

Remote Sensing Technology Institute

Institut für Methodik der Fernerkundung

Scientific Record 2018 – 2023



This living document reports the current status of IMF's and TUM-LMF/SiPEO's scientific activities and achievements starting from 2018. Sort criteria and template follow the structure of DLR institute reports.

Scientific Record 2018 – 2023

(01.03.2024)

This Documentation chapter covers scientific activities of IMF and TUM-LMF/-SiPEO staff in the time period between January 2018 and December 2023.

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Teaching and Education

Lectures at Technical University of Munich (TUM)

University courses conducted by IMF/LMF/SiPEO staff from 2018 until 2023 (lecturers of TUM-LMF/SiPEO until 2021 in *italic typeface*). Winter semester courses are listed in the year of beginning.

University	Title	Lecturers	2018	2019	2020	2021	2022	2023	2024
TUM	Remote Sensing Sensors	Eineder, M. Gomba, G.						■	
TUM	Photogrammetrie und Fernerkundung IV (Vorlesung + Übung)	<i>Körner, M.</i> <i>Auer, S.</i> <i>Schmitt, M.</i> <i>Eineder, M.</i>	■	■	■	■			
TUM	Satellitenfernerkundung (Vorlesung + Übung)	<i>Körner, M.</i> <i>Auer, S.</i> <i>Schmitt, M.</i> <i>Eineder, M.</i>	■	■	■	■			
TUM	Systems Theory and Signal Processing (Lecture + Tutorial)	Bamler, R. Zhu, X.	■	■	■	■	■		
TUM	Systemtheorie u. Signalverarbeitung (Vorlesung + Übung)	Bamler, R. Zhu, X.	■	■	■	■	■		
TUM	Introduction into Microwave and SAR Remote Sensing	Eineder, M.	■	■	■	■	■	■	
TUM	Estimation Theory and Machine Learning (Lecture + Tutorial)	Bamler, R. Kurz, F. Zhu, X. <i>Körner, M.</i>			■	■	■		
TUM	Schätztheorie (Vorlesung + Übung)	Bamler, R. Kurz, F. Zhu, X.	■	■	■	■	■		
TUM	Remote Sensing – Advanced Methods	Camero, A., Eineder, M. Trautmann, T. Wang, Y., Zhu, X. <i>Schmitt, M.</i>	■	■	■	■	■	■	
TUM	Seminar Remote Sensing	Zhu, X.	■	■	■	■	■		
TUM	Lab for Remote Sensing Advanced Methods	Zhu, X.					■		

University	Title	Lecturers	2018	2019	2020	2021	2022	2023	2024
TUM	Geodetic Seminar	Bamler, R. Zhu, X. et al.					■		
TUM	Data Science in Earth Observation	Zhu, X. Camero, A. Mou, L. Wang, Y.					■	■	
TUM	Bildverstehen Grundlagen – Übung	Körner, M. Koch, T.	■						
TUM	Bildverstehen – Vertiefte Methoden	Körner, M. Liebel, L. Schneider, M.	■	■	■	■	■		
TUM	Bildverstehen – Aktuelle Ansätze des Maschinellen Lernens	Körner, M. Liebel, L. Schneider, M.	■	■	■	■	■		
TUM	Electrodynamics	Efremenko, D.	■	■	■				
TUM	Nonlinear Optimisation	Efremenko, D.	■	■					
TUM	Inverse Probleme in der Theorie des Strahlungstransports	Efremenko, D.			■	■	■	■	
TUM	Mie theory and Radiative Transfer	Efremenko, D.				■	■	■	
TUM	Multisensor-Datenfusion	Schmitt, M.	■	■					
TUM	Geographic Text Analysis	Kruspe, A.				■			
TUM	Image Analysis for Mapping	Auer, S.						■	

Lectures at other Universities

University courses conducted by IMF staff from 2018 until 2023.
Winter semester courses are listed in the year of beginning.

University	Title	Lecturers	2018	2019	2020	2021	2022	2023
Jena	SAR-Signalverarbeitung (SAR-EDU)	Auer, S. Eineder, M. Lehner, S. Pleskachevsky, A.	■	■	■	■	■	■
Alcala, SP	Hyperspectral Remote Sensing	Cerra, D.	■	■		■		
Osnabrück	Methoden digitaler Bildverarbeitung	Cerra, D.	■					
Osnabrück	Praxis Methoden digitaler Bildverarbeitung	Cerra, D.	■					
Bukarest, RO (Politehnica)	Principles of Remote Sensing	Datcu, M.	■					
Bukarest, RO (Politehnica)	Earth Observation: Principles and Methods	Datcu, M.				■	■	
Bukarest, RO (Politehnica)	Stochastic Processes for Computer Vision	Datcu, M.	■					
Bukarest, RO (Politehnica)	Computer Vision and AI	Datcu, M.		■	■	■	■	
Paris, FR (CNAM, Sorbonne, CentraleSupélec, ONERA, ESIEE)	Lecture series in the frame of the "Chaire d'excellence internationale Blaise Pascal" on EO Data Science	Datcu, M.	■	■	■			
Augsburg	Applied Remote Sensing	Fischer, P. Langheinrich, M.	■					
Wien, AU	Kryptographie	Guggemos, T.						■
München (HS)	Messtechnik II	Haschberger, P.	■	■	■	■	■	
Limassol, CY (University of Technology)	Principles of SAR-based maritime information retrieval for maritime safety and security	Jabobsen, S. Tings, B.						■
Thessaloniki, GR	Satellite Remote Sensing	Loyola, D.	■	■	■	■	■	■
Osnabrück	Fernerkundliche Umweltanalyse	Reinartz, P. Cerra, D. Heiden, U.	■	■	■	■	■	■
Hannover	Operationelle Fernerkundung	Storch, T.	■	■	■	■	■	■

University	Title	Lecturers	2018	2019	2020	2021	2022	2023
Hannover	Big Geospatial Data	Werner, M.	■					

CNAM: Conservatoire National des Arts et Métiers
 ESIEE: École Supérieure d'Ingénieurs en Électrotechnique et Électronique
 HS: Hochschule
 LMU: Ludwig-Maximilians-Universität
 ONERA: Office National d'Etudes et de Recherches Aéronautiques

Non University Courses and Tutorials

Non university courses and tutorials conducted by IMF staff between 2018 and 2023 (Courses of the LMF/SiPEO until 2021 in *italic* typeface).

Lecturer	Location	Subject	2018	2019	2020	2021	2022	2023
Azimi S. Bahmanyar, R. Henry, C.	ISPRS	Object Segmentation and Detection in Remote Sensing Images Based on Deep Learning Methods		■				
Bamler, R.	EUSAR	SAR Interferometry and Tomography	■					
Bamler, R.	CCG	SAR Interferometry	■					
Cerra, D.	CCG/ESA	Hyperspectral Remote Sensing	■	■		■	■	
Datcu, M.	CAST	Artificial Intelligence for EO	■					
Datcu, M.	DLP GRSS, IN	Artificial Intelligence for EO		■		■		
Datcu, M.	ICIP	Big Data Analytics for EO	■					
Datcu, M.	ICIP	Machine Learning meets Computational Imaging: AI for Earth Observation				■		
Datcu, M.	IEEE GRSS	AI4EO: from physics guided paradigms to quantum machine learning				■		
Datcu, M.	IEEE GRSS	Earth Observation Data Intelligence and Knowledge, Discovery				■		
Datcu, M.	IEEE GRSS	From HPC to Quantum paradigms in Earth Observation				■		
Datcu, M.	IEEE GRSS	Physics Guided AI: Hybrid paradigms and Quantum Machine Learning for EO					■	
Datcu, M.	IET Intern. Radar Conference	Big SAR Data Science	■					
Datcu, M.	ISRS	Earth Observation Data Science: particularities and challenges					■	
Datcu, M.	BIT	EO Data Intelligence	■					
Datcu, M.	IGARSS	EO Big Data Intelligence	■	■				
Datcu, M.	IGARSS	From Big EO Data to Digital Twins: Hybrid AI and Quantum based Paradigms				■		
Datcu, M.	IGARSS	Physics Guided and Quantum Artificial Intelligence for Earth Observation					■	

Lecturer	Location	Subject	2018	2019	2020	2021	2022	2023
Datcu, M.	Workshop on Quantum Computing, Köln	Quantum Machine Learning	■					
Datcu, M.	Romanian Academy, RO	Space Technology: The Change of Paradigm		■				
Datcu, M.	InnEO Summer School	Explainable AI for Earth Observation				■		
Datcu, M.	CVPR	Computer Vision and beyond: Pattern Recognition for Satellite Images				■		
Datcu, M.	ONERA	AI4SAR: An Overview				■		
Datcu, M.	SONDRA, Avignon, FR	Quantum Computing, Artificial Intelligence					■	
De Zan, F.	TUM Int.	SAR Interferometry and Tandem-L		■				
Eineder, M.	TUM Int.	SAR Introduction	■	■				
Eineder, M.	CCG	SAR Remote Sensing	■	■	■	■	■	
Eineder, M.	CCG/ESA	Microwave Remote Sensing	■	■				
Eineder, M.	CCG	SAR Interferometry				■	■	
Eineder, M.	CCG	Grundlagen der Radartechnik - SAR					■	
Eineder, M.	IEEE	SAR and SAR interferometry for geodetic applications					■	
Fritz, T.	CCG	Grundlagen der Radartechnik - SAR						■
Fritz, T.	TUM Int.	TerraSAR-X & TanDEM-X		■				
Gege, P.	CeNAT	WASI Training	■	■				
Gomba, G.	TUM Int.	Ionospheric Effects in SAR		■				
Hamidouche, M.	CCG	Infrared Astronomy: Unveiling the Hidden Universe	■	■	■			
Haschberger, P.	CCG	Spektrometer und Kalibrierung	■	■	■			
Imber, J. Singha, S.	FutureLearn	Using ML with SAR to monitor changing polar region and oil spills				■		
Jacobsen, S.	TUM Int.	SAR Oceanography		■		■	■	■

Lecturer	Location	Subject	2018	2019	2020	2021	2022	2023
Körner, M.	KIT	Deep Learning with Feed-Forward & Recurrent Models		■				
Krauß, T.	CCG	Fernerkundung aus dem Weltraum mit multispektralen, hyperspektralen und Stereoaufnahmen	■	■	■	■	■	■
Lehner, S.	EUSAR	Operational Remote Sensing by Exploiting Space-Based SAR Data	■					
Lehner, S.	CCG	SAR Oceanography	■					
Lichtenberg, G.	CCG/ESA	Atmospheric Remote Sensing, Radiative Transfer, Neutral Atmosphere	■				■	
Schmitt, M.	TUM Int.	Data Fusion in Remote Sensing		■				
Schreier, F.	CCG	Atmosphärische Fernerkundung – Strahlungstransportmodelle und Inversionsverfahren	■	■	■	■	■	
Somlai, I. Gege, P. Plattner, S.	ANA/Peru	Inland Water Remote Sensing					■	■
Tings, B.	University Bremen Research Alliance	Data science & big data						■
Trautmann, T.	CCG/ESA	Space-Borne Remote Sensing – Atmosphere		■		■		
Zhu, X.	EUSAR	Deep Learning in Remote Sensing	■					
Zhu, X.	WHISPERS	Deep Learning in Remote Sensing	■					
Zhu, X.	TUM Int.	Advanced InSAR		■				
Zhu, X.	Uni Fairbanks, USA	Deep learning in Remote Sensing		■				
Zhu, X.	TUM Int.	AI for Earth Observation		■				
Zhu, X.	LMU	Artificial Intelligence and Data Science in Earth Observation			■			
Zhu, X.	Bonn University	Artificial Intelligence and Data Science in Earth Observation			■			
Zhu, X.	Munich Aerospace	Artificial Intelligence and Data Science in Earth Observation			■			

Lecturer	Location	Subject	2018	2019	2020	2021	2022	2023
Zhu, X.	Lancaster University, UK	Artificial Intelligence and Data Science in Earth Observation					■	
Zhu, X.	TUM ASD Open Lecture	Artificial Intelligence and Data Science in Earth Observation – Help Shaping a Sustainable Future				■		
Zhu, X.	Intern. Summer School Augsburg	Artificial Intelligence and Earth Observation in the context of Environmental Applications					■	
Zhu, X.	Global Challenge Lab	Data Science in Earth Observation – Help Shaping a Sustainable Future					■	
Zhu, X.	MPI	Machine Learning Meets Earth Observation				■		
Zhu, X.	Oak Ridge National Lab, USA	AI4EO: Generalization and Transferability				■		
Zhu, X.	IGARSS	All you need to know about learning with limited labels for Remote Sensing				■		
Zhu, X.	Wageningen University & Research, NL	Urban Geo-information Retrieval from Social Media Data			■			

BIT: Beijing Institute of Technology
 CAST: China Academy of Space Technology
 CCG: Carl-Cranz-Gesellschaft
 CeNAT: Centro Nacional de Alta Tecnología, Costa Rica
 CNAM: Conservatoire National des Arts et Métiers
 DLP GRSS: Distinguished Lecturer Program, Geoscience and Remote Sensing Society
 ESA: European Space Agency
 EUSAR: European Conference on Synthetic Aperture Radar
 ICIP: International Conference on Image Processing
 IGARSS: International Geoscience and Remote Sensing Symposium
 ISPRS: International Society for Photogrammetry and Remote Sensing
 ISRS: Indian Society of Remote Sensing
 KIT: Karlsruher Institut für Technologie
 LMU: Ludwig-Maximilians-Universität München
 MPI: Max Planck Institut
 NASA GSFC: National Aeronautics and Space Administration, Goddard Space Flight Center
 TUM Int.: TUM International GmbH
 WHISPERS: Workshop on Hyperspectral Image and Signal Processing

Internal Seminar Series

Title	Comments
IMF Seminar	10 – 15 presentations per year, IMF and guest scientists
Seminars of IMF sections	seminars of IMF-ATP: 15 – 20 and IMF-SAR/IMF-DAS: 5 – 10 presentations per year, IMF and guest scientists
IMF Doktorandentage	annual event, 15 – 20 PhD status presentations
Doktorandenseminar TUM (LMF, SiPEO)	approx. 15 presentations per year, PhD presentations and reading sessions
TUM/DLR Summer School	annual 3 days event, 50 PhD and scientists, guest lecturers
Various Summer Schools	HGF Alliances, Munich Aerospace, SAR Education Initiative

Academic Degrees

Professorship Appointments

Professorship appointments of IMF or TUM-LMF/SiPEO (in *italic* typeface) staff between 2018 and 2023.

Name	Professorship	University	Year
Albrecht, C.	Visiting Professor	Yamagata/Japan	2023
<i>Körner, M.</i>	Vertretungsprofessor	München (TU)	2022
Schmitt, M.	Professor	München (Universität der Bundeswehr)	2021
Wang, Y.	Guest Professor	München (TU)	2021
Mou, L.	Guest Professor	München (TU)	2020
<i>Schmitt, M.</i>	Professor	München (Hochschule)	2020
Singha, S.	Assistant Adjunct Professor	Calgary/Canada	2020
Cerra, D.	Visiting Professor	Osnabrück	2018
Loyola, D.	Visiting Professor	Thessaloniki/Greece (Aristotle University)	2018

Habilitations and Venia Legendi

Habilitations awarded, supervised or completed by IMF or TUM-LMF/SiPEO (in *italic* typeface) staff between 2018 and 2023.

Name	Subject	University	Year	Reviewers
<i>Körner, M.</i>	Machine Learning and Computer Vision	München (TU)	2021	Prof. Bamler Prof. Fraundorfer Prof. Lepetit
<i>Schmitt, M.</i>	Data Fusion for SAR and Optical Remote Sensing	München (TU)	2019	Prof. Zhu Prof. Bamler Prof. Hinz

Doctoral ThesesDoctoral Theses completed by IMF or TUM-LMF/SiPEO staff (in *italic* typeface, until 2021) between 2018 and 2023.

Name	Title	University	Year	Reviewers
Kondmann, L.	Deep Learning for Time-Series Analysis of Optical Satellite Imagery	München (TU)	2023	Zhu, X. Schmitt, M. Tuia, D.
Zekoll, V.	Cloud shadow removal for high spatial resolution optical satellite data	Osnabrück	2023	Reinartz, P. Hinz, S.
Azimi, M.	Infrastructure and Traffic Monitoring in Aerial Imagery Using Deep Learning Methods.	München (TU)	2022	Bamler, R. Reinartz, P. Fraundorfer, F.
Coca, I.	Sensor Deep Learning: Reconstruction and Prediction of Multispectral Satellite Images	Bukarest	2022	Datcu, M.
Focsa, A.	Advanced Synthetic Aperture Radar Computational Imaging Methods for Monostatic and Bistatic Configurations	Bukarest	2022	Datcu, M.
Häberle, M.	Fusion of Remote Sensing Images and Social Media Text Messages for Building Function Classification	München (TU)	2022	Zhu, X. Tuia, D. Kochupillai, M.
Hochstaffl, P.	Trace gas concentration retrieval from short-wave infrared nadir sounding spaceborne spectrometers	München (LMU)	2022	Wenig, M. Trautmann, T.
Hoffmann, E.	Predicting Building Functions by Fusing Social Media and Remote Sensing Data	München (TU)	2022	Zhu, X. Jacobs, N. Petzold, F.
Hua, Y.	Deep Learning for Aerial Scene Understanding in High Resolution Remote Sensing Imagery from the Lab to the Wild	München (TU)	2022	Zhu, X. Mou, L. Lefèvre, S.
Li, Q.	Deep Learning for Building Footprint Generation from Optical Imagery	München (TU)	2022	Zhu, X. Mou, L. Fraundorfer, F.
Molina García, V.	Retrieval of cloud properties from EPIC/DSCOVR	München (TU)	2022	Doicu, A. Bamler, R. Mayer, B.
Palacios-Lopez, D.	Developing a pathway to improve large-scale gridded population modelling based on the World Settlement Footprint suite	Osnabrück	2022	Reinartz, P. Tatem, A.
Rao, L.	Retrieval of Aerosol Properties from TROPOMI Measurements	München (TU)	2022	Doicu, A. Bamler, R. Cohen, B.
Rosu, F.	A Study on Multistatic SAR Configurations	Bukarest	2022	Datcu, M.

Name	Title	University	Year	Reviewers
Wang, Z.	A new aerosol profile retrieval algorithm for high-altitude MAX-DOAS measurements and the application to the long-term observation on Zugspitze, Germany	München (TU)	2022	Doicu, A. Wenig, M.
Xia, Y.	Deep Learning based Dense Matching Optimization in Remote Sensing	München (TU)	2022	Bamler, R. Fraundorfer, F. Reinartz, P.
Baumgartner, A.	Traceable Imaging Spectrometer Calibration and Transformation of Geometric and Spectral Pixel Properties	Osnabrück	2021	Reinartz, P. Mayer, B.
del Águila Pérez, A.	High Performance Processing Algorithms of Satellite Measurements for Retrieval of Trace Gases and Cloud Properties	München (TU)	2021	Efremenko, D. Bamler, R. Budack, V.
Grivei, A.	Methods and Algorithms for Information Retrieval and Search in Satellite Image Time Series	Bukarest	2021	Datcu, M.
Sun, Y.	Large-scale LoD1 Building Model Reconstruction from a Single SAR Image	München (TU)	2021	Zhu, X. Bamler, R. Gamba, P.
Ulmer, F.	Compensation of atmospheric disturbances in differential interferometry by adoption of high resolution weather models	München (TU)	2021	Bamler, R. Eineder, M. Walter, T.
Ge, N.	Sparse Recovery in Spaceborne SAR Tomography	München (TU)	2020	Zhu, X. Bamler, R. Ferro-Famil, L.
Hu, J.	From Remote Sensing Data to Urban Patterns: A Topology Guided Data Fusion Paradigm	München (TU)	2020	Zhu, X. Bamler, R. Reinartz, P.
Huang, Z.	A Study On Synthetic Aperture Radar Image Classification With Deep Learning	Chinese Academy of Sciences	2020	Lei, B. Pan, Z. Datcu, M.
Hughes, L.	Deep Learning for Matching High-Resolution SAR and Optical Imagery	München (TU)	2020	Schmitt, M. Zhu, X. Tupin, F.
Koch, T.	Automated and Precise 3D Building Reconstruction using UAVs	München (TU)	2020	Bamler, R. Fraundorfer, F. Gerke, M.
Krieger, L.	Retrieval of glaciological parameters from SAR data and mass balance modelling of glaciers in Northeast Greenland	München (TU)	2020	Eineder, M. Bamler, R. Horwarth, M.

Name	Title	University	Year	Reviewers
<i>Mou, L.</i>	Deep learning in remote sensing video analysis	München (TU)	2020	Zhu, X. Bamler, R. Tuia, D.
<i>Qiu, C.</i>	Deep Learning for Multi-Scale Mapping of Urban Land Cover from Space	München (TU)	2020	Zhu, X. Schmitt, M.
Traganos, D.	Development of seagrass monitoring techniques using remote sensing data	Osnabrück	2020	Reinartz, P. Topouzelis, K. Waske, B.
Zhao, J.	Research on SAR Image Object/Land Fine Interpretation Methods	Shanghai (Jiao Tong)	2020	Yu, Y. Xiong, H.
<i>Bagheri, H.</i>	Fusion of TanDEM-X data and optical imagery for 3D reconstruction of urban areas	München (TU)	2019	Zhu, X. Schmitt, M. Reinartz, P.
Bittner, K.	Building Information Extraction and Refinement from VHR Satellite Imagery using Deep Learning Techniques	Osnabrück	2019	Reinartz, P. Fraundorfer, F.
Gisinger, Ch.	SAR Imaging Geodesy – Towards Absolute Coordinates with Centimeter Accuracy	München (TU)	2019	Pail, R. Eineder, M. Sörgel, U.
<i>Heublein, M.</i>	Atmospheric Tomography using GNSS and InSAR Measurements	München (TU)	2019	Hinz, S. Zhu, X.
Hong, D.	Regression-Induced Representation Learning and Its Optimizer: A Novel Paradigm to Revisit Hyperspectral Imagery Analysis	München (TU)	2019	Zhu, X. Chanussot, J. Xia, G.
<i>Kang, J.</i>	Object-based Multibaseline SAR Interferometry	München (TU)	2019	Zhu, X. Bamler, R. Sörgel, U.
Kusch, G.	Efficient Large-Scale Stereo Reconstruction using Variational Methods	München (TU)	2019	Cremers, D. Möller, M.
Liu, S.	Satellite measurements of total and tropospheric NO ₂	München (TU)	2019	Doicu, A. Bamler, R. Wenig, M.
Montazeri, S.	Geodetic Synthetic Aperture Radar Interferometry	München (TU)	2019	Zhu, X. Eineder, M. Sörgel, U.
Partovi, T.	Levels of Generalization on Automatic Building Reconstruction from Digital Surface Models	Osnabrück	2019	Reinartz, P. Fraundorfer, F.

Name	Title	University	Year	Reviewers
<i>Shi, Y.</i>	3D urban mapping with SAR interferometry	München (TU)	2019	Bamler, R. Eineder, E. Fraundorfer, F:
Yague-Martinez, N.	Investigation of novel interferometric SAR acquisition modes to support the modelling of earthquake and volcanic processes	München (TU)	2019	Eineder, M. Bamler, R: Moreira, A.
Zhuo, X.	Semantic Information Extraction from UAV Imagery and Aerial Imagery	München (TU)	2019	Bamler, R. Reinartz, P. Fraundorfer, F:
Ansari, H.	Efficient High-Precision Time Series Analysis for Synthetic Aperture Radar Interferometry	München (TU)	2018	Bamler, R. Eineder, M. Hanssen, R.
<i>Baier, G.</i>	Interferometric Algorithms for Medium Resolution Sensors with Massive Coverage	München (TU)	2018	Zhu, X. Bamler, R. Reigber, A.
<i>Göritz, A.</i>	From laboratory spectroscopy to remote sensing: Methods for the retrieval of water constituents in optically complex waters	München (TU)	2018	Bamler, R. Bracher, A. Damm, A.
Merkle, N.	Geo-localization Refinement of Optical Satellite Images by Embedding Synthetic Aperture Radar Data in Novel Deep Learning Frameworks	Osnabrück	2018	Reinartz, P. Hinz, S.

LMU: Ludwig-Maximilians-Universität München
TU: Technical University

Master/Diploma/Bachelor Theses

Master (M) / Diploma (D) / Bachelor (B) theses completed at IMF or TUM-LMF/SiPEO (in *italic typeface*, until 2021) between 2018 and 2023.

Name	Subject	University	Year	M/D/B
Bahlmann, J.	Sea Ice Drift Estimation From Sentinel-1 SAR Images	Münster	2023	M
Demir, E.	Landscape Analysis for Multi-Objective Hardware-Aware Neural Architecture Search in Earth Observation Applications	München (TU)	2023	M
Hernandez-Hernandez, H.	Masked Image Modeling for Representation Learning in Earth Observation	München (TU)	2023	M
Khandelia, S.	Multi-Vehicle Detection and Tracking in Aerial Image Sequences based on Deep Learning	München (TU)	2023	M
Kumar Ramdas, S.	Vectorized Road Centerline Extraction from Aerial Imagery Using Reinforcement Learning	Stuttgart	2023	M
Orozco, D.	Joint Energy-based Model for Remote Sensing Image Processing	München (TU)	2023	M
Salisch, T.	Road Lane Marker Localization from Airborne LiDAR Surveys for Deep Learning	Duale Hochschule Baden-Württemberg	2023	B
Sun, W.	A generative AI model of urban spaces in the face of climate change	München (TU)	2023	M
Bathmann, M. A. C.	Development of an Automated Comparison Between Sea Ice Drift Derived From SAR Acquisitions and Models and Analysis of Differences Found.	Hamburg	2022	M
Bärligea, A.	Assessment of a Variable Projection Algorithm for Trace Gas Retrieval in the Short-Wave Infrared	München (TU)	2022	B
Dong, J.	Ausreißerdetektion durch Analyse der Meereisdrift mittels Radar-Satellitendaten	Hannover (HS)	2022	B
Gapp, S.	Seamless Augmentation of Satellite Imagery for Building Damage Segmentation	Linz	2022	M
Hacker, A.	Characterization of a Pyroelectric Detector for a Spaceborne Fourier-Transform Spectrometer	München (TU)	2022	M
Liu, S.	Vehicle detection in aerial images using neural networks with synthetic training data	München (TU)	2022	M
Ramanath Tarekere, S.	Mapping the grounding line of Antarctica in SAR interferograms with machine learning techniques	München (TU)	2022	M
Scherer, A.	Analyzing Hyperspectral EO-Images with Quantum Computers	Berlin (TU)	2022	M

Name	Subject	University	Year	M/D/B
Seidl, D.	Quantum-klassisches Machine Learning am Leibniz-Rechenzentrum	München (LMU)	2022	B
Söhnen, A.	The Quantum Fourier Transform for Earth Observation	München (LMU)	2022	M
Weiß, M.	Encoding strategies to solve Sudoku with Quantum Computers	München (LMU)	2022	B
Adolph, S.	Urban dynamics in the greater Phoenix area	München (HS)	2021	B
Beheim, T.	Multi-Vehicle Detection and Tracking in Aerial Imagery Sequences using Deep Learning Algorithms	München (TU)	2021	M
Blume, A.	Development of cloud-native and scalable algorithms to estimate seagrass composition and related carbon stocks in support of the Nationally Determined Contributions of the Paris Agreement	Aachen	2021	M
<i>Chen, S.</i>	3D Building Reconstruction via 3D Instance Segmentation from Monocular Remote Sensing Imagery	München (TU)	2021	M
Galassi, F.	Bridge's Displacement Monitoring Using Persistent Scatterer SAR Interferometry	München (TU)	2021	M
<i>Gu, Z.</i>	Haze and cloud removal in multi-spectral optical satellite images for landcover classification	München (TU)	2021	M
Ip, Y. Y.	Investigations of the DInSAR derived grounding line migration in Antarctica induced by ocean tides	München (TU)	2021	M
<i>Jin, P.</i>	Deep Neural Networks for Aerial Video Recognition	München (TU)	2021	M
Kupriyanov, A.	Analysis of Airborne Infrared Measurements to Estimate Localized Methane Emissions	München (TU)	2021	M
Lengauer, J.-E.	Untersuchungen zum Einfluss verschiedener atmosphärischer Druck- und Temperaturverteilungen auf die simulierten Winde für die Aeolus-Mission	Neubrandenburg	2021	B
Liu, X.	Multi-attribute learning for aerial video understanding	München (TU)	2021	M
Pregel, A.	Monitoring urban air pollution from space with satellite imagery	München (TU)	2021	M
<i>Reiersen, G.</i>	End-to-End Aboveground Biomass Estimation with Deep Learning and RGB Drone Imagery	München (TU)	2021	M
<i>Sanjeevamurthy, P. M.</i>	InSAR Despeckling using Noise2Noise Strategy	München (TU)	2021	M
Schnell, J.	Building Section Instance Segmentation From Satellite Images Using Deep Learning Networks	Darmstadt	2021	B

Name	Subject	University	Year	M/D/B
Schuegraf, P.	Training a Fully Convolutional Neural Network with Imbalanced, Imperfect and Incomplete Data for Roof Type Segmentation	München (HS)	2021	M
Schulz, E. A.	Vergleich hyper- und multispektraler optischer Sensoren bezüglich ihres Potentials zur Bestimmung von Wasserinhaltsstoffen in Binnengewässern	Dresden (TU)	2021	M
Xiang, M.	Automatic Vehicle and Occlusion Removal in Aerial and Satellite Imagery Using Deep Learning Algorithms	Stuttgart	2021	M
Zhao, S.	Graph neural network based remote sensing domain adaptation	München (TU)	2021	M
Berghäuser, P.	Entwicklung einer UAV-Steuerungssoftware zur optimierten autonomen Rehkitzdetektion	München (HS)	2020	B
Duka, L.	Fine tuning of a haze detection threshold in atmospheric correction of spaceborne optical imagery	München (LMU)	2020	B
Greza, M.	Transferring Features between Visual and Olfactorial Neural Networks for Object	München (TU)	2020	M
Jangir, S. K.	Aerial and Satellite Image Enhancement with Super Resolution using Deep Learning	München (TU)	2020	M
Kraus, M.	Multi-Object Tracking in Aerial and Satellite Imagery	München (TU)	2020	M
Lee, C. B.	Development of a Semi-Analytical Model for Seagrass Mapping using Cloud-Based Computing and Open Sourced Optical Satellite Data	Würzburg	2020	M
Römke, R.	Optimierung und Evaluierung eines automatischen Rehkitzdetektionsalgorithmus auf Basis eines Convolutional Neural Networks (CNN)	Duale Hochschule Baden-Württemberg	2020	B
Saporta, P.	Spatio-temporal analysis of a short-term systematic phase bias in Synthetic Aperture Radar interferograms over Sicily	München (TU)	2020	M
Schneider, M.	Automatic Shadow Detection and Removal in Aerial and Satellite Imagery using CNNs	München (TU)	2020	M
Sdralia, V.	Precise Geodetic Positioning of Corner Reflectors and SAR ECR-C with Sentinel-1	München (TU)	2020	M
Seifert, K.	Entwicklung von Methoden zur Erstellung hochpräziser georeferenzierter Karten aus Luftbildern für das autonome Fahren	Würzburg-Schweinfurt (HS)	2020	B
Suo, S.	Semantic Segmentation with Remote Sensing Data and Reference Labels Based on Simulation Methods	Stuttgart	2020	M

Name	Subject	University	Year	M/D/B
Yang, W.	Automatic Registration of Optical Images and TomoSAR Point Clouds	München (TU)	2020	M
Yirong, X.	Visual question answering in high-resolution remote sensing	München (TU)	2020	M
Zagst, S.	Herausforderungen beim Aufbau eines regionalen Data Cubes	München (TU)	2020	B
Angermann, L.	Satellitengestützte Bathymetrie zur Erstellung einer Tiefenkarte des Ismaninger Speichersees	München (TU)	2019	B
Bathmann, M.	Topographic Change Detection in the Wadden Sea Using Remote Sensing Data	Hamburg	2019	B
Chen, Y.	Mapping soil moisture for South Africa from Sentinel-2 data	München (TU)	2019	M
De Meester, J.	Simulation of representative nocturnal satellite imagery for urban areas with high spectral and high spatial resolution	Hannover	2019	M
Gstaiger, V.	3D Informationen aus Fernerkundungsdaten für den Bevölkerungsschutz - Nutzungsmöglichkeiten am Beispiel zweier Großveranstaltungen	Bonn	2019	M
Günzel, D.	FPGA-Prototyping eines SAR Bildprozessors zur Erkennung von Eisbergen	Bremen	2019	M
Jain, H.	Machine Learning Methods for Ozone Total Column Retrieval from Sentinel-5 Precursor Data: Application to Synthetic and Real Measurements	Berlin (TU)	2019	M
Joachim, L.	Wolkenerkennung in Satellitenaufnahmen des sichtbaren Spektralbereichs bei Nacht	Stuttgart	2019	M
Meraner, A.	Deep learning-based SAR-optical data fusion for cloud removal in Sentinel-2 imagery	München (TU)	2019	M
Madadikhaljan, M.	Single-Image Dehazing on Aerial Imagery Using Convolutional Neural Networks	Stuttgart	2019	M
Ohlhof, J.	Klassifikation von Gewässern in Sentinel-Satellitenbildern	München (TU)	2019	B
Sachße, L.	Prädiktion von Bildsequenzen aus Tiefendaten	München (TU)	2019	M
Schuegraf, P.	Automatic Building Footprint Extraction from Multi-Resolution Remote Sensing Images Using a Hybrid Fully Convolutional Neural Network	München (HS)	2019	B
Stelzig, F.	Softwareimplementierung für zwei Spektrometer auf einem UAV	München (HS)	2019	B
Themann, B.	Upscaling of Field Measurements for the Validation of the Sentinel-2 Level-2A Product	Berlin (Humboldt)	2019	M

Name	Subject	University	Year	M/D/B
Yu, W.	Deep learning-based SAR image segmentation into layover, shadow and others	München (TU)	2019	M
Bürgmann, T.	Matching of TerraSAR-X derived ground control points to optical image elements using deep learning	München (TU)	2018	M
Fuentes Reyes, M.	Image-to-image-translation to support the interpretation of SAR imagery	München (TU)	2018	M
Geißendörfer, O.	Evaluierung von Methoden zur monokularen Tiefenschätzung aus Bildern	München (TU)	2018	B
Han, S.	Building modeling and monitoring using social media images	München (TU)	2018	M
Knöttner, J.	Trennung von parkenden und am Verkehr teilnehmenden Fahrzeugen basierend auf einer automatischen Verkehrserfassung aus Luftbildern	Würzburg-Schweinfurt (HS)	2018	B
Kolsch, K.-H.	Google Earth Engine: Globale Analysen basierend auf Fernerkundungsdaten	München (TU)	2018	B
Kretz, M.	Design and construction of a light source setup for stray light measurements in array spectrometers	Karlsruhe (KIT)	2018	M
Li, Q.	Building Footprint Generation Using Deep Learning Methods	München (TU)	2018	M
Okuneva, E.	Global Non-urban Local Climate Zones Classification with Sentinel-2 Images	München (TU)	2018	M
Rußwurm, M.	Multi-temporal land cover classification with convolutional recurrent networks	München (TU)	2018	M
Sachße, L.	Depth-Guided Video Frame Prediction	München (TU)	2018	M
Sheu, C.-Y.	Automatic 3D lane marking reconstruction using multi-view aerial imagery	Stuttgart	2018	M
Villamil Fajardo, S.	Synthetic retrievals of cloud parameters from DSCOVREPIC measurements	München (TU)	2018	M
Wang, Y.	Unsupervised Domain Adaptation for Image Classification	München (TU)	2018	M
Wenzl, M.	Hyperspektrale Klassifizierung des Untergrunds im Flachwasser	München (TU)	2018	M

DHBW: Duale Hochschule Baden-Württemberg
 FH: Fachhochschule
 FU: Freie Universität
 HS: Hochschule
 KIT: Karlsruher Institut für Technologie
 LMU: Ludwig-Maximilians-Universität
 TU: Technical University

Scientific Exchange

Guest Scientists

Visiting scientists (≥ 4 weeks) hosted between 2018 and 2023 by IMF or TUM-LMF/SiPEO (until 2021).

Name	Period	Home Institution	Funding
Bamber, J. (@SiPEO)	Sep 2021 – Aug 2024	University Bristol, UK	BMBF
Bandopadhyay, S.	Feb – Apr 2020	Poznań University of Life Sciences, Poland	Poznań University of Life Sciences, Poland
Banerjee, B.	Jun 2019	IIT Bombay, India	Bavarian State Ministry for Science, Research & the Arts
Borges Oliveira, D. (@SiPEO)	Sep 2021 – Jul 2022	IBM, Brazil	BMBF
Dirscherl, M.	Feb – Jun 2018	University of Island	University of Island
Dong, Y.	Feb 2019 – Jul 2020		DAAD
Dvorakova, K.	Nov – Dez 2022	Kat. University Leuven, Belgium	Kat. University Leuven
Eppler, J.	Jun – Sep 2018	Simon Fraser University, Canada	Simon Fraser University
Fraser, C.	Sep – Oct 2019	University of Melbourne, Australia	DAAD
Guo, W.	Jul 2021 – Jun 2022	UiT The Arctic University of Norway	UiT The Arctic University of Norway
Heiselberg, P.	Aug – Dec 2022	DTU-Space, Denmark	DTU-Space, Denmark
Jung, P. (@SiPEO)	Jan – Aug 2021	TU Berlin	BMBF
Klemmer, K. (@SiPEO)	Nov 2020 – Apr 2021	University of Warwick, UK & New York University, USA	ERC Starting Grant
Kochupillai, M. (@SiPEO)	Jun 2020 – May 2024	TUM	BMBF
Li, H.	Jun 2021 – May 2022	Sichuan Surveying and Mapping Center	China Scholarship Council
Lind, L.	Nov. 2023 – Dez. 2023	University of Jyväskylä, Finland	Academy of Finland
Ma, L.	Mar 2019 – Feb 2021	Nanjing University, China	Alexander-von-Humboldt Foundation
Ma, X.	Feb 2020 – Feb 2021	Jiangsu Secona Normal University, China	China Scholarship Council
Mahmud, M.	Jul 2021 – Jun 2023	University of Calgary, Canada	NSERC Stipendium Canada
Murashkin, D.	Dec 2019 – Jun 2021	Universität Bremen	Universität Bremen

Name	Period	Home Institution	Funding
Niroumand Jadidi, M.	Mar – Aug 2022	Fondazione Bruno Kessler, Italy	DAAD
Owda, A.	Mar – Sep 2022	DTU-Space, Denmark	DTU-Space, Denmark
Padilla, E.	Okt. 2023 – Sep 2025	Cinvestav, Mexico	DAAD
Pang, L.	Oct 2018 – Aug 2019	Beijing University of Civil and Engineering Architecture, China	China Scholarship Council
Roscher, R. (@SiPEO)	May – Dec 2021	Uni Bonn	BMBF
Roth, P. (@SiPEO)	Feb 2021 – Jul 2022	TU Graz, Austria	BMBF
Saha, S.	Mar – Jun 2019		Fondazione Bruno Kessler
Sarris, A.	Jan – Mar 2018	Foundation for Research and Technology Hellas, Greece	DAAD
Semakova, E.	Okt – Nov 2020		DAAD
Shahzad, M. (@SiPEO)	May 2021 – Aug 2024	National University of Sciences and Technology (NUST), Islamabad, Pakistan	BMBF
Shan, J.	Jun – Aug 2023	Purdue University, USA	DAAD
Tampu, T.	Sep 2020 – Jul 2021	University of Tartu Ülikool, Estonia	University of Tartu Ülikool, Estonia
Tzu-Hsin, K.	Jun – Jul 2019	Aarhus University, Denmark	Novo Nordisk Foundation
Xiang, D. (@SiPEO)	Nov 2020 – Oct 2022	Chinese Academy of Sciences, China	Alexander-von-Humboldt-Foundation
Yao, J.	Sep 2019 – Sep 2020	Xi'an Jiaotong University, China	China Scholarship Council
Zhang, F.	Aug 2018 – Jul 2019	Nanjing University of Information Science & Technology, Nanjing, Jiangsu, China	Alexander-von-Humboldt Foundation
Zhang, R.	Sep 2020 – Sep 2021	Beihang University, China	China Scholarship Council

Professional Leaves

Periods of stay (≥ 4 weeks) at external institutions between 2018 and 2023 by IMF staff or TUM-LMF/SiPEO staff (*italic*, until 2021).

Staff Member	Institution	Period	Funding
Ait Ali Braham, N.	University of Grenoble, France	Aug – Oct 2023	DLR
Albrecht, C.	IBM TJ Watson Research Center, New York, USA	Jul + Nov 2021	DLR
Alonso-Gonzalez, K.	ESA, ESRIN	Nov 2021 – Oct 2022	DLR
Bittner, K.	Technische Universität Graz, Austria	Oct – Dec 2018	DAAD
Ge, N.	Institut d'Électronique et de Télécommunications de Rennes, France	Jan 2020	
Gomba, G.	Jet Propulsion Laboratory, Pasadena, USA	Oct 2018	DLR
Hong, D.	Grenoble Institute of Technology, France	Mar – Jun 2018	DLR
Hua, Y.	University of Wageningen, Netherlands	Nov – Dec 2019	DLR
<i>Hughes, L.</i>	University of Wageningen, Netherlands	Sep – Oct 2019	
<i>Kang, J.</i>	Technische Universität Graz, Austria	Aug – Sep 2018	TUM
<i>Koch, T.</i>	IPN - Computing Research Center, Mexico City, Mexico	Mar – Apr 2018	TUM
Lehner, S.	Simon Fraser University, Vancouver, Canada	Feb – Apr 2018	DLR
<i>Liebel, L.</i>	RIKEN Center for Advanced Intelligence Project, Tokyo, Japan	Mar – Apr 2020	DAAD
Liu, S.	Belgian Institute for Space Aeronomy, Brussels, Belgium	Mar 2018	DLR
Loyola, D.	NOAA Center for Satellite Applications and Research, USA	Jun – Jul 2019	NOAA
	NASA Goddard Space Flight Center, USA	Jun 2022 – May 2023	DLR
Meringer, M.	Tokyo Institute of Technology, Japan	Apr – May 2018 Apr – May 2019	TIT
Mou, L.	University of Cambridge, England	Apr – May 2019	TUM
<i>Qiu, C.</i>	University of Pavia, Italy	Oct – Dec 2019	TUM
Rother, T.	Macquarie University Sydney, Australia	Nov 2019 – Mar 2020	DLR
<i>Rußwurm, M.</i>	ESRIN PhiLab, Frascati, Italy	Jun 2018	TUM

Staff Member	Institution	Period	Funding
	University of Southern Brittany (Vannes Institute of Technology) / Institut de Recherche en Informatique et Systèmes Aléatoires, Vannes, France Université Rennes 2, France	Nov 2018 – Feb 2019	TUM
	Stanford University, California, USA	Mar – Apr 2020	DAAD
<i>Shi, Y.</i>	University of Cambridge, England	Apr – May 2019	TUM
Singha, S.	University of Tromsø, Norway	Apr – May 2018	DLR
Traganos, D.	University of Queensland, Brisbane, Australia	Apr – Jun 2018	DLR
Xia, Y.	ETH Zurich, Switzerland	Jun – Aug 2021	DLR
Xie, Y.	ETH Zürich, Switzerland	Oct – Dec 2020	DLR
	Chinese Academy of Surveying and Mapping, Beijing, China	Nov 2021 – Jan 2023	DLR
Zhang, G.	University of Antwerp, Belgium	Jul – Sep 2021	DLR

Conferences

Major conferences, colloquia and workshops (co-)organized by IMF and TUM-LMF/SiPEO between 2018 and 2023.

Date	Event	Location	Participants
7 Dec 2023	CUP4SOIL User Requirements Virtual Meeting	Online	145
2 Nov 2023	2nd DESIS User Workshop	Athens, GR	50
10 – 11 Oct 2023	1st EnMAP User Workshop	Online	> 200
3 – 6 Jul 2023	Summer School Copernicus for Cultural Heritage	Oberpfaffenhofen	35
4 Oct – 19 Dec 2021	ESA AI4FoodSecurity Challenge	online	> 100
Oct – Nov 2021	Artificial Intelligence for Earth Monitoring MOOC	online	> 100
28 Sep – 1 Oct 2021	1st DESIS User Workshop	online	235
Jun 2021	ESA AI4EO Enhanced Sentinel 2 Agriculture Challenge	online	> 100
Mar 2021	DynamicEarthNet Challenge	online	> 100
23 – 24 Oct 2019	Workshop „Praktische Nutzung der Binnengewässer-Fernerkundung“	Oberpfaffenhofen	45
24 – 26 Sep 2019	WHISPERS 2019 (General Chair)	Amsterdam, NL	400
23 – 26 Sep 2018	WHISPERS 2018 (General Chair)	Amsterdam, NL	400

Patents

Filed Patent Applications

Name	Patent	Patent No	Year	Countries
Albrecht, C. Sun, Y.	LiDAR basierte Detektion von Fahrbahnmarkierungen aus der Vogelperspektive	DE 10 2023 125379.4	2023	DE
Plattner, S. Gege, P. Schwarzmaier, T.	Wasserfahrzeug zur Validierung von multi- und hyperspektralen optischen Daten	DE 10 2022 125348.1	2022	DE
Runge, H. Klarner, R.	Vorrichtung und Verfahren zur Steuerung einer Verbrennungsantriebseinheit und einer oder mehreren damit verbundenen Komponenten zur Reinigung und/oder Behandlung von deren Abgasen	DE 10 2022 107808.6	2022	DE, PCT
Azimi, S.	Auflösungsverbesserung von Satelliten- und Luftbildern unter Verwendung von maschinellem Lernen	DE 10 2022 129471.4	2022	DE, PCT
Israel, M. Sorg, M. Dahms, T. Haschberger, P. Manß, C.	Verfahren zum Auffinden von Lebewesen aus der Luft	DE10 2021 131937.4	2021	DE
Wilbert, S. Wolfertstetter, F. Schmidt, K. Borg, E. Carballo, J.A.	Leuchtensystem sowie Strahlungssensor mit Leuchtensystem	DE10 2021 134127.2	2021	DE, EP
Wilbert, S. Wolfertstetter, F. Schmidt, K. Borg, E.	Verfahren zum Abschätzen eines Zustandes eines Direktstrahlungssensors	DE10 2021 134129.9	2021	DE, EP, PCT
Rosenbaum, D. Pypetz, M. Zumkeller, T.	Vorrichtung zur kontaktlosen Ermittlung zeitabhängiger Positionen eines mechanisch beweglichen Eingabelements	DE10 2019 101738.6	2019	DE
Pleskachevsky, A.	Verfahren zur Herleitung von Seestatusparametern	DE10 2018 123440.6	2018	DE, US

DE = Germany, AT = Austria, AU = Australia, BR = Brasilien, CA = Canada, CH = Switzerland, CN = China, ES = Spain, EP = European Patent Organization, FR = France, GB = United Kingdom, IT = Italy, NL = The Netherlands, RU = Russia, SE = Sweden, US = USA

Granted Patents

Name	Patent	Patent No.	Year	Countries
Runge, H. Krauß, T.	Verfahren und Vorrichtung zur Georeferenzierung von Bilddaten	DE10 2021 129278	2023	DE
Borg, E. Schmidt, K.	Verfahren und Anordnung zum Kalibrieren flugobjektmontierter Sensoren	DE10 2018 208738	2022	DE
Klarner, R. Runge, H.	Spurhalteassistenzsystem für ein Fahrzeug	DE 10 2015 111925	2021	DE
Klarner, R. Runge, H.	System and Method for automatically Controlling a Vehicle in a Road Network	EP 3602516	2021	US, CN, EP, DE, FR, GB
Israel, M. Schwarzmaier, T. Tank, V. Rupprecht, V. Nitsche, R. Fackelmeier, A.	Verfahren und Vorrichtung zur Suche und Erkennung von in landwirtschaftlichen Feldern und Wiesen versteckten Tieren	DE 10 2009 039601	2020	DE
Klarner, R. Runge, H.	Fahrerassistenzsystem	EP 341 1276	2020	EP, US, DE, FR, GB, NL, SE
Suchandt, S. Runge, H.	Schiffsdetektion in Interferometrie-Radardaten	EP 3019889	2020	EP, ES, FR, GB, IT
Borg, E. Schmidt, K. Schmidt, K. Renke, F. Spengler, D.	Verfahren zum Schätzen eines Zustandes eines Globalstrahlungssensors und Messstation mit Globalstrahlungssensor	DE10 2018 204146	2019	DE
Duque Biarge, S. Parizzi, A. De Zan, F.	Automatic three-dimensional geolocation of SAR targets and simultaneous estimation of tropospheric propagation delays using two long-aperture SAR images	EP 3156818	2019	FR, ES, IT
Israel, M.	Verfahren zum Auffinden von Lebewesen aus der Luft sowie Flugobjekt zum Auffinden von Lebewesen aus der Luft	DE 10 2012 221580	2019	DE, CH, AT
Runge, H. Klarner, R.	Positionsbestimmung eines Fahrzeugs auf oder über einer Planetenoberfläche	EP 3049825	2019	EP, US, FR, GB, IT
Runge, H. Krauß, T.	Verfahren und Vorrichtung zur Georeferenzierung von Luftbilddaten	DE 10 2016 123286	2019	DE, EP, AT, FR, ES
Klarner, R. Runge, H.	System zur Fahrerunterstützung	DE 10 2014 106890	2018	DE, EP, FR, GB, NL, SE

For country abbreviations see footnote to previous table of Filed Patent Applications

Awards

Awards 2018-2023 granted to IMF and TUM-LMF/SiPEO¹ staff (in *italic* typeface).

Year	Award	Laureates (only IMF, LMF/SiPEO ¹)	Subject
2023	PECFAR Fellowship Grant (Paired Early Career Fellowship in Applied Research)	Diaconu, C.	
2023	2 nd Place Deep Nutrient Deficiency Challenge (ICCV 2023)	Wang, Y.	
2022	TUM Emeritus of Excellence (TU München)	Bamler, R.	Excellent track records and the potential to continue to enrich university life
2022	Best Reviewer Award 2022 (XXIV ISPRS Congress)	Cerra, D. Müller, R.	
2022	IEEE GRSS David Landgrebe Award (IEEE/GRSS)	Datcu, M.	Outstanding contributions to Earth Observation analysis using innovative concepts for big data analysis, image mining, machine learning, smart sensors, and quantum resources
2022	Best Paper Award (International Conference on Pattern Recognition Applications and Methods)	Kuzu, R.S.	On the Statistical Independence of Parametric Representations in Biometric Cryptosystems: Evaluation and Improvement
2022	Winning Team: AI4EO Challenge HyperView – Seeing beyond the Visible (ESA, KP Labs, QZ Solutions)	Kuzu, R.S.	Estimating soil parameters from hyperspectral images (Team EagleEyes)
2022	Winning Team: International AI Archeology Challenge (Helmholtz Information & Data Science Academy)	Liu, C. Wang, Y.	Multiclass semantic segmentation of ancient agricultural terrace/wall in the Negev desert
2022	INNS Senior Member (International Neural Network Society)	Loyola, D.	Outstanding contribution to the theory and applications of neural networks
2022	Best Paper Award (IEEE Global Humanitarian Technology Conference)	Merkle, N. Azimi, S. Henry, C. Yuan, X.	User-driven flood response & monitoring information – Key findings of the Data4Human project

¹ until 2021

Year	Award	Laureates (only IMF, LMF/SiPEO')	Subject
2022	President's Honorary Citation (ISPRS)	Müller, R.	Outstanding efforts in leading WG I/1 "Multi- and Hyperspectral Sensing"
2022	Winning Team: Copernicus Masters 2022 (BMDV Digital Transport & Mobility Challenge)	Runge, H. Valks, P.	Proposal "DriveClean"
2022	Best Poster Award (Helmholtz AI Conference 2022)	Wang, Y. Hoffmann, E. Zhu, X.	So2Sat POP - A Curated Benchmark Data Set for Population Estimation from Space on a Continental Scale
2022	3 rd Prize Landslide4Sense Challenge (Institute of Advanced Research in Artificial Intelligence, IARAI)	Yao, W. Zhu, X.	
2022	U. V. Helava Award 2020-2021 (ISPRS)	Zhu, X.	Cloud removal in Sentinel-2 imagery using a deep residual neural network and SAR-optical data fusion
2021	DLR-Wissenschaftspreis 2021	Ansari, H. de Zan, F. Parizzi, A.	Study of Systematic Bias in Measuring Surface Deformation with SAR Interferometry
2021	Manfred-Fuchs-Innovationspreis 2021 (Freundesgesellschaft des DLR)	d'Angelo, P.	3D aus dem Weltall - Von Stereobildern bis zur Anwendung
2021	DLR Senior Scientist	Heiden, U.	
2021	Best Reviewer Award 2021 (IEEE Transactions on Geoscience and Remote Sensing)	Hong, D.	
2021	2021 Jose Bioucas Dias Best Paper Award, WHISPERS 2021 (virtual)	Hong, D.	Revisiting Graph Convolutional Networks with mini-Batch Sampling for Hyperspectral Image Classification
2021	3 rd Prize Open Data Impact Awards 2021	Körner, M., Schneider, M.	EuroCrops: A Pan-European Dataset for Time Series Crop Type Classification
2021	U. V. Helava Best Paper Award 2021 (ISPRS Journal of Photogrammetry and Remote Sensing)	Meraner, A. Ebel, P. Schmitt, M. Zhu, X.	Cloud removal in Sentinel-2 imagery using a deep residual neural network and SAR-optical data fusion
2021	IEEE Senior Member	Tian, J.	
2021	IEEE Fellow	Zhu, X.	Contributions to artificial intelligence and data science in Earth observation and global urban mapping
2020	DLR-Nachwuchsgruppenleitung	Bittner, K.	AI for 3D Building Modeling

Year	Award	Laureates (only IMF, LMF/SiPEO')	Subject
2020	2 nd Prize IEEE GRSS Data Fusion Contest 2020	Cerra, D. Merkle, N. Henry, C. Alonso, K. d'Angelo, P. Auer, S. Bahmanyar, R. Yuan, X. Bittner, K. Langheinrich, M. Zhang, G. Pato, M. Tian, J. Reinartz, P.	Land cover classification with low- and high-resolution labels
2020	3 rd Prize IEEE GRSS Data Fusion Contest 2020	Cerra, D. Merkle, N. Henry, C. Alonso, K. d'Angelo, P. Auer, S. Bahmanyar, R. Yuan, X. Bittner, K. Langheinrich, M. Zhang, G. Pato, M. Tian, J. Reinartz, P.	Land cover classification with low-resolution labels
2020	1 st Place Three Minute Thesis Competition, IGARSS 2020 (virtual)	<i>Gawlikowski, J.</i>	Robust Machine Learning Based Data Fusion Methods
2020	IEEE GRSS Highest Impact Paper Award 2020	Ghamisi, P.	Deep Feature Extraction and Classification of Hyperspectral Images Based on Convolutional Neural Networks (10/2016)
2020	Geodäsie-Preis (Gesellschaft für Geodäsie, Geoinformation und Landmanagement und Nico Rüpke-Stiftung)	<i>Li, Q.</i> <i>Auer, S.</i> <i>Schmitt, M.</i> <i>Shi, Y.</i> <i>Zhu, X.</i>	KI-basierte Detektion von Gebäuden mittels Deep Learning und amtlichen Geodaten zur Baufallerkundung
2020	Best Paper Award, EarthVision 2020 (virtual)	<i>Rußwurm, M.</i> <i>Körner, M.</i>	Meta-Learning for Few-Shot Land Cover Classification
2020	Lehrpreis 2020, Fachschaft Luftfahrt, Raumfahrt Geodäsie (TU München)	<i>Schmitt, M.</i>	Übung „Fernerkundung und Signalverarbeitung“

Year	Award	Laureates (only IMF, LMF/SiPEO')	Subject
2020	VDV-Landespreis Bayern 2020	Seifert, K.	Entwicklung von Methoden zur Erstellung hochpräzise georeferenzierter Karten aus Luftbildern für das autonome Fahren
2020	Best Paper Award 2020 (International Journal of Image and Data Fusion)	Tian, J.	Fusion of multispectral imagery and DSMs for building change detection using belief functions and reliabilities
2020	ERC Proof-of-Concept Grant	Zhu, X.	AI4SmartCities
2019	1 st Prize IEEE GRSS Data Fusion Contest 2019	d'Angelo, P. Cerra, D. Azimi, S. Merkle, N. Tian, J. Auer, S. Pato, M. de los Reyes, R. Zhuo, X. Bittner, K. Krauss, T. Reinartz, P.	Multi-view Semantic Stereo Challenge
2019	Best Poster Award 2019, MRSS/PIA 2019 (Munich)	<i>Aigner, S.</i> <i>Körner, M.</i>	FutureGAN: Anticipating the Future Frames of Video Sequences using Spatio-Temporal 3d Convolutions in Progressively Growing Autoencoder GANs
2019	Fall 2019 AVT Team Panel Excellence Award	Lindermeir, E.	Outstanding contributions to the NATO AVT (Applied Vehicle Technology) Program of Work
2019	Best Paper Award 2019 (SPIE Journal of Applied Remote Sensing)	Reinartz, P.	Deep learning decision fusion for the classification of urban remote sensing data
2019	GeodäTUM Award 2019	<i>Schmitt, M.</i>	Best geodesy-related lecture at TUM Department of Civil, Geo and Environmental Engineering
2019	Best Reviewer Award, MRSS/PIA 2019 (Munich)	<i>Schmitt, M.</i>	
2019	Best Student Paper Award, JURSE 2019 (Vannes/F)	<i>Stark, T.</i> Zhu, X.	Slum Mapping in Imbalanced Remote Sensing Datasets Using Transfer Learned Deep Features

Year	Award	Laureates (only IMF, LMF/SiPEO ¹)	Subject
2019	Remote Sensing 10 th Anniversary Best Paper Award 2019	Storch, T. Müller, R.	The EnMAP Spaceborne Imaging Spectroscopy Mission for Earth Observation
2019	Outstanding Paper Award, WHISPERS 2019 (Amsterdam/NL)	Zhang, G. Cerra, D. Müller, R.	Towards the Spectral Restoration of Shadowed Areas in Hyperspectral Images based on Nonlinear Unmixing
2018	2 nd Prize IEEE GRSS Data Fusion Contest 2018	Cerra, D. Pato, M. Carmona, E. Tian J. Azimi, S. Müller, R. Bittner, K. Henry, C. Vig, E. Kurz, F. Bahmanyar, R. d'Angelo, P. Alonso, K. Fischer, P. Reinartz, P.	Multimodal Land Use Classification
2018	Distinguished Lecturer for the IEEE Geoscience and Remote Sensing Society	Datcu, M.	
2018	Ad Astra Award for Excellence in Science (Romanian Researchers' Association)	Datcu, M.	
2018	Best Paper Award, ALLDATA 2018 (Athens/Greece)	Dumitru, C. Schwarz, G. Datcu, M.	Monitoring of Coastal Environments Using Data Mining
2018	2018 Richard M. Goody Award	Efremenko, D.	Atmospheric Radiation and Remote Sensing
2018	DLR-Wissenschaftspreis 2018	Fritz, T. (co-author)	Generation and performance assessment of the global TanDEM-X digital elevation model
2018	Best Reviewer Award 2017 (IEEE Geoscience and Remote Sensing Letters)	Ghamisi, P.	
2018	1 st Place Student Paper Award, EUSAR 2018 (Aachen)	Kang, J. Wang, Y. Zhu, X.	Low Rank Modeling based Multipass InSAR technique

Year	Award	Laureates (only IMF, LMF/SiPEO')	Subject
2018	Länderpreis 2018 (Verband deutscher Vermessungsingenieure)	Knöttner, J.	Trennung von parkenden und am Verkehr teilnehmenden Fahrzeugen basierend auf einer automatischen Verkehrserfassung aus Luftbildern
2018	Outstanding Contribution to Reviewing (ISPRS TC I Midterm Symposium, Karlsruhe)	<i>Schmitt, M.</i>	
2018	Best Paper Honourable Mention (ISPRS TC I Midterm Symposium, Karlsruhe)	<i>Schmitt, M.</i> <i>Hughes, L.</i> Zhu, X.	The SEN1-2 Dataset for Deep Learning in SAR-Optical Data Fusion
2018	Junior Fellow (TU München)	Vig, E.	
2018	PRACE Ada Lovelace Award for HPC 2018 (Partnership for Advanced Computing in Europe)	Zhu, X.	Global Urban Modeling
2018	Leopoldina Early Career Award 2018	Zhu, X.	
2018	Heinz Maier-Leibnitz-Medaille (TU München)	Zhu, X.	

Memberships

Memberships in Remote Sensing related Boards

Memberships without consideration of meeting organizations.

Member	Agency/ Institution	Board	2018	2019	2020	2021	2022	2023
Auer, S.	IEEE/GRSS	Image Analysis and Data Fusion Technical Committee, Co-Lead of working group Signal Processing and Image Analysis						■
Bamler, R.	DLR Agency	Program Board Earth Observation	■	■	■	■	■	
	HGF	Helmholtz Incubator Information and Data Science	■	■	■	■	■	
	HGF	Spokesman: Helmholtz Program Topic Earth Observation	■	■	■	■	■	
	HGF	Steering Board HIP			■	■	■	
Baumgartner, A.	IEEE	Chair: Hyperspectral Test and Calibration (P4001)	■	■	■			
Birk, M.	ESA	HITRAN Advisory Committee	■	■	■	■	■	■
	ESA	MIPAS Quality Working Group	■					
	ESA	Sentinel 5 Precursor Quality Working Group		■	■	■	■	■
	NASA	OCO-2/3 Science Team				■	■	■
Bittner, K.	ISPRS	Chair: 3D scene reconstruction for modeling and mapping (WG II/3)					■	■
Breit, H.	ESA	Sentinel-1 Mission Performance Cluster					■	■
Cerra, D.	ISPRS	Chair: Multispectral, Hyperspectral and Thermal Sensors					■	■
d'Angelo, P.	ISPRS	Co-Chair: Satellite Missions and Constellations for Remote Sensing (WG I/1)					■	■
	ISPRS	Co-Chair: Point Cloud Generation (WG II/2)	■	■	■	■		
Datcu, M.	ESA	Programme Board for Earth Observation			■	■		
De Zan, F.	ESA	ROSE-L Mission Advisory Group			■			
Eineder, M.	ESA	EGMS Technical Steering Committee			■	■	■	■

Member	Agency/ Institution	Board	2018	2019	2020	2021	2022	2023
Fraundorfer, F.	ISPRS	Co-Chair: 3D scene reconstruction for modeling and mapping (WG II/3)					■	■
Gege, P.	CSIRO	AquaWatch Australia Science Team			■	■		
	CSIRO	AquaWatch Australia International Science Advisory Group					■	■
	CSIRO	Aquawatch Nomenclature Focus Team					■	■
Gisinger C.	IOCCG	Benthic Reflectance Working Group				■	■	■
	ESA	Sentinel-1 Mission Performance Cluster					■	■
Gottwald, M.	DLR	SCIAMACHY Science Advisory Group	■					
	WMO	Polar Space Task Group	■					
Heiden, U.	GEO	Land Degradation Neutrality Initiative			■	■	■	■
	CEOS	Ad Hoc Team on Sustainable Development Goals			■	■	■	■
	DLR	EnMAP Science Advisory Group			■	■	■	■
	IEEE/GRSS	Chair: Technical Committee Geoscience Spaceborne Imaging Spectroscopy			■	■		
Lichtenberg, G.	IEEE	P4005 Working Group					■	■
	DLR	SCIAMACHY Science Advisory Group	■					
Lindermeir, E.	NATO	National PoC: Cross Domain Platform EO Signature Prediction (AVT-281)	■	■	■			
	NATO	National PoC: Next generation EO vehicle signature prediction algorithms (AVT-ET-205)				■		
	NATO	National PoC: Methodology for Tactical Missile IR Signature Predictions (AVT-376)					■	■
Loyola, D.	CEOS	Topic Lead: Atmospheric Composition Virtual Constellation	■	■	■	■	■	■
	ESA	Sentinel 4 Mission Advisory Group	■	■	■	■	■	■
	ESA	Sentinel 5 Mission Advisory Group	■	■	■	■	■	■
	ESA	Sentinel 5 Precursor Quality Working Group	■	■	■	■	■	■
	ISPRS	Co-Chair: Remote Sensing of Atmospheric Environment (WG III/8)	■	■	■	■	■	

Member	Agency/ Institution	Board	2018	2019	2020	2021	2022	2023
	AERSS	Deputy President					■	■
Main-Knorn, M.	ESA	Sentinel 2 Mission Performance Cluster	■	■				
Merkle, N.	ISPRS	Supporter: Disaster Management (ICWG III/IVa)					■	■
Pflug, B.	ESA	Sentinel 2 Mission Performance Cluster	■	■	■	■		
	ESA	Sentinel 2 Quality Working Group	■	■	■	■	■	■
	ESA	Head of working group: Copernicus Sentinel OPT-MPC, "Atmospheric Correction"					■	■
Slijkhuis, S.	ESA/ EUMETSAT	GOME/GOME-2 Science Advisory Group	■	■				
Storch, T.	ESA	CHIME Mission Advisory Group			■	■	■	■
Tian, J.	ISPRS	Co-Chair: Multi-sensor Modelling and Cross-modality Fusion (WG I/8)					■	■
Trautmann, T.	ESA	Sentinel 5 Precursor Mission Advisory Group	■					
	DLR	METImage Science Advisory Group	■	■	■	■	■	■
Wagner, G.	ESA	MIPAS Quality Working Group	■					
Zhu, X.	TUM	Scientific Advisory Board Georg Nemetschek Institute				■	■	
	PIK	Scientific Advisory Board				■	■	
	MIAI	International Scientific Committee			■	■	■	
	Alexander-von-Humboldt Foundation	Vice-Chair, Member: Selection Committee	■	■	■			
	PRACE	Scientific Steering Committee			■	■	■	
	GFZ	Scientific Advisory Board			■	■	■	
	GDS	Scientific Advisory Board		■	■	■	■	
	HGF	Steering Committee MUDS		■	■	■	■	
	HGF	Steering Board HAICU		■	■	■	■	
	HGF	Steering Board HIDA			■	■	■	

Member	Agency/ Institution	Board	2018	2019	2020	2021	2022	2023
	Copernicus	Copernicus Masters University Challenge, Expert panel			■			
	IEEE/GRSS	Special Awards Committee	■	■	■	■	■	
	IEEE/GRSS	Publication Awards Committee		■	■			
	IEEE	IEEE Medal for Environmental and Safety Technologies Committee		■	■	■		

AERSS: Atmospheric Environmental Remote Sensing Society
 CEOS: Committee on Earth Observation Satellites
 CSIRO: Commonwealth Scientific and Industrial Research Organisation
 ESA: European Space Agency
 EUMETSAT: European Organisation for the Exploitation of Meteorological Satellites
 HGF: Helmholtz-Gemeinschaft Deutscher Forschungszentren
 IEEE: Institute of Electrical and Electronics Engineers
 IEEE/GRSS: IEEE Geoscience and Remote Sensing Society
 ISPRS: International Society for Photogrammetry and Remote Sensing
 JAXA: Japan Aerospace Exploration Agency
 MIAI: Multidisciplinary Institute in Artificial intelligence, Grenoble/FR
 NASA: National Aeronautics and Space Administration
 WMO: World Meteorological Organization

Editorial Memberships

Member	Journal / Book / Series	Publisher	2018	2019	2020	2021	2022	2023
Auer, S.	Remote Sensing Special Issue, Guest Editor	MDPI		■	■	■	■	
Bamler, R.	Remote Sensing Special Issue, Guest Editor	MDPI	■					
Cerra, D.	Transactions on Geoscience and Remote Sensing, Associated Editor	IEEE						■
d'Angelo, P.	ISPRS Journal of Photogrammetry and Remote Sensing, Guest Editor	Elsevier		■	■	■		
Datcu, M.	SAR in Big Data Era, Guest Editor	MDPI	■					
	Information processing for unmanned aerial vehicles (UAVs) in surveying, mapping, and navigation, Guest Editor	Taylor & Francis	■					
	Geo-spatial Information Science, Guest Editor	Taylor & Francis	■					
	Transactions on Big Data	IEEE	■	■	■			
	Remote Sensing Special Issue, Guest Editor	MDPI	■	■	■	■		
	International Journal of Image and Data Fusion, Editor	Taylor & Francis	■	■	■	■		
	Frontiers in Remote Sensing, Guest Editor	Frontiers			■			
	Explainable AI4EO Training and Benchmarks: Data Sets Methodologies and Tools, Guest Editor	IEEE			■	■		
	Quantum Resources for Earth Observation, Guest Editor	IEEE				■		
de los Reyes, R.	Remote Sensing, Academic Editor	MDPI			■	■	■	■
Doicu, A.	Journal of Quantitative Spectroscopy and Radiative Transfer, Editor	Elsevier			■			
Efremenko, D.	Atmospheric Measurement Techniques, Associate Editor	EGU				■	■	■
	Frontiers in Environmental Science, Associate Editor	Frontiers				■	■	■
	Light and Engineering, Editor	Znack Publishing						■
Eineder, M.	Remote Sensing Special Issue, Guest Editor	MDPI	■					

Member	Journal / Book / Series	Publisher	2018	2019	2020	2021	2022	2023
	Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Guest Editor	IEEE			■	■		
Fritz, T.	Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Guest Editor	IEEE			■	■		
Gege, P.	Frontiers in Remote Sensing, Review Editor	Frontiers			■	■	■	
	Remote Sensing Special Issue, Guest Editor	MDPI			■	■	■	
Heiden, U.	Remote Sensing Special Issue, Guest Editor	MDPI			■	■	■	■
	Transactions on Geoscience and Remote Sensing, Associated Editor	IEEE				■	■	■
	Remote Sensing of Environment Special Issue, Guest Editor	Elsevier						■
Hong, D.	International Journal of Applied Earth Observation and Geoinformation, Guest Editor					■		
	Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Guest Editor	IEEE				■		
	Remote Sensing	MDPI				■		
	Transactions on Geoscience and Remote Sensing	IEEE				■		
	Wireless Communications and Mobile Computing					■		
Lehner, S.	Remote Sensing Special Issue, Guest Editor	MDPI	■					
Loyola, D.	Atmospheric Measurement Techniques, Editor	EGU	■	■	■	■	■	■
	Computational Intelligence in Robotics, Review Editor	Frontiers	■	■	■	■		
	Atmospheric Chemistry and Physics; Guest Editor	EGU		■	■	■	■	■
	Machine Learning and Artificial Intelligence, Associate Editor	Frontiers					■	■
	Satellite Missions specialty section in Remote Sensing, Associate Editor	Frontiers						■
Meringer, M.	Symmetry, Senior Associate Editor	MDPI			■	■	■	■

Member	Journal / Book / Series	Publisher	2018	2019	2020	2021	2022	2023
Mou, L.	Natural Resource Modeling, Associate Editor	Wiley				■		
Reinartz, P.	International Journal of Image and Data Fusion	Taylor & Francis	■	■	■	■	■	■
	Remote Sensing	MDPI	■	■	■	■	■	■
<i>Schmitt, M.</i>	Geoscience and Remote Sensing Letters	IEEE	■	■	■			
	Journal of Photogrammetry, Remote Sensing and Geoinformation Science	DGPF	■	■	■			
	Remote Sensing Special Issue, Guest Editor	MDPI		■	■			
Singha, S.	Remote Sensing Special Issue, Guest Editor	MDPI		■	■			
Slijkhuis, S.	Atmospheric Measurement Techniques	EGU	■					
Tian, J.	Remote Sensing Special Issue, Guest Editor	MDPI	■	■		■		■
Velotto, D.	Remote Sensing Special Issue, Guest Editor	MDPI		■				
Wang, Y.	Geoscience Data Journal	Wiley				■		
Zhu, X.	Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Guest Editor	IEEE	■					
	Journal of Applied Remote Sensing	SPIE	■					
	International Journal of Geoinformatics, Guest Editor	AgIT	■					
	Computer Vision and Image Understanding, Guest Editor	Elsevier	■					
	Remote Sensing Special Issue, Guest Editor	MDPI		■				
	Transactions on Geoscience and Remote Sensing	IEEE	■	■	■	■	■	
	Transactions on Computational Imaging, Associate Editor	IEEE		■	■			
	Geoscience and Remote Sensing Letters, Guest Editor	IEEE			■			
	Signal Processing Magazine, Area Editor	IEEE				■	■	
	Pattern Recognition, Associate Editor	IEEE				■	■	

AgIT: Association for Geoinformation Technology
 DGPF: Deutsche Gesellschaft für Photogrammetrie, Fernerkundung und Geoinformation

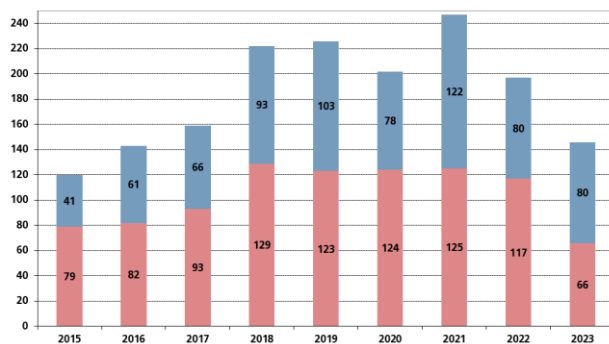
Publications

This chapter lists in reverse chronological order for the time period between January 2018 and 2023

- publications in ISI and SCOPUS journals
- other publications with full paper review
- books and book contributions
- other publications.

Internal reports as well as doctoral, diploma, Master and Bachelor theses are not listed.

IMF authors appear in **bold** typeface, employees of the TUM-LMF/SiPEO are ***in bold and italic*** typeface (until 2021).



IMF's and (until 2021) LMF/SiPEO's publication activities;
 red: publications in ISI and SCOPUS journals;
 blue: other publications with full paper review (status 01.03.2024).

Publications in ISI or Scopus Journals

2023

- [1] **Adam, N. A.**: *Interferometric SAR Coherence Magnitude Estimation by Machine Learning*, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 16, pp. 3034-3044, 2023.€194396€
- [2] Bachmann, M., **Storch, T.**: *First Nighttime Light Spectra by Satellite - By EnMAP*, Remote Sensing, 15 (4025), pp. 1-25, 2023.€196731€
- [3] **Bärlicheg, A., Hochstaffl, P., Schreier, F.**: *A Generalized Variable Projection Algorithm for Least Squares Problems in Atmospheric Remote Sensing*, Mathematics, 11 (13), pp. 2839, 2023.€195878€
- [4] **Beker, T., Ansari, H., Montazeri, S., Song, Q.,** Zhu, X. X.: *Deep Learning for Subtle Volcanic Deformation Detection With InSAR Data in Central Volcanic Zone*, IEEE Transactions on Geoscience and Remote Sensing, 61, pp. 1-20, 2023.€198763€
- [5] Berthier, E., **Floricioiu, D.**, Gardner, A., Gourmelen, N., Jakob, L., Paul, F., Treichler, D., Wouters, B., Belart, J. M., Dehecq, A., Dussailant, I., Hugonnet, R., Kääh, A., **Krieger, L.**, Pálsson, F., Zemp, M.: *Measuring glacier mass changes from space—a review*, Reports on Progress in Physics, 86 (3), pp. 1-32, 2023.€194299€
- [6] **Blume, A., Pertiwi, A. P., Lee, C. B., Traganos, D.**: *Bahamian seagrass extent and blue carbon accounting using Earth observation*, Frontiers in Marine Science, 10, pp. 1-10, 2023.€193805€
- [7] Brembach, K., **Pleskachevsky, A.**, Lantuit, H.: *Investigating High-Resolution Spatial Wave Patterns on the Canadian Beaufort Shelf Using Synthetic Aperture Radar Imagery at Herschel Island, Qikiqtaruk, Yukon, Canada*, Remote Sensing, 15 (19), pp. 4753_1-4753_28, 2023.€198201€
- [8] **Chan, K. L., Valks, P., Heue, K.-P., Lutz, R., Hedelt, P., Loyola, D.,** Pinardi, G., Roozendaal, M. V., Hendrick, F., Wagner, T., Kumar, V., Bais, A., Pifers, A., Irie, H., Takashima, H., Kanaya, Y., Choi, Y., Park, K., Chong, J., Cede, A., Friess, U., Richter, A., Ma, J., Benavent, N., Holla, R., Postlyakov, O., Cárdenas, C., Wenig, M.: *Global Ozone Monitoring Experiment-2 (GOME-2) daily and monthly level-3 products of atmospheric trace gas columns*, Earth System Science Data, 15 (4), pp. 1831-1870, 2023.€194904€
- [9] **Chen, S.**, Shi, Y., Xiong, Z., Zhu, X. X.: *HTC-DC Net: Monocular Height Estimation From Single Remote Sensing Images*, IEEE Transactions on Geoscience and Remote Sensing, 61, pp. 1-18, 2023.€201223€
- [10] Chen, Y., **Liu, S.**, Zhu, L., **Seo, S.**, Richter, A., Li, X., Ding, A., Sun, W., Shu, L., **Wang, X., Valks, P.**, Hendrick, F., Koenig, T. K., Volkamer, R., Bai, B., Wang, D., Pu, D., Sun, S., Li, J., Zuo, X., Fu, W., Li, Y., Zhang, P., Yang, X., Fu, T.-M.: *Global Observations of Tropospheric Bromine Monoxide (BrO) Columns From TROPOMI*, Journal of Geophysical Research: Atmospheres, 128 (24), pp. 1-22, 2023.€201654€
- [11] Coca, M., **Datcu, M.**: *FPGA Accelerator for Meta-Recognition Anomaly Detection: Case of Burned Area Detection*, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 16, pp. 5247-5259, 2023.€201626€
- [12] **Datcu, M.**, Huang, Z., Anghel, A., **Zhao, J.**, Cacoveanu, R.: *Explainable, Physics-Aware, Trustworthy Artificial Intelligence: A paradigm shift for synthetic aperture radar*, IEEE Geoscience and Remote Sensing Magazine (GRSM), 11 (1), pp. 8-25, 2023.€201622€
- [13] Devata, S., Cleaves, H. J., Dimandja, J., Heist, C. A., **Meringer, M.**: *Comparative Evaluation of Electron Ionization Mass Spectral Prediction Methods*, Journal of the American Society for Mass Spectrometry, 34 (8), pp. 1584-1592, 2023.€196562€

- [14] Doxani, G., Vermote, E., Roger, J.-C., Skakun, S., Gascon, F., Collison, A., De Keukelaere, L., Desjardins, C., Frantz, D., Hagolle, O., Kim, M., Louis, J., Pacifici, F., **Pflug, B.**, Poilvé, H., Ramon, D., **Richter, R.**, Yin, F.: *Atmospheric Correction Inter-comparison eXercise, ACIX-II Land: An assessment of atmospheric correction processors for Landsat 8 and Sentinel-2 over land*, Remote Sensing of Environment (285), pp. 113412, 2023.€196023€
- [15] Dvorakova, K., **Heiden, U.**, Pepers, K., Staats, G., van Os, G., van Wesemael, B.: *Improving soil organic carbon predictions from a Sentinel-2 soil composite by assessing surface conditions and uncertainties*, Geoderma, 429 (116128), pp. 1161281, 2023.€190696€
- [16] **Fuentes Reyes, M.**, **Xie, Y.**, **Yuan, X.**, **d'Angelo, P.**, **Kurz, F.**, **Cerra, D.**, **Tian, J.**: *A 2D/3D multimodal data simulation approach with applications on urban semantic segmentation, building extraction and change detection*, ISPRS Journal of Photogrammetry and Remote Sensing, 205, pp. 74-97, 2023.€198879€
- [17] Garane, K., **Chan, K. L.**, Koukoulis, M.-E., **Loyola, D.**, Balis, D.: *TROPOMI/ISSP Total Column Water Vapor validation against AERONET ground-based measurements*, Atmospheric Measurement Techniques (AMT), 16, pp. 57-74, 2023.€193030€
- [18] Gawlikowski, J., Tassi, C. R., **Ali, M.**, Lee, J., Humt, M., Feng, J., Kruspe, A., Triebel, R., Jung, P., Roscher, R., Shahzad, M., **Yang, W.**, Bamler, R., Zhu, X. X.: *A survey of uncertainty in deep neural networks*, Artificial Intelligence Review, 56, pp. 1513-1589, 2023.€197298€
- [19] Gomroki, M., Hasanlou, M., **Reinartz, P.**: *STCD-EffV2T Unet: Semi Transfer Learning EfficientNetV2 T-Unet Network for Urban/Land Cover Change Detection Using Sentinel-2 Satellite Images*, Remote Sensing, 15 (5), pp. 1-23, 2023.€201733€
- [20] Guo, W., Itkin, P., **Singha, S.**, Douglis, A. P., Johannsson, M., Spreen, G.: *Sea ice classification of TerraSAR-X ScanSAR images for the MOSAIC expedition incorporating per-class incidence angle dependency of image texture*, The Cryosphere, 17 (3), pp. 1279-1297, 2023.€194203€
- [21] **Heidler, K.**, **Mou, L.**, Hu, D., **Jin, P.**, Li, G., Gan, C., Wen, J.-R., Zhu, X. X.: *Self-supervised Audiovisual Representation Learning for Remote Sensing Data*, International Journal of Applied Earth Observation and Geoinformation, 116, pp. 103130, 2023.€191012€
- [22] Hine, G. E., **Kuzu, R. S.**, Maiorana, E., Campisi, P.: *Unlinkable Zero-Leakage Biometric Cryptosystem: Theoretical Evaluation and Experimental Validation*, IEEE Transactions on Information Forensics and Security, 18, pp. 3492-3505, 2023.€198748€
- [23] **Hochstaffl, P.**, **Schreier, F.**, **Köhler, C. H.**, **Baumgartner, A.**, **Cerra, D.**: *Methane retrievals from airborne HySpex observations in the shortwave infrared*, Atmospheric Measurement Techniques (AMT), 16 (18), pp. 4195-4214, 2023.€197418€
- [24] **Hoffmann, E. J.**, **Abdullahad, K.**, Zhu, X. X.: *Using social media images for building function classification*, Cities, 133, pp. 104107, 2023.€194799€
- [25] Hu, J., **Liu, R.**, **Hong, D.**, **Camero Unzueta, A.**, Yao, J., **Schneider, M.**, **Kurz, F.**, Segl, K., Zhu, X. X.: *MDAS: a new multimodal benchmark dataset for remote sensing*, Earth System Science Data, 15 (1), pp. 113-131, 2023.€193145€
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