting 7-11 Dec 2020 (virtual meeting)
- (251) ELLEN BUCKLEY, SINEAD FARRELL, KYLE DUNCAN, UTE HERZFELD, ICESat-2 observations of melt ponds on Arctic sea ice, American Geophysical Union Fall Meeting 7-11 Dec 2020 (virtual meeting)

Published Abstracts and Presentations 2021

- (252) UTE HERZFELD, MATTHEW LAWSON, THOMAS TRANTOW, TASHA MARKLEY, ALFREDO DE LA PENA GONZALEZ and LAWRENCE HESSBURG (2021) Automated Extraction of High-Resolution Spatial Information from WorldView Data for Investigation of Surging Glaciers, 15 January 2021, Decadal Survey Meeting, NASA Community Meeting (Oral Presentation)
- (253) UTE HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON, ADAM HAYES and LAWRENCE HESSBURG (2021) The Density-Dimension Algorithm — Detection of Complex Cryospheric and Climatic Change Signatures in NASA ICESat-2 Satellite Laser Altimeter Data, Computer Science Colloquium, Department of Computer Sciences, University of Colorado Boulder, March 11, 2021 (Oral Presentation)
- (254) UTE HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON, SINÉAD FARRELL and ELLEN BUCKLEY (2021) Detecting and Measuring Melt Ponds and Ridges — an Update on the Density-Dimension Algorithm for Sea Ice (DDA-bifurcate-seaice), ICESat-2 Science Team, Sea-Ice Group, Biweekly Meeting, 2021-April 29 (Oral Presentation)
- (255) UTE C. HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON and ADAM HAYES (2021) DDA-ice and DDA-ice-class — A Cyberinfrastructure for ICESat-2 Surface-Height Determination and Classification Driven by Critical Cryospheric Science Questions, ICESat-2 Science Team Meeting (virtual meeting), May 17-20, 2021 (Oral Presentation)
- (256) STEPHEN PALM, YUEKUI YANG, UTE HERZFELD, DAVID HANCOCK and KRISTINE BARBIERI (2021) The ICESat-2 Atmospheric Data Products – Update, ICESat-2 Science Team Meeting (virtual meeting), May 17-20, 2021 (Oral Presentation)
- (257) UTE HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON and ADAM HAYES (2021) Surge-Related Changes in Negribreen, Svalbard, Observed with ICESat-2, SIOS Online Conference on “Earth Observation (EO), Remote Sensing (RS) and Geoinformation (GI) Applications in Svalbard” 8-10 June 2021 (Keynote Presentation, Oral)
- (258) UTE C. HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON and ADAM HAYES (2021) DDA-ice and DDA-ice-class — A Cyberinfrastructure for ICESat-2 Surface-Height Determination and

- Classification Driven by Critical Cryospheric Science Questions, ICESat-2 Science Team Biweekly Meeting (virtual meeting), June 9, 2021 (Oral Presentation, Expanded Version)
- (259) UTE HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON and ADAM HAYES (2021) Water on/in Ice, Glacial Melt and Acceleration Observed with ICESat-2, Sentinel-1 and Satellite Imagery, mini-PARCA online September 16, 2021 (Oral Presentation)
- (260) UTE HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON, JACK HESSBURG and ADAM HAYES (2021) Surge-Related Changes in Negribreen, Svalbard, Observed with ICESat-2, NorthWest Glaciologists Meeting, Vancouver, British Columbia (virtual meeting), October 15, 2021 (Oral Presentation)
- (261) UTE HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON, JACK HESSBURG and ADAM HAYES (2021) Changes in the Cryosphere Driven by Glacial Acceleration – Insights from Analyses of Planet Image Data and ICESat-2 Altimeter Data, Planet Explore Online Conference, October 12-13, 2021 (Invited Oral Presentation), <https://explore21.planet.com/website/25256/> and <https://explore21.planet.com/website/25256/speakers/>
- (262) UTE C. HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON and THOMAS NYLEN (2021) Airborne Geophysical Validation of ICESat-2 ATLAS Data Over Ice Surfaces: Instrumentation, Experiment Setup, Accuracies, Track Repeat and Such, ICESat-2 Science Team, Sea-Ice Group, Biweekly Meeting, October 27, 2021 (Oral Presentation)
- (263) BUCKLEY, ELLEN, SINÉAD LOUISE FARRELL, OLIVIA N. BANEY, UTE C. HERZFELD, MATTHEW WILLIAM LAWSON and THOMAS TRANTOW (2021), Evolution of Melt Pond Fraction and Depth on Multiyear Ice in 2020 from High Resolution Satellite Observations, American Geophysical Union Fall Meeting 13-17 Dec 2021(in-person and virtual meeting), Earth and Space Science Open Archive, doi.org/10.1002/essoar.10509479.2 (Poster and Abstract)
- Published Abstracts and Presentations 2022*
- (264) UTE C. HERZFELD, THOMAS TRANTOW, ADAM HAYES, HUILIN HAN, JACK HESSBURG, ELLEN BUCKELY AND SINÉAD FARRELL (2022), Modeling constraints derived from high-resolution altimeter data: Crevasses on land ice, ponds and ridges on sea ice, and other examples of complexity in the cryosphere, CESM Winter Workshop Boulder — Land Ice Working Group and Polar Climate Working Group — March 7-9, 2022 (Oral Presentation)
- (265) UTE C. HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON, ADAM HAYES AND JACK HESSBURG (2022), Lasers big and small – From ICESat-2 to the surge of Negribreen, Svalbard; International Glaciological Society, Online Seminar Series, 12 January 2022
- (266) UTE C. HERZFELD (2022), Towards Implementation of Melt-Pond Information on the ICESat-2 Sea-Ice Products: Determination of Parameters and Variables of the DDA-bif-seaice Using Airborne Campaign Data (Overview given to the Sea-ice group of the ICESat-2 Science team, 30 March 2022)
- (267) HERZFELD, UTE C., STEPHEN PALM, MARK VAUGHAN, KATHLEEN POWELL, ADAM HAYES, HUILIN HAN, DAVID HANCOCK and KRISTINE BARBIERI (2022), Detection of Tenuous Cloud and Aerosol Layers in CALIPSO and ICESat-2 Data with the Density-Dimension Algorithm, CALIPSO & CloudSat Science Team Meeting Fort Collins, September 12-14, 2022
- (268) HUILIN HAN, UTE HERZFELD, STEPHEN PALM, MARK VAUGHAN, KATHLEEN POWELL, ADAM HAYES, DAVID HANCOCK and KRISTINE BARBIERI (2022), Towards development of a new operational algorithm for detection of tenuous cloud and aerosol layers in CALIPSO data: The CALIOP Density Dimension Algorithm (CALIOP-DDA), CALIPSO & CloudSat Science Team Meeting Fort Collins, September 12-14, 2022
- (269) UTE HERZFELD, ADAM HAYES, HUILIN HAN, THOMAS TRANTOW, HAILEY KELLAKEY (2022), From Racing Glaciers, Forest Fires and Melting Ice to New NASA Satellite Missions: Computerscience Innovations Motivated by Data-Driven, Real-World Problems, Computer Science Graduate Student Seminar ? October 6, 2022
- (270) UTE C. HERZFELD, JACK HESSBURG, THOMAS TRANTOW, HUILIN HAN, TASHA MARKLEY, MATTHEW LAWSON, ALFREDO DE LA PENA GONZALEZ (2022), A Machine-Learning Approach for Classification of Crevasse Provinces Applied to Study the Surge of Negribreen, SIOS Online Conference, 12-14 October 2022

- (271) BUCKLEY, ELLEN M., SINÉAD L. FARRELL, UTE C. HERZFELD, THOMAS TRANTOW, OLIVIA N. BANEY, KYLE DUNCAN and MATTHEW LAWSON, Observing the Evolution of Summer Melt on Multiyear Sea Ice with ICESat-2 and Sentinel-2, International Glaciological Society, Online Seminar, October 2022
- (272) UTE HERZFELD, ADAM HAYES, HUILIN HAN, THOMAS TRANTOW, HAILEY KELLAKEY, SINÉAD FARRELL, ELLEN BUCKLEY, NATHAN KURTZ, THOMAS NEUMANN, RACHEL TILLING, MARCO BAGNARDI, MICHELLE HOFTON, BRYAN BLAIR, KUTALMIS SAYLAM, CHRISTOPHER PARRISH, LORI MAGRUDER, ADRIAN BORSA, NATHAN THOMAS, LAURIE PADMAN, SUSAN HOWARD (2022), Science of a Changing Earth Enabled by High-Resolution ICESat-2 Data Products ? The DDA Family of Algorithms, ICESat-2 Science Symposium, University of Texas Austin, October 24-26
- (273) UTE C HERZFELD, ADAM HAYES, THOMAS TRANTOW (2022), A High-Resolution Ice-Surface Elevation Product for the Greenland Ice Sheet, Derived from ICESat-2 ATLAS Data Analysis with the DDA-ice, ICESat-2 Science Symposium, University of Texas Austin, October 24-26
- (274) HERZFELD, UTE C., STEPHEN PALM, MARK VAUGHAN, KATHLEEN POWELL, ADAM HAYES, HUILIN HAN, DAVID HANCOCK and KRISTINE BARBIERI (2022), Detection of Tenuous Cloud and Aerosol Layers in CALIPSO and ICESat-2 Data with the Density-Dimension Algorithm, CALIPSO Group Meeting, November 3, 2022
- (275) UTE C HERZFELD, ADAM HAYES, STEPHEN P PALM, MARK VAUGHAN, DAVID HANCOCK, KRISTINE BARBIERI, HUILIN HAN (2022), Detection of Tenuous Atmospheric Layers - Cirrus, Smoke Plumes, Asian and Saharan Dust, Blowing Snow and Diamond Dust - in ICESat-2 and CALIPSO Satellite Lidar Data: Ideas and Results of the Density Dimension Algorithm for Atmospheric Lidar Data, American Geophysical Union Fall Meeting, Chicago and virtual, Dec 13-18, 2022 (accepted as oral presentation)
- (276) UTE C HERZFELD, THOMAS TRANTOW, ELLEN BUCKLEY, SINÉAD LOUISE FARRELL, HUILIN HAN, MATTHEW WILLIAM LAWSON, NATHAN T KURTZ, RACHEL TILLING, MARCO BAGNARDI, MICHELLE A HOFTON, JAMES BRYAN BLAIR, KUTALMIS SAYLAM (2022), Transformation of the Sea-Ice "Cover" in the New Arctic - Insights Into Melt Progression From ICESat-2 High-Resolution Data Analysis With the DDA-bifurcate-seaice, American Geophysical Union Fall Meeting, Chicago and virtual, Dec 13-18, 2022 (accepted as oral presentation)
- (277) HELMUT MAYER, UTE C HERZFELD, THOMAS TRANTOW, ADRIAN J LUCKMAN, MATTHEW WILLIAM LAWSON, LAWRENCE J HESSBURG (2022), The Surge of Negribreen, Svalbard, American Geophysical Union Fall Meeting, Chicago and virtual, Dec 13-18, 2022 (accepted as poster presentation)
- (278) ADAM HAYES, UTE C HERZFELD, THOMAS TRANTOW, HUILIN HAN, MATTHEW WILLIAM LAWSON (2022), A High-Resolution Ice-Surface Elevation Product for the Greenland Ice Sheet, Derived from ICESat-2 ATLAS Data Analysis with the DDA-ice, and its Potential for the Study of Glacial Acceleration and Melting, American Geophysical Union Fall Meeting, Chicago and virtual, Dec 13-18, 2022 (accepted as poster presentation)
- (279) HUILIN HAN, UTE C HERZFELD, ADAM HAYES, THOMAS TRANTOW, ELLEN BUCKLEY, SINÉAD LOUISE FARRELL, MATTHEW WILLIAM LAWSON (2022), Automated Detection and Depth Measurement of Melt Ponds on Arctic Sea Ice in ICESat-2ATLAS Data: The Density Dimension Algorithm for Bifurcating Sea-Ice Reflectors (DDA-bifurcate-seaice), American Geophysical Union Fall Meeting, Chicago and virtual, Dec 13-18, 2022 (accepted as poster presentation)

Select Recent Oral Presentations not Included in Abstracts Section (2005-2020)

Presentations 2005-2010

- (1) HERZFELD, U.C. (with contributions from Patrick McBride, Jay Zwally, John DiMarzio, Robert Thomas, William Krabill, Serdar Manizade, Gino Casassa and Andres Rivera), New DEMs for Pine Island Glacier from GLAS — Data Analysis and Glaciologic Change Detection, ICESat Science Team Meeting, March 2005, Boulder, Colorado (Oral Presentation)
- (2) HERZFELD, U.C., Recent Rapid Changes in Alaskan and Greenland Glaciers—Results from Field Work, Satellite Observations and Geostatistical Analysis, Geophysics Seminar, Colorado School of Mines, March 2005
- (3) HERZFELD, U.C., Classification of Sea-Ice Properties from Data at Multiple Scales, Cryospheric and

- Polar Processes Seminar, CIRES, Jan 2007 (Seminar)
- (4) HERZFELD, U.C., From Centimeter Scale to Continental Scale — Applications of Geoinformatics in Oceanography, Geophysics and Cryospheric, University of Northern Colorado, Greeley, Geophysics Seminar, 28 September 2007
 - (5) HERZFELD, U.C., Complex Structures in Arctic Sea Ice and a Note on Walgreen Coast, Antarctica; ICESat Science Team Meeting, March 2008, LASP, Boulder (Oral Presentation)
 - (6) HERZFELD, U.C. (with input from Ron Kwok, Jay Zwally, Alexander Marshak, Bob Adler, John Degnan, John Heinrichs, Bruce Wallin, Danielle Lirette and Steve Sucht), Experiments on Assessment of Information Gain Using a Multi-Beam Channel for ICESat-2, ICESat-2 ad-hoc Science Definition Team Meeting, Sept. 4-5, 2008, Boulder, Colorado (Oral Presentation)
 - (7) HERZFELD, U.C., Spatial Statistical Estimation and Classification — Theory and Applications from Centimeter to Continental Scale, Seminar at Colorado State University, Fort Collins, Department of Statistics, 15 September 2008
 - (8) HERZFELD, U.C., Spatial Statistics Between Remote-Sensing Technology and Cryospheric Sciences – Theory and Applications from Centimeter to Continental Scale, Seminar Electrical and Computer Engineering, University of Colorado Boulder, 23 September 2008
 - (9) HERZFELD, U.C. , Notes on the Influence of the Estimation Algorithm and Track Spacing on DEM Accuracy, ICESat Science Team Meeting, Buffalo, New York, Sept. 30 - Oct. 2, 2008 (Oral Presentation)
 - (10) HERZFELD, U.C. (with input from PatrickMcBride, Bruce Wallin, Danielle Lirette, Steve Sucht, Jay Zwally and John DiMarzio), Analysis of Elevation Changes of Pine Island Glacier and Simulation of its Spatial Characteristics, ICESat Science Team Meeting, Buffalo, New York, Sept. 30 - Oct. 2, 2008 (Oral Presentation)
 - (11) HERZFELD, U.C. , Using Satellite Data, Field Expeditions and Spatial Statistics to Study Physical Changes in Greenland and Antarctic Glaciers, Physics Seminar, Colorado State University Pueblo (February 2009)
 - (12) HERZFELD, U.C., Interpolation — Simulation — Classification: Approaches to Understanding Complex Morphogenesis of Sea Ice, Oral Presentation at NASA IPY Project Workshop, University of Colorado, Boulder, March 2009
 - (13) HERZFELD, U.C., On the Role of Ice Surface Roughness and Surface Features at Several Scales in Detection of Cryospheric Changes with ICESat and CryoSat, CryoSat/ ICESat Meeting, University of Iceland, Reykjavik, Iceland, June 2009 (Oral Presentation)
 - (14) Zaugg, E., Long, D., Edwards, M., Fladeland, M., Kolyer, R., Crocker, R., Maslanik, J., Herzfeld, U., 2009, Environmental Science Combining Data from a Small SAR on an Unmanned Aircraft with Satellite Observations: The microASAR on the NASA SIERRA UAS for the Characterization of Arctic Sea Ice Experiment (CASIE), CEOS SAR 2009: CEOS SAR Workshop Calibration and Validation, <http://uavsar.jpl.nasa.gov/ceos2009/ceoscalval.html>, Pasadena, California, (Presentation by M. Edwards)
 - (15) HERZFELD, U.C., B. WALLIN, Surface Roughness as Indicator of Geophysical Change in Greenland Glaciers and Ice Streams — Conclusions from ICESat and IceBridge Data Analysis (- and Model Implications?), Land Ice Working Group Meeting, Community Climate System Model, NCAR, Boulder, February 17, 2010 (see <http://www.cesm.ucar.edu/>)
 - (16) HERZFELD, U.C., Measurement Requirements and New Observation Technology in Quest of Studying Cryospheric Change — Examples of Using Spatial Statistics to Connect Science and Engineering, Seminar, Department of Electrical, Computer and Energy Engineering, University of Colorado Boulder, February 23, 2010
 - (17) E. Zaugg, D. Long, M. Edwards, M. Fladeland, R. Kolyer, I. Crocker, J. Maslanik, U. Herzfeld, and B. Wallin, Using the MicroASAR on the NASA SIERRA UAS in the Characterization of Arctic Sea Ice Experiment, IEEE Radar Conference, May 2010, <http://www.radar2010.com/>, (Presentation by E. Zaugg)
 - (18) HERZFELD, U.C., B. WALLIN, Ice Surface Roughness – Laser Signals – Geophysical Processes: Conclusions from ICESat and IceBridge Data Analysis, ICESat-2 Science Definition Team Meeting Presentation May 2010, Boulder, Colorado, <http://icesat.gsfc.nasa.gov/icesat2/internal/index.php>

- (19) HERZFELD, U.C., B. MCDONALD and B. WALLIN, Algorithm Development and Data Analysis of SIGMA Photon-Counting Aircraft Altimeter Measurements and Relevance for MABEL and ICESat-2 Observations, Presentation at ICESat-2 Surface and Canopy Height Finding Algorithm Workshop (Teleconference), 31 Oct 2010 and 2 Nov 2010,
- (20) HERZFELD, U.C., B. MCDONALD and B. WALLIN, Algorithm Development and Data Analysis of SIGMA Photon-Counting Aircraft Altimeter Measurements and Relevance for MABEL and ICESat-2 Observations — New Results, Presentation at ICESat-2 Science Definition Team Vegetation Teleconference, 16 Nov 2010
- (21) HERZFELD, U.C., Bridging Observations and Models Through Physically Constrained Mathematical Data Analysis, talk presented at a special AGU dinner meeting “Observational Requirements to Improve Ice Sheet Models”, organized by Center for Remote Sensing of Ice Sheets (CReSIS), University of Kansas, AGU Fall Meeting Dec 13. 2010

Presentations 2011 (Presentations without Abstracts or Available on Password-Protected Sites)

- (22) HERZFELD, U.C., B.F. WALLIN, P.A. CHEN, C. LEUSCHEN, R. GREVE and A. ASCHWANDEN, Connecting Observations and Modeling: Importance of Bed Topography in Dynamic Ice Sheet Models and Scale-dependent Simulations, Community Earth System Modeling (CESM) Land Ice Working Group Meeting, NCAR, Boulder, Colorado, Jan 12-13, 2011, Presentation at <http://www.cesm.ucar.edu/>
- (23) HERZFELD, UTE C., Spatial Roughness and Spatial Characterization of Sea Ice, Community Earth System Modeling (CESM) Polar Working Group Meeting, NCAR, Boulder, March 1, 2011, Presentation at <http://www.cesm.ucar.edu/>
- (24) HERZFELD, UTE C., Algorithm Development and Data Analysis of SIGMA Photon-Counting Aircraft Altimeter Measurements and Relevance for MABEL and ICESat-2 Observations, ICESat-2 Science Definition Team Meeting, February 23-24, 2011, NASA Goddard Space Flight Center, Greenbelt, Maryland, Oral presentation available on ICESat-2 Science Definition Team website
- (25) HERZFELD, UTE C., Roughness and Ice Dynamics From Spatial Statistics and Waveform Analysis, ICESat-2 Science Definition Team Meeting, February 23-24, 2011, NASA Goddard Space Flight Center, Greenbelt, Maryland, Oral presentation available on ICESat-2 Science Definition Team website
- (26) HERZFELD, UTE C., Interpolation - Simulation - Classification: Mathematics as a Bridge Between Cryospheric Sciences, Observations and Engineering, NASA Goddard Space Flight Center, Cryospheric Sciences Branch, Greenbelt, Maryland, Seminar February 25, 2011
- (27) HERZFELD, UTE C., First results from analyses of MABEL data over forested areas and snow surfaces [and remarks on processing of ICESat-2 data from complex and diffuse reflectors (forests, clouds, blowing snow, rough ice areas)], ICESat-2 Science Definition Team Meeting, University of California San Diego, La Jolla, California, September 7-8, 2011, Oral presentation available on ICESat-2 Science Definition Team website

Presentations 2012 (Presentations without Abstracts or Available on Password-Protected Sites)

- (28) HERZFELD, UTE C., Complexity in Sea Ice, Glaciers and Ice Sheets – Observation, Analysis, Parameterization and Implications for Modeling, Seminar, Los Alamos National Laboratory, March 7, 2012
- (29) HERZFELD, UTE C. and BRIAN MCDONALD, Surges of Bering Glacier, Cordova High School, Science class (9th grade science class, September 2012)
- (30) HERZFELD, UTE C. and BRIAN MCDONALD, Surges of Bering Glacier, Cordova High School, Science class (11 and 12th grade science classes, September 2012)
- (31) HERZFELD, UTE C., STEPHEN PALM and BRIAN MCDONALD, Algorithm Development for MABEL and Implications for ICESat-2 Data Analysis: Applications to Atmosphere and Ice Surfaces, ICESat-2 Science Definition Team Meeting, University of Texas Austin, October 29-30, 2012 (Presentation; Talk available on ICESat-2 Science Definition Team website)
- (32) STEPHEN PALM, YUEKI YANG and UTE HERZFELD, ICESat-2 Atmospheric Data Products and Algorithm Development, ICESat-2 Science Definition Team Meeting, University of Texas Austin, October 29-30, 2012 (Presentation given by UCH; Talk available on ICESat-2 Science Definition Team website)
- (33) HERZFELD, UTE C., From ICESat-2 to Bering Glacier, Alaska — New Approaches in Laser Altimetry

to Help Us Understand Changes and Dynamics of the Cryosphere, Department Seminar, Electrical, Computer and Energy Engineering, University of Colorado Boulder, November 6, 2012

Presentations 2013 (Presentations without Abstracts or Available on Password-Protected Sites)

- (34) HERZFELD, UTE C., The 2011-2012 Surge of Bering Glacier, Alaska, Lafayette Elementary School, 4th Grade, Science class, 23 January 2013
- (35) HERZFELD, UTE C., STEPHEN PALM, BRIAN MCDONALD and JESSICA SEERSMA, Results from Analyses of MABEL Data: Cloud Boundaries and Cloud Layers, Vegetation and Ice Surfaces, ICESat-2 Science Definition Team Meeting, NASA Goddard Space Flight Center, 5-6 May 2013 (Presentation available on ICESat-2 Science Definition Team website) Science Definition Team
- (36) STEPHEN PALM, YUEKI YANG and UTE HERZFELD, ICESat-2 Atmospheric Data Products and Algorithm Development, ICESat-2 Science Definition Team Meeting, NASA Goddard Space Flight Center, 5-6 May 2013 (Presentation available on ICESat-2 Science Definition Team website)
- (37) STEPHEN PALM, YUEKI YANG and UTE HERZFELD, Progress in ICESat-2 Atmospheric Data Products and Algorithm Development, ICESat-2 Atmosphere Algorithm Telecon, August 2013 (Presentation available on ICESat-2 Science Definition Team website)

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- (38) STEPHEN PALM, YUEKI YANG and UTE HERZFELD, ICESat-2 Atmospheric Data Products and Algorithm Development, ICESat-2 Science Definition Team Meeting, University of California San Diego, January 2014 (Presentation available on ICESat-2 Science Definition Team website)
- (39) HERZFELD, UTE C., MICHAEL LEFSKY, DAVID HARDING, BRIAN MCDONALD and BRUCE WALLIN, 2014, MABEL and MATLAS Data Analysis: Mathematical Algorithms, Application and Validation using GLIHT data, ICESat-2 Science Definition Team Meeting, NASA Goddard Space Flight Center, 11-12 May 2014 (Presentation available on ICESat-2 Science Definition Team website)
- (40) HERZFELD, UTE C., STEPHEN PALM and BRIAN MCDONALD, 2014, Detection of clouds and other atmospheric layers in MABEL and M-ATLAS data using a density dimension algorithm, ICESat-2 Science Definition Team Meeting, NASA Goddard Space Flight Center, 11-12 May 2014 (Presentation available on ICESat-2 Science Definition Team website)
- (41) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, 2014, ICESat-2 Atmospheric Data Products and Algorithm Development, ICESat-2 Science Definition Team Meeting, NASA Goddard Space Flight Center, 11-12 May 2014 (Presentation available on ICESat-2 Science Definition Team website)

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- (42) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, Atmospheric Applications of ICESat-2, ICESat-2 Science Definition Team Meeting, NASA Goddard Space Flight Center, February 2015 (Presentation available on ICESat-2 Science Definition Team website)
- (43) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, ICESat-2 Atmosphere Algorithm Theoretical Base Document (ATBD), Presentation given to NASA's ICESat-2 ATBD Review Panel, February 2015
- (44) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, ICESat-2 Atmospheric Data Products and Algorithm Development, ICESat-2 Science Definition Team Meeting, University of Washington, Seattle, October 2015 (Presentation available on ICESat-2 Science Definition Team website)

Presentations 2016 (Presentations without Abstracts or Available on Password-Protected Sites)

- (45) UTE HERZFELD, Greenland and Alaska Ice Surface Roughness, Firn Cover and Glacial Acceleration — Challenges and Possibilities Indicated by Analysis of MABEL and SIMPL Data, ICESat-2 Science Definition Team Meeting, Jet Propulsion Laboratory, Pasadena, California, April 11-14, 2016
- (46) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, ICESat-2 Atmospheric Data Products and Algorithm Development, ICESat-2 Science Definition Team Meeting, Jet Propulsion Laboratory, Pasadena, California, April 11-14, 2016

- (47) UTE C. HERZFELD, THOMAS TRANTOW, GAVIN MEDLEY, DAVID HARDING, WILLIAM COOK, THORSTEN MARKUS, THOMAS NEUMANN and KELLY BRUNT, Changes in Greenland and Alaska Ice Surface Roughness and Relationships to Glacial Acceleration - Analyses using Altimeter Data from ICESat GLAS and ICESat-2 Simulator Instruments, CIRES Science Rendezvous, May 13, 2016
- (48) THOMAS TRANTOW and UTE HERZFELD, Changes in the Earth's largest surge glacier system from satellite and airborne altimetry and imagery, CIRES Science Rendezvous, May 13, 2016
- (49) UTE C. HERZFELD, THOMAS TRANTOW, GAVIN MEDLEY A Multi-Model-Data Comparison Approach for ISMIP-6 and Greenland Observations: MAPCOMP, ICESat-2 Outlook and Greenland Bed Topography, ISMIP-6 Workshop, San Francisco, Dec 11, 2106

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- (50) UTE HERZFELD, STEPHEN PALM and MARK VAUGHAN, Detection of tenuous cloud layers, aerosols and blowing snow and applications in climate science and transportation hazard assessment, Joint ICESat-2 Atmospheric Tutorial with CALIPSO, EARTHCARE, ADM-AEOLUS and CATS, May 31-June 1, 2017, hosted by the NASA Ice, Cloud and land Elevation Satellite-2 (ICESat-2) Mission and the University of Colorado Boulder
- (51) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, The ICESat-2 Atmospheric Channel: Characteristics and Planned Products, Joint ICESat-2 Atmospheric Tutorial with CALIPSO, EARTH-CARE, ADM-AEOLUS and CATS, May 31-June 1, 2017, hosted by the NASA Ice, Cloud and land Elevation Satellite-2 (ICESat-2) Mission and the University of Colorado Boulder
- (52) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, Validation of ICESat-2 Atmospheric Data Products, ICESat-2 Science Definition Team Meeting, Boulder, Colorado, 16-18 October 2017
- (53) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, Status of Algorithm Development for Atmospheric Data Products, ICESat-2 Science Definition Team Meeting, Boulder, Colorado, 16-18 October 2017

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- (54) UTE HERZFELD, Applications of Blowing Snow Information in Transportation Hazard Warning and Climate Model Sensitivity, Early Adopter Round Table - ICESat-2 Land-Vegetation and Atmospheric Science Data, 20 Feb 2018, online workshop hosted by the NASA Ice, Cloud and land Elevation Satellite-2 (ICESat-2) Mission (oral presentation)
- (55) UTE HERZFELD, STEPHEN PALM and MARK VAUGHAN, Detection of tenuous cloud layers, aerosols and blowing snow and applications in climate science and transportation hazard assessment, Early Adopter Round Table - ICESat-2 Land-Vegetation and Atmospheric Science Data, 20 Feb 2018, online workshop hosted by the NASA Ice, Cloud and land Elevation Satellite-2 (ICESat-2) Mission (oral presentation)
- (56) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, ICESat-2 Atmospheric Data: Characteristics and Applications, Early Adopter Round Table - ICESat-2 Land-Vegetation and Atmospheric Science Data, 20 Feb 2018, online workshop hosted by the NASA Ice, Cloud and land Elevation Satellite-2 (ICESat-2) Mission (oral presentation)
- (57) UTE HERZFELD, STEPHEN PALM, ICESat-2 ATBD for the Atmosphere: Quality Assessment, Evaluation and Improvement Plans after Launch: Atmospheric Layer Products, ICESat-2 SDT and ATBD Meeting, CalTech, Pasadena, California, 1-3 May 2018
- (58) UTE HERZFELD, Lasers Large and Small — From the Surge of Negribreen, Svalbard, to NASA's ICESat-2 Mission, Seminar in Electrical, Computer and Energy Engineering, University of Colorado Boulder, 10 May 2018
- (59) UTE HERZFELD, THOMAS TRANTOW, CONNOR MYERS and ANNIE ZAINO, Lasers Large and Small — From the Surge of Negribreen, Svalbard, to NASA's ICESat-2 Mission: Update on Data Collection under the SIOS Pilot Project 2018; Seminar presented at the University Centre in Svalbard (UNIS), 20 July 2018
- (60) UTE HERZFELD, STEPHEN PALM, THOMAS TRANTOW and TASHA MARKLEY, Analysis of Post-Launch ICESat-2 Atmosphere Data: Parameter Optimization for Layer Detection, Quality Assessment and Comparison of Beams, ICESat-2 Science Definition Team Meeting NASA Goddard Space Flight Center, Nov 13-14, 2018 (oral presentation)

- (61) UTE HERZFELD, Lasers Large and Small — From the Surge of Negribreen, Svalbard, to NASA’s ICESat-2 Mission, Outreach presentation at Centaurus High School, Lafayette, Colorado, 30 November 2018
- (62) STEPHEN PALM, YUEKUI YANG and UTE HERZFELD, ICESat-2 Atmospheric Data Products, Update after Launch of ICESat-2, ICESat-2 Science Definition Team Meeting NASA Goddard Space Flight Center, Nov 13-14, 2018 (oral presentation)

Presentations 2019 (Presentations without Abstracts or Available on Password-Protected Sites)

- (63) UTE HERZFELD, THOMAS TRANTOW, STEPHEN PALM, MATTHEW LAWSON and TASHA MARKLEY, On Clouds and Ground, ICESat-2 Science Definition Team Meeting, University of Colorado Boulder, April 16-18, 2019 (oral presentation)
- (64) UTE HERZFELD, THOMAS TRANTOW, with help from CONNOR MYERS, SAMUEL BENNETTS, ANNIE ZAINO, MATTHEW LAWSON, TASHA MARKLEY and MOHAMED AL-RASBI, Negribreen ICESat-2: Validation of ICESat-2’s Capability to Capture Complex Glaciated Terrain, ICESat-2 Science Definition Team Meeting, University of Colorado Boulder, April 16-18, 2019 (oral presentation)
- (65) UTE HERZFELD, Use of WorldView Data in Cryospheric Sciences, invited presentation at a NASA-internal meeting, Rockville, Maryland, May 31, 2019 (oral presentation)
- (66) UTE C. HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON, Negribreen ICESat-2 2019 — A first look at data collected during our ICESat-2 evaluation campaign (Svalbard, August 2019); ICESat-2 Science Team teleconference, September 18, 2019
- (67) UTE C. HERZFELD, ADAM HAYES, STEPHEN PALM, DAVID HANCOCK, KRISTINE BARBIERI, Atmospheric Layer Detection Using the DDA-atmosphere (ATL09): Update on Implementation and Optimization of Algorithm Performance; ICESat-2 Science Team Meeting, Seattle, October 28-30, 2019 (oral presentation)
- (68) UTE C. HERZFELD, ADAM HAYES, STEPHEN PALM, DAVID HANCOCK, KRISTINE BARBIERI, On Clouds and Ground; ICESat-2 Science Team Meeting, Seattle, October 28-30, 2019 (oral presentation)
- (69) UTE C. HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON, JACOB HANS, ALFREDO DE LA PENA GONZALES, SINÉAD FARRELL AND ELLEN BUCKLEY, DDA-ice and DDA-ice-class — A Cyberinfrastructure for ICESat-2 Surface-Height Determination and Classification Driven by Critical Cryospheric Science Questions; ICESat-2 Science Team Meeting, Seattle, October 28-30, 2019 (oral presentation)

Presentations 2020 (Presentations without Abstracts or Available on Password-Protected Sites)

- (70) UTE C. HERZFELD, THOMAS TRANTOW, MATTHEW LAWSON, ADAM HAYES, DDA-ice and DDA-ice-class - A Cyberinfrastructure for ICESat-2 Surface-Height Determination and Classification Driven by Critical Cryospheric Science Questions, ICESat-2 Science Team Meeting virtual meeting, September 20-21, 2020

For Presentations 2021, 2022 – please see items under published presentations and abstracts