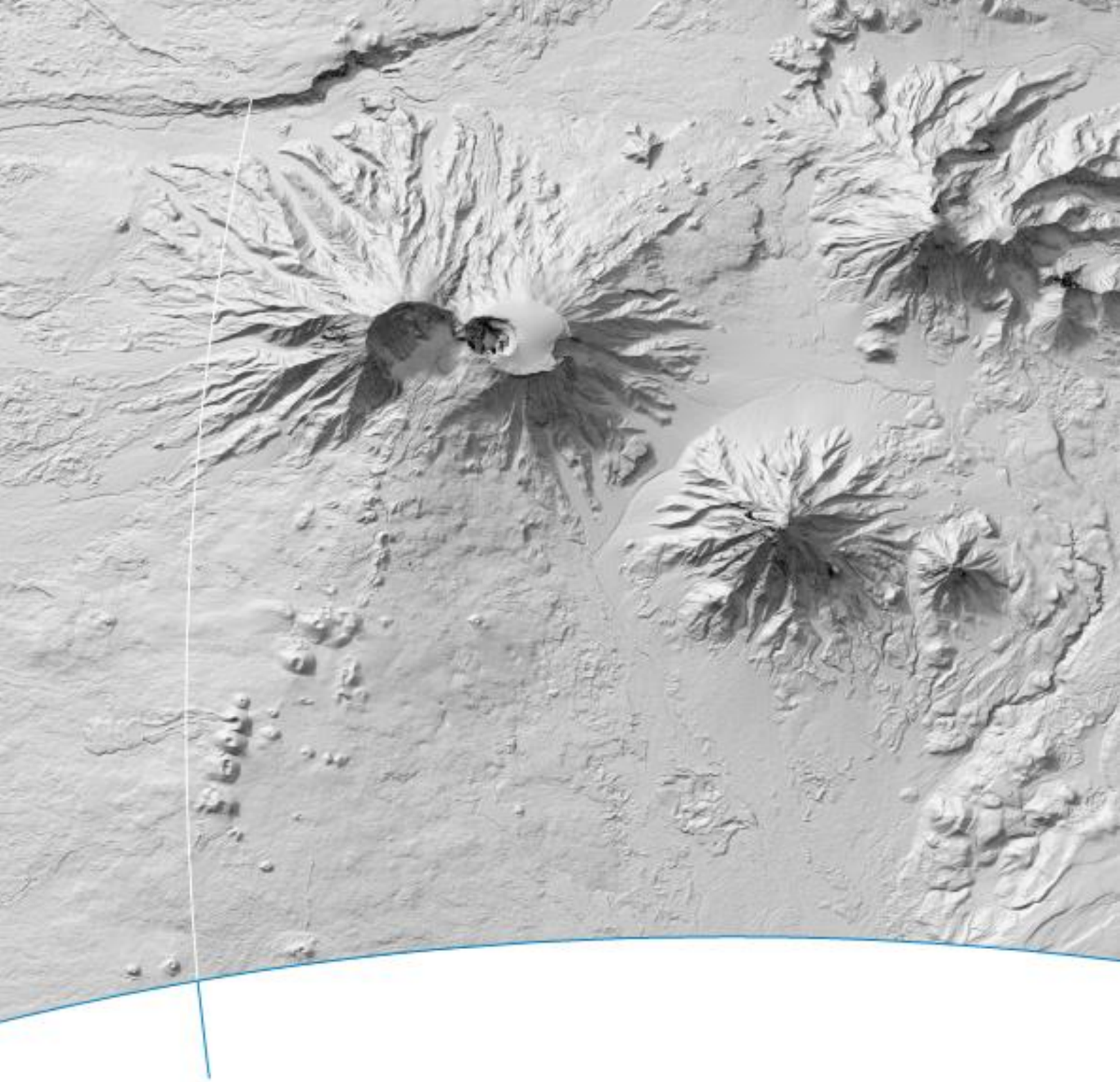


# Remote Sensing Technology Institute

## Institut für Methodik der Fernerkundung

## Scientific Record 2018 – 2024

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 – 2024 (26.02.2025)

**This Documentation chapter covers scientific activities of IMF and TUM-LMF/-SiPEO staff in the time period between January 2018 and December 2024.**

## Scientific Record 2018 – 2024 (26.02.2025) 2

# Teaching and Education

**Lectures at Technical University of Munich (TUM)**

University courses conducted by IMF/LMF/SiPEO staff from 2018 until 2024 (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.<br>Gomba, G. | | | | | | ■ | ■ |
| TUM | Photogrammetrie und Fernerkundung IV (Vorlesung + Übung) | *Körner, M.*<br>Auer, S.<br>*Schmitt, M.*<br>Eineder, M. | ■ | ■ | ■ | ■ | | | |
| TUM | Satellitenfernerkundung (Vorlesung + Übung) | *Körner, M.*<br>Auer, S.<br>*Schmitt, M.*<br>Eineder, M. | ■ | ■ | ■ | ■ | | | |
| TUM | Systems Theory and Signal Processing (Lecture + Tutorial) | Bamler, R.<br>Zhu, X. | ■ | ■ | ■ | ■ | ■ | | |
| TUM | Systemtheorie u. Signalverarbeitung (Vorlesung + Übung) | Bamler, R.<br>Zhu, X. | ■ | ■ | ■ | ■ | ■ | | |
| TUM | Introduction into Microwave and SAR Remote Sensing | Eineder, M. | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| TUM | Estimation Theory and Machine Learning (Lecture + Tutorial) | Bamler, R.<br>Kurz, F.<br>Zhu, X.<br>*Körner, M.* | | | ■ | ■ | ■ | | |
| TUM | Schätztheorie (Vorlesung + Übung) | Bamler, R.<br>Kurz, F.<br>Zhu, X. | ■ | ■ | ■ | ■ | ■ | | |
| TUM | Remote Sensing – Advanced Methods | Camero, A.,<br>Eineder, M.<br>Trautmann, T.<br>Wang; Y.,<br>Zhu, X.<br>*Schmitt, M.* | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 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.*<br>*Zhu, X.*<br>*et al.* | | | | | ■ | | |
| TUM | Data Science in Earth Observation | *Zhu, X.*<br>Camero, A.<br>*Mou, L.*<br>*Wang, Y.* | | | | | ■ | ■ | ■ |
| TUM | Bildverstehen Grundlagen – Übung | *Körner, M.*<br>*Koch, T.* | ■ | | | | | | |
| TUM | Bildverstehen – Vertiefte Methoden | *Körner, M.*<br>*Liebel, L.*<br>*Schneider, M.* | ■ | ■ | ■ | ■ | ■ | | |
| TUM | Bildverstehen – Aktuelle Ansätze des Maschinellen Lernens | *Körner, M.*<br>*Liebel, L.*<br>*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. | | | | | | ■ | |
| TUM | Seminar Geospatial Data Science | Werner, M.<br>Albrecht, C. | | | | | | | ■ |

**Lectures at other Universities**

University courses conducted by IMF staff from 2018 until 2024.
Winter semester courses are listed in the year of beginning.

| University | Title | Lecturers | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| Jena | SAR-Signalverarbeitung (SAR-EDU) | Auer, S.<br>Eineder, M.<br>Lehner, S.<br>Pleskachevsky, A. | ■ | ■ | ■ | ■ | ■ | ■ | |
| Alcala, SP | Hyperspectral Remote Sensing | Cerra, D. | ■ | ■ | | ■ | | | |
| Osnabrück | Methoden digitaler Bildverarbeitung | Cerra, D. | ■ | | | | | | |
| Osnabrück | Praxis Methoden digitaler Bildverarbeitung | Cerra, D. | ■ | | | | | | |
| Mannheim (DHBW) | Digitale 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 Proceses 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.<br>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.<br>Tings, B. | | | | | | ■ | |
| Thessaloniki, GR | Satellite Remote Sensing | Loyola, D. | ■ | ■ | ■ | ■ | ■ | ■ | ■ |

| University | Title | Lecturers | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| Osnabrück | Fernerkundliche Umweltanalyse | Reinartz, P.<br>Cerra, D.<br>Heiden, U.<br>Auer, S. | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Hannover | Operationelle Fernerkundung | Storch, T. | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Hannover | Big Geospatial Data | Werner, M. | ■ | | | | | | |
| Columbia University, NY, USA | Machine Learning for Environmental Sciences | Albrecht, C. | | | | | | | ■ |
| Wien, AU | Modern (Quantum) Cryptography | Guggemos, T. | | | | | | | ■ |

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

**Non University Courses and Tutorials**

Non university courses and tutorials conducted by IMF staff between 2018 and 2024 (Courses of the LMF/SiPEO until 2021 in *italic* typeface).

| Lecturer | Location | Subject | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| 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 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| 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. | CCG | SAR Principles and Applications - InSAR | | | | | | | ■ |
| 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 | ■ | ■ | ■ | | | | |
| Hochstaffl, P. | CCG | Atmosphärische Fernerkundung – Strahlungstransportmodelle und Inversionsverfahren | | | | | | | ■ |

| Lecturer | Location | Subject | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| Imber, J.<br>Singha, S. | FutureLearn | Using ML with SAR to monitor changing polar region and oil spills | | | | ■ | | | |
| Jacobsen, S. | TUM Int. | SAR Oceanography | | ■ | | ■ | ■ | ■ | |
| Jacobsen, S. | CCG | SAR Principles and Applications - Oceanography | | | | | | | ■ |
| *Körner, M.* | KIT | Deep Learning with Feed-Forward & Recurrent Models | | ■ | | | | | |
| Kortum, K.<br>Imber, J.<br>Tings, B.<br>Murashkin, D. | University Bremen Research Alliance | Data Preparation | | | | ■ | ■ | | ■ |
| 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.<br>Gege, P.<br>Plattner, S. | ANA/Peru | Inland Water Remote Sensing | | | | | ■ | ■ | |
| Tings, B.<br>Imber, J.<br>Kortum, K.<br>Murashkin, D. | University Bremen Research Alliance | Data science & big data | | | | ■ | ■ | ■ | |
| Tings, B. | University Bremen Research Alliance | Starter Track Module: Data science & big data | | | | | | | ■ |
| Trautmann, T. | CCG/ESA | Space-Borne Remote Sensing – Atmosphere | | ■ | | ■ | | | |
| Zhu, X. | EUSAR | Deep Learning in Remote Sensing | ■ | | | | | | |

| Lecturer | Location | Subject | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| 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 | | | ■ | | | | |
| 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 | | | ■ | | | | |

# Academic Degrees

**Professorship Appointments**

Professorship appointments of IMF or TUM-LMF/SiPEO (in *italic* typeface) staff between 2018 and 2024.

| Name | Professorship | University | Year |
|---|---|---|---|
| Albrecht, C. | Adjunct Professor | New York/USA | 2024 |
| Albrecht, C. | Visiting Professor | Yamagata/Japan | 2023 |
| *Körner, M.* | 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 |
| *Schmitt, M.* | 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 2024.

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

**Doctoral Theses**

Doctoral Theses completed by IMF or TUM-LMF/SiPEO staff (in *italic* typeface, until 2021) between 2018 and 2024.

| Name | Title | University | Year | Reviewers |
|---|---|---|---|---|
| Doda, S. | Population density estimation using satellite images | München (TU) | 2024 | Zhu, X.<br>Kuffer, M.<br>Wang, Y. |
| Heidler, K. | AI for cold regions | München (TU) | 2024 | Zhu, X.<br>Bamler, R.<br>Lefèvre, S. |
| Kortum, K. | Arctic Sea Ice Property Retrieval from Synthetic from Synthetic Aperture Radar with Deep Learning Methods | Bremen | 2024 | Spreen, G.<br>Haas, C. |
| Murashkin, D. | Remote sensing of sea ice leads with Sentinel-1 C-band synthetic aperture radar | Bremen | 2024 | Spreen, G.<br>Haas, C. |
| Schuegraf, P. | Extraktion und Rekonstruktion von Gebäudedächern aus Fernerkundungsbildern mithilfe von Deep-Learning-Techniken | Osnabrück | 2024 | Reinartz, P.<br>Fraundorfer, F.<br>Waske, B. |
| Traoré, R. | Automated Machine Learning for the Application in Earth Observation | München (TU) | 2024 | Zhu, X.<br>Chicano, F. |
| Xie, Y. | Fusion of 3D point clouds from satellite stereo imagery and SAR data for semantic labelling | München (TU) | 2024 | Zhu, X.<br>Reinartz, P.<br>Fraundorfer, F. |
| Zhang, G. | Physics-Aware Shadow Compensation for Hyperspectral Imagery Based on Spectral Unmixing and Data Fusion | Osnabrück | 2024 | Reinartz, P.<br>Scheunders, P. |
| Kondmann, L. | Deep Learning for Time-Series Analysis of Optical Satellite Imagery | München (TU) | 2023 | Zhu, X.<br>Schmitt, M.<br>Tuia, D. |
| Zekoll, V. | Cloud shadow removal for high spatial resolution optical satellite data | Osnabrück | 2023 | Reinartz, P.<br>Hinz, S. |
| Azimi, M. | Infrastructure and Traffic Monitoring in Aerial Imagery Using Deep Learning Methods. | München (TU) | 2022 | Bamler, R.<br>Reinartz, P.<br>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.<br>Tuia, D.<br>Kochupillai, M. |

| Name | Title | University | Year | Reviewers |
|---|---|---|---|---|
| Hochstaffl, P. | Trace gas concentration retrieval from short-wave infrared nadir sounding spaceborne spectrometers | München (LMU) | 2022 | Wenig, M.<br>Trautmann, T. |
| Hoffmann, E. | Predicting Building Functions by Fusing Social Media and Remote Sensing Data | München (TU) | 2022 | Zhu, X.<br>Jacobs, N.<br>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.<br>Mou, L.<br>Lefèvre, S. |
| Li, Q. | Deep Learning for Building Footprint Generation from Optical Imagery | München (TU) | 2022 | Zhu, X.<br>Mou, L.<br>Fraundorfer, F. |
| Molina García, V. | Retrieval of cloud properties from EPIC/DSCOVR | München (TU) | 2022 | Doicu, A.<br>Bamler, R.<br>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.<br>Tatem, A. |
| Rao, L. | Retrieval of Aerosol Properties from TROPOMI Measurements | München (TU) | 2022 | Doicu, A.<br>Bamler, R.<br>Cohen, B. |
| Rosu, F. | A Study on Multistatic SAR Configurations | Bukarest | 2022 | Datcu, M. |
| 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.<br>Wenig, M. |
| Xia, Y. | Deep Learning based Dense Matching Optimization in Remote Sensing | München (TU) | 2022 | Bamler, R.<br>Fraundorfer, F.<br>Reinartz, P. |
| Baumgartner, A. | Traceable Imaging Spectrometer Calibration and Transformation of Geometric and Spectral Pixel Properties | Osnabrück | 2021 | Reinartz, P.<br>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.<br>Bamler, R.<br>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.<br>Bamler, R.<br>Gamba, P. |

| Name | Title | University | Year | Reviewers |
|---|---|---|---|---|
| Ulmer, F. | Compensation of atmospheric disturbances in differential interferometry by adoption of high resolution weather models | München (TU) | 2021 | Bamler, R.<br>Eineder, M.<br>Walter, T. |
| Ge, N. | Sparse Recovery in Spaceborne SAR Tomography | München (TU) | 2020 | Zhu, X.<br>Bamler, R.<br>Ferro-Famil, L. |
| *Hu, J.* | From Remote Sensing Data to Urban Patterns: A Topology Guided Data Fusion Paradigm | München (TU) | 2020 | Zhu, X.<br>Bamler, R.<br>Reinartz, P. |
| Huang, Z. | A Study On Synthetic Aperture Radar Image Classification With Deep Learning | Chinese Academy of Sciences | 2020 | Lei, B.<br>Pan, Z.<br>Datcu, M. |
| *Hughes, L.* | Deep Learning for Matching High-Resolution SAR and Optical Imagery | München (TU) | 2020 | Schmitt, M.<br>Zhu, X.<br>Tupin, F. |
| *Koch, T.* | Automated and Precise 3D Building Reconstruction using UAVs | München (TU) | 2020 | Bamler, R.<br>Fraundorfer, F.<br>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.<br>Bamler, R.<br>Horwarth, M. |
| *Mou, L.* | Deep learning in remote sensing video analysis | München (TU) | 2020 | Zhu, X.<br>Bamler, R.<br>Tuia, D. |
| *Qiu, C.* | Deep Learning for Multi-Scale Mapping of Urban Land Cover from Space | München (TU) | 2020 | Zhu, X.<br>Schmitt, M. |
| Traganos, D. | Development of seagrass monitoring techniques using remote sensing data | Osnabrück | 2020 | Reinartz, P.<br>Topouzelis, K.<br>Waske, B. |
| Zhao, J. | Research on SAR Image Object/Land Fine Interpretation Methods | Shanghai (Jiao Tong) | 2020 | Yu, Y.<br>Xiong, H. |
| *Bagheri, H.* | Fusion of TanDEM-X data and optical imagery for 3D reconstruction of urban areas | München (TU) | 2019 | Zhu, X.<br>Schmitt, M.<br>Reinartz, P. |
| Bittner, K. | Building Information Extraction and Refinement from VHR Satellite Imagery using Deep Learning Techniques | Osnabrück | 2019 | Reinartz, P.<br>Fraundorfer, F. |
| Gisinger, Ch. | SAR Imaging Geodesy – Towards Absolute Coordinates with Centimeter Accuracy | München (TU) | 2019 | Pail, R.<br>Eineder, M.<br>Sörgel, U. |

| Name | Title | University | Year | Reviewers |
|---|---|---|---|---|
| *Heublein, M.* | Atmospheric Tomography using GNSS and InSAR Measurements | München (TU) | 2019 | Hinz, S.<br>Zhu, X. |
| Hong, D. | Regression-Induced Representation Learning and Its Optimizer: A Novel Paradigm to Revisit Hyperspectral Imagery Analysis | München (TU) | 2019 | Zhu, X.<br>Chanussot, J.<br>Xia, G. |
| *Kang, J.* | Object-based Multibaseline SAR Interferometry | München (TU) | 2019 | Zhu, X.<br>Bamler, R.<br>Sörgel, U. |
| Kuschk, G. | Efficient Large-Scale Stereo Reconstruction using Variational Methods | München (TU) | 2019 | Cremers, D.<br>Möller, M. |
| Liu, S. | Satellite measurements of total and tropospheric $NO_2$ | München (TU) | 2019 | Doicu, A.<br>Bamler, R.<br>Wenig, M. |
| Montazeri, S. | Geodetic Synthetic Aperture Radar Interferometry | München (TU) | 2019 | Zhu, X.<br>Eineder, M.<br>Sörgel, U. |
| Partovi, T. | Levels of Generalization on Automatic Building Reconstruction from Digital Surface Models | Osnabrück | 2019 | Reinartz, P.<br>Fraundorfer, F. |
| *Shi, Y.* | 3D urban mapping with SAR interferometry | München (TU) | 2019 | Bamler, R.<br>Eineder, E.<br>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.<br>Bamler, R:<br>Moreira, A. |
| Zhuo, X. | Semantic Information Extraction from UAV Imagery and Aerial Imagery | München (TU) | 2019 | Bamler, R.<br>Reinartz, P.<br>Fraundorfer, F: |
| Ansari, H. | Efficient High-Precision Time Series Analysis for Synthetic Aperture Radar Interferometry | München (TU) | 2018 | Bamler, R.<br>Eineder, M.<br>Hanssen, R. |
| *Baier, G.* | Interferometric Algorithms for Medium Resolution Sensors with Massive Coverage | München (TU) | 2018 | Zhu, X.<br>Bamler, R.<br>Reigber, A. |
| *Göritz, A.* | From laboratory spectroscopy to remote sensing: Methods for the retrieval of water constituents in optically complex waters | München (TU) | 2018 | Bamler, R.<br>Bracher, A.<br>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.<br>Hinz, S. |

**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 2024.

| Name | Subject | University | Year | M/D/B |
|---|---|---|---|---|
| Cárdenas Reyes, A. P. | Development of Carribbean seagrass ecosystem accounts fusing Earth Observation with biophysical modeling of coastal carbon | Würzburg | 2024 | M |
| Ben Gorbel, Y. | Person Detection in aerial and UAV images Using Deep Learning Algorithms | Tunis (SUP'COM) | 2024 | M |
| Cerón-Viveros, M. | A Deep learning-based framework for window information extraction from façade images with occlusions | Saarbrücken | 2024 | M |
| Dawda, A. | Atmospheric nitrogen dioxide (NO2) retrieval from the EnMAP hyperspectral imaging mission using machine learning | Salzburg | 2024 | M |
| Dubenzow, D. | Qualitätsbeurteilung von Satellitenbildern mit MTF | Stuttgart | 2024 | B |
| Jose, M. | Segmentation and Vectorization of curbstones from high-resolution ortho images for test sites in Bavaria, Germany | Leibniz Universität Hannover | 2024 | M |
| Klotz, P. | Assessment of the Suitability of PlanetScope SuperDove Imagery for Aquatic Remote Sensing at Lake Junin in Central Peru | München (LMU) | 2024 | M |
| Nallanukala, K. T. | Deep Learning based Super Resolution of Urban Digital Surface Models | Sankt Augustin (FH) | 2024 | M |
| Reber, M. | Lokalisierung und Klassifizierung von Lampen in hochaufgelösten nächtlichen Fernerkundungsdaten | Leibniz Universität Hannover | 2024 | M |
| Schmid, S. | Einfluss des Untergrunds auf die Bestimmung der Wassertiefe aus Spektralmessungen am Beispiel des Junínsees in Peru | Eichstätt | 2024 | M |
| Son, H. | Efficient parameterization for radiative transfer calculations in the infrared spectrum for information extraction of trace gases | München (TU) | 2024 | M |
| Thomas, A. | Exploration of Traffic Area Segmentation on Aerial Imagery to Address the Parking Data Requirements of Travel Demand Models | München (TU) | 2024 | M |
| Venkatesan, V. | SyntStereo2Real: Edge aware GAN for remote sensing image translation while maintaining stereo constraints | Freiburg | 2024 | M |
| 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 |

| Name | Subject | University | Year | M/D/B |
|---|---|---|---|---|
| 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 |
| 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 |

| Name | Subject | University | Year | M/D/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 |
| *Chen, S.* | 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 |
| *Gu, Z.* | 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 |
| *Jin, P.* | 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 |
| *Reiersen, G.* | End-to-End Aboveground Biomass Estimation with Deep Learning and RGB Drone Imagery | München (TU) | 2021 | M |
| *Sanjeevamurthy, P. M.* | 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 |
| 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 |

| Name | Subject | University | Year | M/D/B |
|---|---|---|---|---|
| *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 |
| *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 |

| Name | Subject | University | Year | M/D/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 Aeria 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 |
| *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 |

| Name | Subject | University | Year | M/D/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 DSCOVR/EPIC 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 2024 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 – Mar 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 Frazer University, Canada | Simon Frazer 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, Finnland | 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 |
| 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 2024 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 |
| | Columbia University, New York, USA | Oct. – Dec. 2024 | Humboldt & DLR |
| Alonso-Gonzalez, K. | ESA, ESRIN | Nov 2021 – Oct 2022 | DLR |
| Bittner, K. | Technische Universität Graz, Austria | Oct – Dec 2018 | DAAD |
| Christofilakos, S. | University of the Aegean, Mytilene, Greece | Oct – Dec 2024 | DLR |
| Diaconu, C. | Indian Institute of Science, Bangalore, India | May – Jun 2024 | Indo-German Science & Technology Centre |
| 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 |
| *Hughes, L.* | University of Wageningen, Netherlands | Sep – Oct 2019 | |
| *Kang, J.* | Technische Universität Graz, Austria | Aug – Sep 2018 | TUM |
| *Koch, T.* | IPN – Computing Research Center, Mexico City, Mexico | Mar – Apr 2018 | TUM |
| Langheinrich, M. | Césbio, Toulouse, France | Oct – Nov 2024 | Procope Mobility Programme |
| Lehner, S. | Simon Fraser University, Vancouver, Canada | Feb – Apr 2018 | DLR |
| *Liebel, L.* | 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<br>Apr – May 2019 | TIT |
| Mou, L. | University of Cambridge, England | Apr – May 2019 | TUM |

| Staff Member | Institution | Period | Funding |
|---|---|---|---|
| *Qiu, C.* | University of Pavia, Italy | Oct – Dec 2019 | TUM |
| Rother, T. | Macquarie University Sydney, Australia | Nov 2019 – Mar 2020 | DLR |
| *Rußwurm, M.* | ESRIN PhiLab, Frascati, Italy | Jun 2018 | TUM |
| | University of Southern Brittany (Vannes Institute of Technology) / Institut de Recherche en Informatique et Systèmes Aléatoires, Vannes, France<br>Université Rennes 2, France | Nov 2018 – Feb 2019 | TUM |
| | Stanford University, California, USA | Mar – Apr 2020 | DAAD |
| *Shi, Y.* | 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 2024.

| 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. | Spatio-Spectral Contrast for Anomaly Feature Maps | DE 10 2024 119195.3 | 2024 | DE |
| Salisch, T,<br>Albrecht, C. | Verfahren zur Segmentierung und Clusterung von Linienelementen in bereitgestellten Daten | DE 10 2024 125708.3 | 2024 | DE |
| Kahle, R.<br>Runge, H.<br>Suchandt, S.<br>Balss, U.<br>Fritz, T. | Satelliten-Konfiguration zur Fernerkundung der Erdoberfläche, insbesondere zur Bestimmung der Geo-Koordinaten von Radar-Punktzielen, und Verfahren unter Verwendung einer derartigen Satelliten-Konfiguration | DE 10 2024 118419.1 | 2024 | DE |
| Carballo, J. A.<br>Campos, L.<br>Schmidt, K.<br>Borg, E.<br>Wilbert, S. | Solarelement mit einem Messsystem zur Bestimmung einer Zustandsänderung eines Sensors für Solarstrahlung sowie Messsystem zur Bestimmung einer Zustandsänderung eines Sensors für Solarstrahlung | EP 4431886 | 2024 | DE, EP |
| Albrecht, C.<br>Sun, Y. | LiDAR basierte Detektion von Fahrbahnmarkierungen aus der Vogelperspektive | DE 10 2023 125379.4 | 2023 | DE, PCT |
| Runge, H.<br>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.<br>Sorg, M.<br>Dahms, T.<br>Haschberger, P.<br>Manß, C. | Verfahren zum Auffinden von Lebewesen aus der Luft | DE10 2021 131937.4 | 2021 | DE |
| Wilbert, S.<br>Wolfertstetter, F.<br>Schmidt, K.<br>Borg, E.<br>Carballo, J.A. | Leuchtensystem sowie Strahlungssensorsystem mit Leuchtensystem | DE 10 2021 134127.2 | 2021 | DE, EP |
| Wilbert, S.<br>Wolfertstetter, F.<br>Schmidt, K.<br>Borg, E. | Verfahren zum Abschätzen eines Zustandes eines Direktstrahlungssensors | DE 10 2021 134129.9 | 2021 | DE, EP, PCT |

| Name | Patent | Patent No | Year | Countries |
|---|---|---|---|---|
| Rosenbaum, D.<br>Pypetz, M.<br>Zumkeller, T. | Vorrichtung zur kontaktlosen Ermittlung zeitabhängiger Positionen eines mechanisch beweglichen Eingabeelements | DE 10 2019 101738.6 | 2019 | DE |
| Pleskachevsky, A. | Verfahren zur Herleitung von Seestatusparametern | DE 10 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 |
|---|---|---|---|---|
| Plattner, S.<br>Gege, P.<br>Schwarzmaier, T. | Wasserfahrzeug zur Validierung von multi- und hyperspektralen optischen Daten | DE 10 2022 125348 | 2024 | DE |
| Runge, H.<br>Krauß, T. | Verfahren und Vorrichtung zur Georeferenzierung von Bilddaten | DE 10 2021 129278 | 2023 | DE |
| Borg, E.<br>Schmidt, K. | Verfahren und Anordnung zum Kalibrieren flugobjektmontierter Sensoren | DE 10 2018 208738 | 2022 | DE |
| Klarner, R.<br>Runge, H. | Spurhalteassistenzsystem für ein Fahrzeug | DE 10 2015 111925 | 2021 | DE |
| Klarner, R.<br>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.<br>Schwarzmaier, T.<br>Tank, V.<br>Rupprecht, V.<br>Nitsche, R.<br>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.<br>Runge, H. | Fahrerassistenzsystem | EP 3411276 | 2020 | EP, US, DE, FR, GB, NL, SE |
| Suchandt, S,<br>Runge, H. | Schiffsdetektion in Interferometrie-Radardaten | EP 3019889 | 2020 | EP, ES, FR, GB, IT |
| Borg, E.<br>Schmidt, K.<br>Schmidt, K.<br>Renke, F.<br>Spengler, D. | Verfahren zum Schätzen eines Zustandes eines Globalstrahlungssensors und Messstation mit Globalstrahlungssensor | DE 10 2018 204146 | 2019 | DE |
| Duque Biarge, S.<br>Parizzi, A.<br>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.<br>Klarner, R. | Positionsbestimmung eines Fahrzeugs auf oder über einer Planetenoberfläche | EP 3049825 | 2019 | EP, US, FR, GB, IT |
| Runge, H.<br>Krauß, T. | Verfahren und Vorrichtung zur Georeferenzierung von Luftbilddaten | DE 10 2016 123286 | 2019 | DE, EP, AT, FR, ES |

| Name | Patent | Patent No. | Year | Countries |
|---|---|---|---|---|
| Klarner, R.<br>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 2018-2024 granted to IMF and TUM-LMF/SiPEO[1] staff (in *italic* typeface).

| Year | Award | Laureates (only IMF, LMF/SiPEO[1]) | Subject |
|---|---|---|---|
| 2024 | Symposium Interactive Prize Paper Award IGARSS 2024 (Pasadena/USA) | Ait Ali Braham, N.<br>Wang, Y.<br>Albrecht, C. | Semi-Supervised Learning for Hyperspectral Images by Non-Parametrically Predicting View Assignment |
| 2024 | Participation in 73rd Lindau Nobel Laureate Meeting | Gottschling, N. | |
| 2024 | IEEE Senior Member | Heiden, U. | |
| 2024 | Best Paper Award<br>German Conference on Pattern Recognition (Munich) | Henry, C.<br>Fraundorfer, F. | Worldwide High-fidelity Road Extraction from Aerial and Satellite Imagery enabled by Low-fidelity OpenStreetMap Labels |
| 2024 | Top-20 Best Reviewer 2023 of Remote Sensing of Environment (Elsevier) | Pleskachevsky, A. | |
| 2024 | DLR Senior Scientist | Storch, T. | |
| 2024 | Best Abstract Presentation Award<br>Intern. Conference on Remote Sensing and Geoinformation of Environment (Paphos/CY) | Yang, Y.-J. | Near Real-Time Oil Pollution Monitoring Using SAR for the Southeastern Mediterranean Sea |
| 2024 | 3rd Place, Best Poster Award<br>Helmholtz AI Conference 2024 (Düsseldorf) | Zappacosta, A. | Fostering Environmental Safety in Ghana with Earth Observation and Foundation Models |
| 2023 | PECFAR Fellowship Grant<br>(Paired Early Career Fellowship in Applied Research) | Diaconu, C. | |
| 2023 | 2nd Place<br>Deep Nutrient Deficiency Challenge<br>(ICCV 2023) | Wang, Y. | |
| 2022 | TUM Emeritus of Excellence<br>(TU München) | Bamler, R. | Excellent track records and the potential to continue to enrich university life |
| 2022 | Best Reviewer Award 2022<br>(XXIV ISPRS Congress) | Cerra, D.<br>Müller, R. | |

[1] until 2021

| Year | Award | Laureates (only IMF, LMF/SiPEO[1]) | Subject |
|---|---|---|---|
| 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 Intern. Conference on Pattern Recognition Applications and Methods (virtual) | 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.<br>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 (Santa Clara/USA) | Merkle, N.<br>Azimi, S.<br>Henry, C.<br>Yuan, X. | User-driven flood response & monitoring information – Key findings of the Data4Human project |
| 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.<br>Valks, P. | Proposal "DriveClean" |
| 2022 | Best Poster Award Helmholtz AI Conference 2022 (Dresden) | Wang, Y.<br>Hoffmann, E.<br>Zhu, X. | So2Sat POP - A Curated Benchmark Data Set for Population Estimation from Space on a Continental Scale |
| 2022 | 3rd Prize Landslide4Sense Challenge (Institute of Advanced Research in Artificial Intelligence, IARAI) | Yao, W.<br>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.<br>de Zan, F.<br>Parizzi, A. | Study of Systematic Bias in Measuring Surface Deformation with SAR Interferometry |

| Year | Award | Laureates (only IMF, LMF/SiPEO[1]) | Subject |
|---|---|---|---|
| 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 | 3rd 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.*<br>*Ebel, P.*<br>*Schmitt, M.*<br>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 |
| 2020 | 2nd Prize IEEE GRSS Data Fusion Contest 2020 | Cerra, D.<br>Merkle, N.<br>Henry, C.<br>Alonso, K.<br>d'Angelo, P.<br>Auer, S.<br>Bahmanyar, R.<br>Yuan, X.<br>Bittner, K.<br>Langheinrich, M.<br>Zhang, G.<br>Pato, M.<br>Tian, J.<br>Reinartz, P. | Land cover classification with low- and high-resolution labels |

| Year | Award | Laureates (only IMF, LMF/SiPEO[1]) | Subject |
|---|---|---|---|
| 2020 | 3rd Prize<br>IEEE GRSS Data Fusion Contest 2020 | Cerra, D.<br>Merkle, N.<br>Henry, C.<br>Alonso, K.<br>d'Angelo, P.<br>Auer, S.<br>Bahmanyar, R.<br>Yuan, X.<br>Bittner, K.<br>Langheinrich, M.<br>Zhang, G.<br>Pato, M.<br>Tian, J.<br>Reinartz, P. | Land cover classification with low-resolution labels |
| 2020 | 1st Place Three Minute Thesis Competition<br>IGARSS 2020 (virtual) | *Gawlikowski, J.* | 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<br>(Gesellschaft für Geodäsie, Geoinformation und Landmanagement und Nico Rüpke-Stiftung) | *Li, Q.*<br>Auer, S.<br>*Schmitt, M.*<br>*Shi, Y.*<br>Zhu, X. | KI-basierte Detektion von Gebäuden mittels Deep Learning und amtlichen Geodaten zur Baufallerkundung |
| 2020 | Best Paper Award<br>EarthVision 2020 (virtual) | *Rußwurm, M.*<br>*Körner, M.* | Meta-Learning for Few-Shot Land Cover Classification |
| 2020 | Lehrpreis 2020, Fachschaft Luftfahrt, Raumfahrt Geodäsie (TU München) | *Schmitt, M.* | Übung „Fernerkundung und Signalverarbeitung" |
| 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<br>(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 |

| Year | Award | Laureates (only IMF, LMF/SiPEO[1]) | Subject |
|---|---|---|---|
| 2019 | 1st Prize<br>IEEE GRSS Data Fusion Contest 2019 | d'Angelo, P.<br>Cerra, D.<br>Azimi, S.<br>Merkle, N.<br>Tian, J.<br>Auer, S.<br>Pato, M.<br>de los Reyes, R.<br>Zhuo, X.<br>Bittner, K.<br>Krauss, T.<br>Reinartz, P. | Multi-view Semantic Stereo Challenge |
| 2019 | Best Poster Award 2019<br>MRSS/PIA 2019 (Munich) | *Aigner, S.*<br>*Körner, M.* | 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<br>(SPIE Journal of Applied Remote Sensing) | Reinartz, P. | Deep learning decision fusion for the classification of urban remote sensing data |
| 2019 | GeodäTUM Award 2019 | *Schmitt, M.* | Best geodesy-related lecture at TUM Department of Civil, Geo and Environmental Engineering |
| 2019 | Best Reviewer Award, MRSS/PIA 2019 (Munich) | *Schmitt, M.* | |
| 2019 | Best Student Paper Award<br>JURSE 2019 (Vannes/F) | *Stark, T.*<br>Zhu, X. | Slum Mapping in Imbalanced Remote Sensing Datasets Using Transfer Learned Deep Features |
| 2019 | Remote Sensing 10th Anniversary Best Paper Award 2019 | Storch, T.<br>Müller, R. | The EnMAP Spaceborne Imaging Spectroscopy Mission for Earth Observation |
| 2019 | Outstanding Paper Award<br>WHISPERS 2019 (Amsterdam/NL) | Zhang, G.<br>Cerra, D.<br>Müller, R. | Towards the Spectral Restoration of Shadowed Areas in Hyperspectral Images based on Nonlinear Unmixing |

| Year | Award | Laureates (only IMF, LMF/SiPEO[1]) | Subject |
|---|---|---|---|
| 2018 | 2nd Prize<br>IEEE GRSS Data Fusion Contest 2018 | Cerra, D.<br>Pato, M.<br>Carmona, E.<br>Tian J.<br>Azimi, S.<br>Müller, R.<br>Bittner, K.<br>Henry, C.<br>Vig, E.<br>Kurz, F.<br>Bahmanyar, R.<br>d'Angelo, P.<br>Alonso, K.<br>Fischer, P.<br>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<br>(Romanian Researchers' Association) | Datcu, M. | |
| 2018 | Best Paper Award<br>ALLDATA 2018 (Athens/Greece) | Dumitru, C.<br>Schwarz, G.<br>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<br>(IEEE Geoscience and Remote Sensing Letters) | Ghamisi, P. | |
| 2018 | 1st Place Student Paper Award<br>EUSAR 2018 (Aachen) | Kang, J.<br>Wang, Y.<br>Zhu, X. | Low Rank Modeling based Multipass InSAR technique |
| 2018 | Länderpreis 2018<br>(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<br>(ISPRS TC I Midterm Symposium, Karlsruhe) | *Schmitt, M.* | |
| 2018 | Best Paper Honourable Mention<br>ISPRS TC I Midterm Symposium (Karlsruhe) | *Schmitt, M.*<br>*Hughes, L.*<br>Zhu, X. | The SEN1-2 Dataset for Deep Learning in SAR-Optical Data Fusion |

| Year | Award | Laureates (only IMF, LMF/SiPEO[1]) | Subject |
|---|---|---|---|
| 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 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| 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 | | | ■ | | | | |

| Member | Agency/ Institution | Board | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| Eineder, M. | ESA | EGMS Technical Steering Committee | | | ■ | ■ | ■ | ■ | |
| Fraundorfer, F. | ISPRS | Co-Chair: 3D scene reconstruction for modeling and mapping (WG II/3) | | | | | ■ | ■ | ■ |
| Gege, P. | CEOS | Analysis Ready Data for Aquatic Reflectance | | | | | | | ■ |
| | CSIRO | AquaWatch Australia Science Team | | | ■ | ■ | | | |
| | CSIRO | AquaWatch Australia International Science Advisory Group | | | | | ■ | ■ | ■ |
| | CSIRO | Aquawatch Nomenclature Focus Team | | | | | ■ | ■ | ■ |
| | IOCCG | Benthic Reflectance Working Group | | | | ■ | ■ | ■ | ■ |
| | USGS | DLR-USGS Collaboration | | | | | | | ■ |
| Gisinger C. | 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 | | | ■ | ■ | | | |
| | IEEE | P4005 Working Group | | | | | ■ | ■ | ■ |
| Hellekes, J. | ECTRI | Member of Thematic Group "Traffic Management & Modelling TMM" | | | | ■ | ■ | ■ | ■ |
| | FGSV | Member of board 1.2.5 "Aktualisierung der Empfehlungen für Verkehrserhebungen EVE" | | | | | | | ■ |
| Lichtenberg, G. | 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) | | | | ■ | | | |

| Member | Agency/ Institution | Board | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| | 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 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | EUMETSAT | METimage Science Advisory Group | | | | | | | ■ |
| | IAMAS | International Ozone Commission | | | | | | | ■ |
| | ISPRS | Co-Chair: Remote Sensing of Atmospheric Environment (WG III/8) | ■ | ■ | ■ | ■ | ■ | | |
| | AERSS | Deputy President | | | | | ■ | ■ | ■ |
| Main-Knorn, M. | ESA | Sentinel 2 Mission Performance Cluster | ■ | ■ | | | | | |
| Merkle, N. | ISPRS | Supporter: Disaster Management (ICWG III/IVa) | | | | | ■ | ■ | ■ |
| Pertiwi, A. | ESA | Sentinel 2 Mission Performance Cluster | | | | | ■ | ■ | ■ |
| | ESA | Sentinel 2 Quality Working Group | | | | | ■ | ■ | ■ |
| 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" | | | | | ■ | ■ | |
| de los Reyes, R. | 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 | | | ■ | ■ | ■ | ■ | |

| Member | Agency/ Institution | Board | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| 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 | | | ■ | ■ | ■ | | |
| | 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

**Editorial Memberships**

| Member | Journal / Book / Series | Publisher | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| Auer, S. | Remote Sensing Special Issue, Guest Editor | MDPI | | ■ | ■ | ■ | ■ | | |
| Bittner, K. | PFG - Journal of Photogrammetry, Remote Sensing and Geoinformation Science | Springer | | | | | | | ■ |
| Bamler, R. | Remote Sensing Special Issue, Guest Editor | MDPI | ■ | | | | | | |
| Cerra, D. | Remote Sensing Special Issue, Guest Editor | MDPI | | | ■ | | | | |
| | Transactions on Geoscience and Remote Sensing, Associated Editor | IEEE | | | | | | ■ | ■ |
| | International Journal of Remote Sensing, Guest Editor | Taylor & Francis | | | | | | | ■ |
| 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 | | | ■ | | | | |

| Member | Journal / Book / Series | Publisher | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| 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 | ■ | | | | | | |
| | 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 | | | | | | ■ | ■ |
| | International Journal of Remote Sensing, Guest Editor | Taylor & Francis | | | | | | | ■ |
| 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 | ■ | | | | | | |
| Lelli, L. | Atmosphere Special Issue, Guest Editor | MDPI | | | | ■ | ■ | ■ | |

| Member | Journal / Book / Series | Publisher | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| | Remote Sensing Special Issue, Guest Editor, Topical Advisory Panel | 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 | | | ■ | ■ | ■ | ■ | |
| Merkle, N. | GIScience & Remote Sensing, Article collection guest advisor | Taylor & Francis | | | | | | | ■ |
| | Remote Sensing Special Issue, Guest Editor | MDPI | | | | | | | ■ |
| Mou, L. | Natural Resource Modeling, Associate Editor | Wiley | | | | ■ | | | |
| Müller, R. | International Journal of Remote Sensing, Guest Editor | Taylor & Francis | | | | | | | ■ |
| Reinartz, P. | International Journal of Image and Data Fusion | Taylor & Francis | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Remote Sensing | MDPI | ■ | ■ | ■ | ■ | ■ | ■ | |
| *Schmitt, M.* | 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 | | | | ■ | | | |

| Member | Journal / Book / Series | Publisher | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|
| 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
EGU: European Geosciences Union
IEEE: Institute of Electrical and Electronics Engineers
ISPRS: International Society for Photogrammetry and Remote Sensing
MDPI: Multidisciplinary Digital Publishing Institute
SPIE: International Society for Optics and Photonics

# Publications

This chapter show IMF's publication activities for the time period between 2018 – 2024 as classified by DLR's publication data bank *elib*:

– Refereed publications, including ISI/SCOPUS refereed journal articles

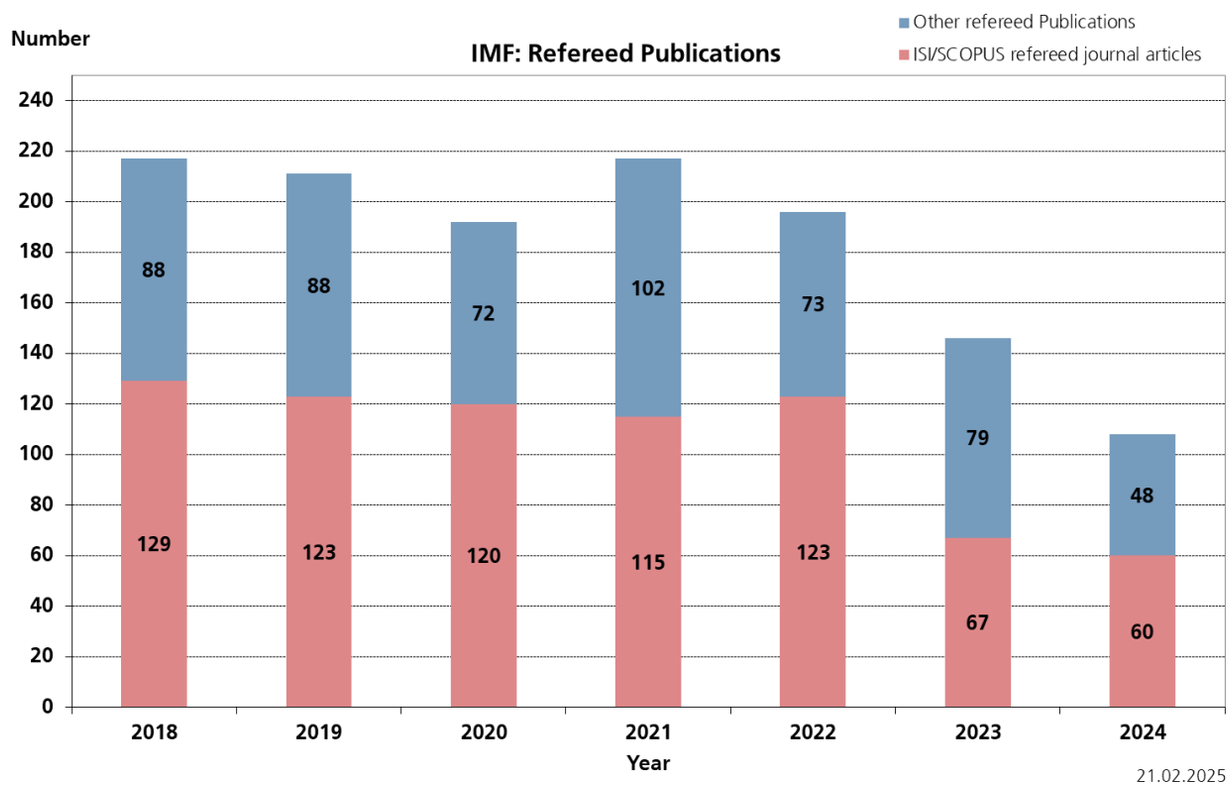
– conference Items (refereed and non-refereed)

– books and book sections.

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

Daily updated, detailed annual information on each publication category can be accessed via the links given below each diagram.

**Refereed Publications**



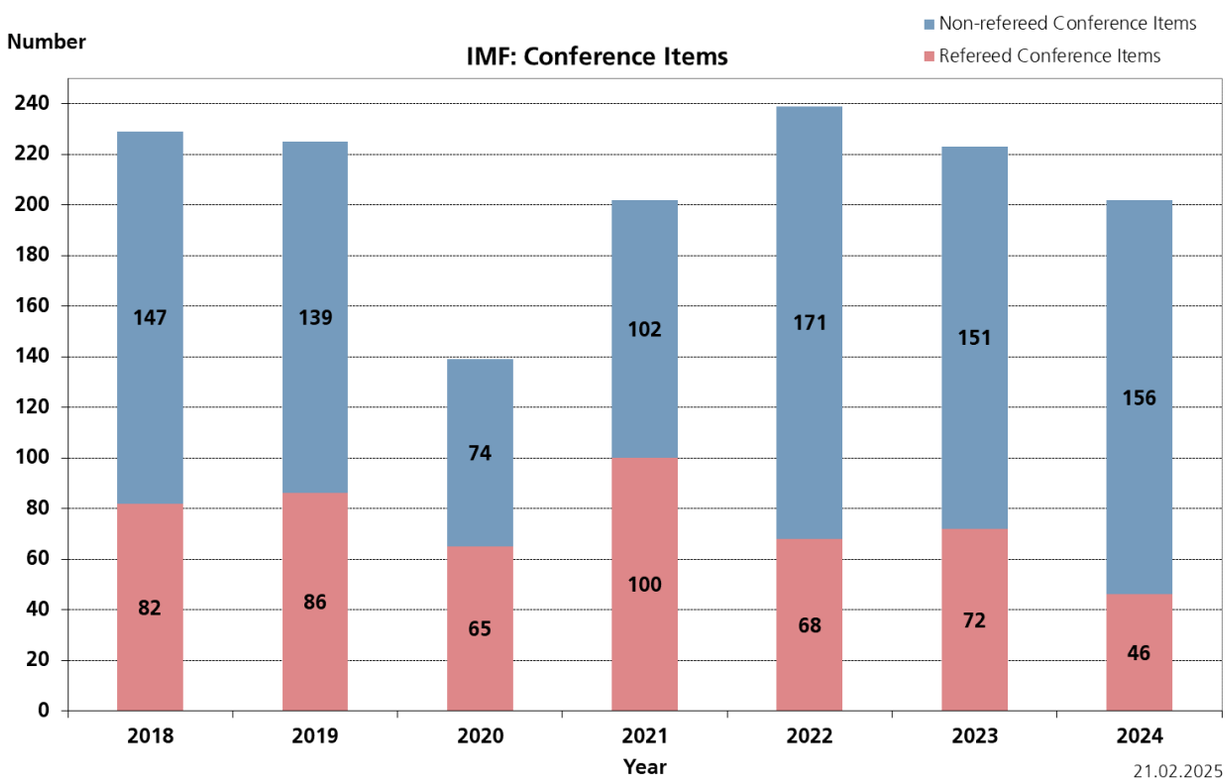

List of all refereed publications per year:

- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024

List of ISI/SCOPUS refereed journal articles per year:

- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024

**Conference Items**



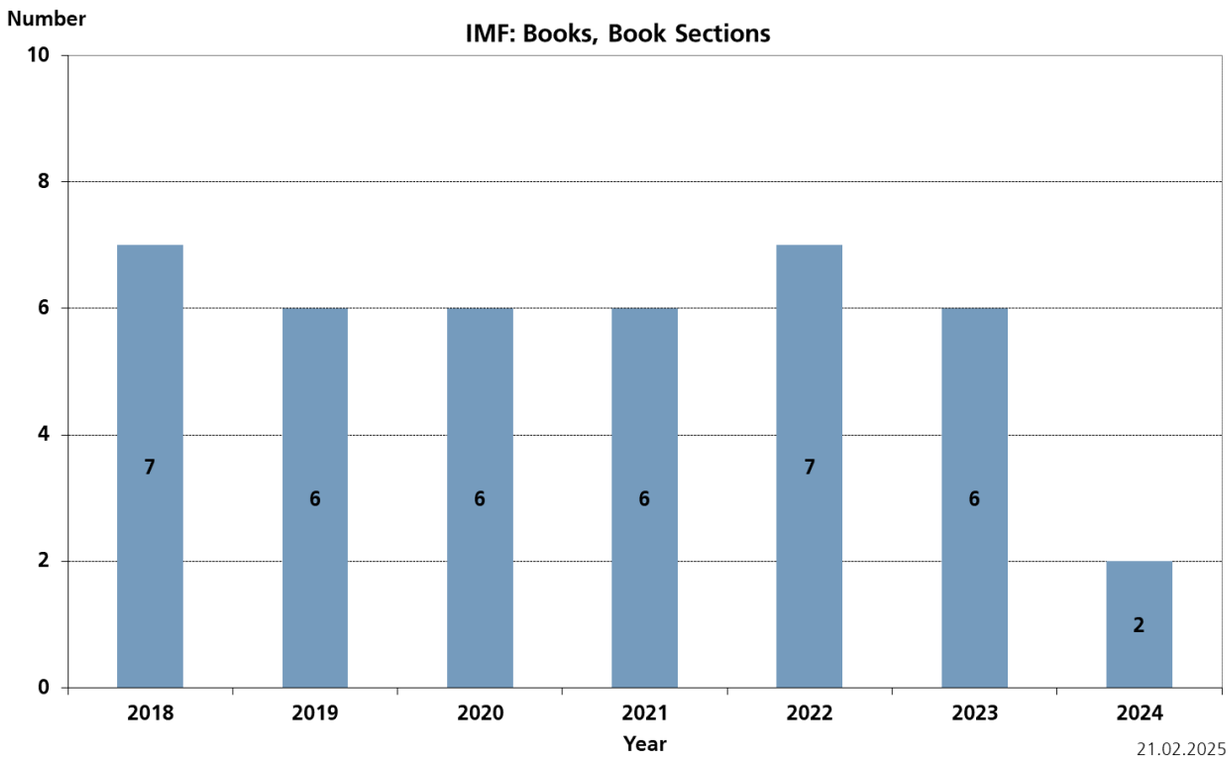

List of all conference items per year:

- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024

List of refereed conference items per year:

- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024

**Books and Book Sections**




List of books and book sections per year:

– 2018
– 2019
– 2020
– 2021
– 2022
– 2023
– 2024