

Curriculum Vitae

Magaly Koch

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ACADEMIC TRAINING

- 1993 **Ph.D.**, Geology, Boston University, Boston, MA, USA
1987 **Diploma**, Ground Water Hydrology, Polytechnic University of Catalonia (UPC), Barcelona, SPAIN
1986 **M.Sc.**, Geology, University of Cologne, Cologne, GERMANY

RESEARCH INTERESTS

Exploration of groundwater resources, assessment of natural hazards and land use change impact on water/land resources in arid/semiarid & tropical environments. Past research projects include: (i) estimation of the groundwater potential in Egypt, Sudan (Darfur and Red Sea Hills), Oman and United Arab Emirates, (ii) evaluation of the geomorphic effects of the Gulf War in Kuwait using pre- and post-war satellite images, (iii) characterization of wetland ecosystem dynamics in Spain (La Mancha, Los Monegros) and Brazil (Pantanal), (iv) assessment of flash flood potential of ephemeral rivers (wadis) in Egypt, Oman, and United Arab Emirates, (v) use of remote sensing in archaeological exploration (Maya region in Guatemala and Axumite kingdom in northern Ethiopia), (vi) examination of relationship between land cover/use changes, hydrology and infectious diseases (malaria) in Jimma highland region (Ethiopia), and Pantanal wetland region (Brazil), and (vii) use of space observation for monitoring/analyzing food and water nexus under changing conditions in arid/semiarid regions (Egypt, Ethiopia).

TEACHING INTERESTS

Geospatial technologies (GIS and RS) and applications in environmental sciences; geospatial data concepts, methods and tools for the study of global environmental change; digital image processing techniques and applications in geology, hydrology, climatology, agriculture, and public health.

ACADEMIC HISTORY & PROFESSIONAL EXPERIENCE

- 1998 – Pres *Research Associate Professor*, Department of Earth & Environment, Boston University, USA (*Research Assistant Professor* 1998-2005)
2019 – Pres *Lecturer*, Harvard Extension School, Harvard University, Cambridge, USA
2013 – Pres *Lecturer*, Department of Civil & Environmental Engineering, Tufts University, Medford, USA
2018 *Lecturer*, Department of Earth & Environment, Boston University, USA

- 2017/2018 *Visiting Professor* under the World Class Professor Program, Center for Coastal Rehabilitation & Disaster Mitigation Studies, Diponegoro University, Semarang, INDONESIA (3 months in 2017; 1 month in 2018)
- 2014 – 2015 *Fulbright Lecturer/Researcher*, Graduate School of Environmental Studies, Tohoku University, Sendai, JAPAN (11 months)
- 2012 *Visiting Professor*, Center for Northeast Asian Studies, Tohoku University, Sendai, JAPAN (3 months as foreign research staff member of the National University Corporation Tohoku University)
- 2011 – 2012 *Lecturer*, Department of Urban & Environmental Policy & Planning, Tufts University, USA
- 2011 *Lecturer*, Department of Geography & Environment, Boston University, USA
- 2008 *Visiting Professor/Lecturer*, Department of Geology and Geochemistry, Autonomous University of Madrid, SPAIN (5 months)
- 2000 – 2001 *Visiting Professor*, Autonomous University of Madrid, SPAIN (1 year)
- 1999 – 2007 *Lecturer*, Department of Archaeology, Boston University, USA
- 1996 – 1998 European Community *Marie Curie Research Fellow*, Remote Sensing Unit, Earth Sciences Institute, CSIC, Barcelona, SPAIN (2 years)
- 1993 – 1996 *Research Associate*, Center for Remote Sensing, Boston University, USA
- 1988 – 1992 *Research Assistant*, Center for Remote Sensing, Boston University, USA
PhD thesis work “Groundwater potential of the Red Sea Province, Sudan”, funded by US Agency for International Development (USAID)
- 1983 – 1986 *Research Assistant*, Geology Department, University of Cologne, GERMANY
Conducted field work (lithological and structural mapping) in Cantabrian Mountains, N-Spain as part of MSc thesis
- 1983 *Internship*, Uribante-Caparo Hydroelectric Dam Project, VENEZUELA (2 months)

HONORS & AWARDS

- 2017/2018 *World Class Professor Program* for a 4-month stay in Diponegoro University, Semarang, funded by the Ministry of Research, Technology and Higher Education, INDONESIA
- 2014 – 2015 *Fulbright Fellowship* for a 11-month research/lecturing stay in Tohoku University, JAPAN
- 2012 *Tufts Institute of the Environment (TIE) Award* for developing and co-teaching an interdisciplinary course on “Global Environmental Change” (with E. Naumova, Tufts)
- 2007 *Boston University Curriculum Development Award* for developing a course on “Geospatial Methods in Environmental Studies”, Boston University, Boston, USA
- 2000 – 2001 *Autonomous University of Madrid Honorary Professor* for academic contributions to the Department of Agro-Chemistry, Geology and Geochemistry, Madrid, SPAIN
- 1996 – 1998 *Marie Curie Research Fellowship* granted by the European Community for conducting postdoctoral research at the Earth Sciences Institute (CSIC), Barcelona, SPAIN
- 1996 *British Council Special Visit Grant* for a 3-week research visit to the Geography Department of The University of Nottingham, UK

- 1994 *Summer School for Earth Sciences Award* for attending a 1-week workshop on “Processes of Global Change”, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, USA
- 1988 – 1990 *Research Assistant Fellowship* for PhD thesis work at Boston University, Boston, USA
- 1987 *Postgraduate Fellowship* awarded by the Spanish Government, Ministry of Foreign Affairs for a 6-month special training program in hydrogeology at the Polytechnic University of Catalonia (UPC), Barcelona, SPAIN
- 1984 – 1986 *Research Assistant Fellowship*, University of Cologne, GERMANY
- 1981 – 1982 *Student Exchange Fellowship* for a 1-year stay at the University of Salamanca, SPAIN, awarded by the Academic Exchange Service (Akademischer Austauschdienst) of the University of Cologne, GERMANY

RESEARCH SUPPORT

“Collaborative Research: CPS: NSF-JST: Enabling Human-Centered Digital Twins for Community Resilience”, NSF, (2024-2027, \$200,199) BU-PI M. Koch (University of California, Irvine - PI Nalini Venkatasubramanian, Tohoku University - PI Shunichi Koshimura; total project amount: \$1 Million)

“IRES Track II: Multidisciplinary Coastal Zone Hazards Institutes – France, Japan, Indonesia”, NSF, (2022-2026, \$399,636) PI M. Koch

“Natural disaster damage assessments using PALSAR-2/-3 and ALOS-3 optical data”, Advanced Land Observation Satellite-3/4 (ALOS-3/4) data take grant (EORA3), science program supported by the Japan Aerospace Exploration Agency (JAXA), (2022-2025) PI M. Koch

“Benchmark Data Development to Classify Damage for Natural Disaster Relief Efforts”, NGA, (2020-2022; \$179,904) BU-PI M. Koch (subaward through Tufts Univ., Tufts-PI L. Baise)

“Building Collapse Detection Using Satellite Imagery After Earthquake Events: Collaborative Research with Tufts University and Boston University”, USGS-EHP, (2019-2020; \$44,789) BU-PI M. Koch (Tufts-PI L. Baise)

“IRES Track I: Collaborative Research: U.S.-Indonesian Research Experience for Students on Sustainable Adaptation of Coastal Areas to Environmental Change”, NSF, (2018-2023, \$199,304) PI M. Koch (Co-PI S. Gopal)

“Mission Earth: Fusing GLOBE with NASA Assets to Build Systemic Innovation in STEM Education”, NASA (CAN), (2016-2020, \$1,801,738) Co-I M. Koch (PI P. Garik, BU)

“ALOS-2 Applications for Water Resources Development in Arid Lands”, Advanced Land Observation Satellite-2 (ALOS-2) data take grant (ALOS2-RA6-3131), science program supported by the Japan Aerospace Exploration Agency (JAXA), 50 satellite images/year, (2016-2021, data value \$6,250/yr) PI M. Koch

“Understanding Optimal Conditions for Mosquito Abundance using Satellite Remote Sensing Environmental and Predictive Correlation Modeling in Veracruz, Mexico”, MIT-Mexico Veracruz Seed Fund, (2016-17, \$29,700) Co-I M. Koch (PI L. Gehrke, Co-PI I. Bosch, MIT)

“Water Map Project”, Ajman Municipality and Planning Dept., U.A.E., (2015-16, \$20,013) Co-PI M. Koch (PI F. El-Baz, BU)

“Environmental Remote Sensing; Multisensor Investigation of Arid Regions with Implications for Groundwater Exploration”, Fulbright grant for a 11-month research/lecturing stay in Tohoku University, Japan, (2014-15, ¥6,700,000) PI M. Koch

“A Geospatial Liquefaction Model for Rapid Response and Loss Estimation”, NSF, (2013-16, \$264,927) Co-I M. Koch (PI L. Baise, Tufts Univ.)

“Desert Surface Mapping Using RADARSAT-2 Polarimetric and Interferometric Information”, RADARSAT-2 data take grant (Project # 5138), Canadian Space Agency, SOAR-Education International program, 20 satellite images, (2013-16, data value \$80,000) PI M. Koch, Co-PI A. Gaber (Port Said Univ.), M. Sato (Tohoku Univ.)

“Investigating the Use of ALOS-2/PALSAR-2 for Hydrogeological Studies in Desert Environments”, Advanced Land Observation Satellite (ALOS-2) data take grant (ALOS-RA-1389), science program supported by the Japan Aerospace Exploration Agency (JAXA), 50 satellite images per year, (2013-16, data value \$30,000/yr) PI M. Koch, Co-PI A. Gaber (Port Said Univ.), M. Sato (Tohoku Univ.)

“US-Egypt Cooperative Research: Assessing Natural Resources Potential for Land Use Planning and Development in West Aswan, Egypt”, NSF, (2010-13, \$200,000 (US budget \$103,196)) PI M. Koch (Co-PI M.H. Geriesh, Suez Canal Univ., Egypt)

“Spectral soil mapping for agricultural land development in El-Gallaba Plain, Western Desert, Egypt”, NSF-USAID Partnerships for Enhanced Engagement in Research (PEER) Program, (2012-13, \$50,000 (Egyptian budget)) US PI M. Koch, Egyptian PI El Sayed Abbas Zaghoul (NARSS)

“Applications of ALOS in Arid Land Studies: Land Degradation, Natural Hazards and Water Resources”, Advanced Land Observation Satellite (ALOS) data take grant (ALOS-RA-81), science program supported by the Japan Aerospace Exploration Agency (JAXA), 50 satellite images, (2007-11, data value \$6,250/yr) PI M. Koch

“The Agro-ecology of Maize and Malaria in Ethiopia”, Rockefeller Foundation, (2006-12, \$500,000) Co-I M. Koch (PI J. McCann, BU)

“Monitoring wetlands in semi-arid environments of Spain”, SOAR RADARSAT-2 data take grant (Project # 2615), Canadian Space Agency, 10 Radarsat-2 images, (2006-11, data value \$40,000) PI M. Koch, Co-PIs J. Gumuzzio and T. Schmid (Autonomous Univ. of Madrid (UAM))

“Antarctic periglacial, glacial and geo-structural study”, SOAR RADARSAT-2 data take grant (Project # 1376), Canadian Space Agency, 10 Radarsat-2 images, (2006-11, data value \$40,000) PI J. López-Martínez (UAM), Co-PI M. Koch and others

“Late Holocene Landscape Transformations and Culture Change at Aksum, Ethiopia”, NSF, (2006-07, \$9,460) PI M. Koch (Co-PI M. DiBlasi, BU)

“Assessing and monitoring wetlands in semi-arid environments of Spain”, funded by Ministry of Sciences and Technology of Spain, (2005-08, €53,000) Co-I M. Koch (PI J. Gumuzzio, UAM)

“Geomorphology, periglacial environment and neotectonics in the northern Antarctic Peninsula region: hydrological and environmental implications”, funded by the Ministry of Sciences and Technology of Spain, (2005-08, €90,000) Co-I M. Koch (PI J. López-Martínez, UAM)

“Application of hyperspectral data (HyMap) to the detection of soil degradation features in semi-arid environments”, funded by the Ministry of Sciences and Technology of Spain, supplementary funding for HyMap flight campaign, (2004, €15,000) Co-I M. Koch (PI J. Gumuzzio, UAM)

NASA ESE Scientific Data Purchase Recipient, two IKONOS images over the United Arab Emirates (Standard Original MSI/Pan images), SDP Tasking Request # 1560-2, (2003) PI M. Koch (Co-PI F. El-Baz, BU)

“Synergetic use of multispectral and hyperspectral data for change detection in arid and semi-arid wetlands in Spain”, funded by the Ministry of Sciences and Technology of Spain, (2002-05, €55,000) Co-I M. Koch (PI J. Gumuzzio, UAM)

“Archaeological and Remote Sensing Explorations at Holmul, Guatemala”, Vanderbilt University Discovery Grant Program (4-50-999-09037), (2002-04, \$50,000) Co-PI M. Koch (PI F. Estrada-Belli, Vanderbilt University)

NASA ESE Scientific Data Purchase Recipient, Earth Watch STAR-3i radar images and DEMs of Holmul, Guatemala, (2002) PI M. Koch (Co-PI F. Estrada Belli, Vanderbilt University)

“Use of space images for ground water exploration in the northern United Arab Emirates”, funded by the Sharjah Electricity & Water Authority, United Arab Emirates, (2001-06, \$1,745,000) Co-I M. Koch (PI F. El-Baz, BU)

“Land degradation monitoring in environmentally sensitive areas of Northeast and Central Spain”, ASTER data take grant (Research Program ID: AP-0072), supported by the Earth Remote Sensing Data Analysis Center, Tokyo, Japan (Agreement no. H130022), (2001-05) PI M. Koch

“Flash Flood Hazards of Active Wadis in Northern Oman, U.A.E. and Egypt”, ASTER data take grant (Research Program ID: AP-0075), supported by the Earth Remote Sensing Data Analysis Center, Tokyo, Japan (Agreement no. H130024), (2001-05) PI M. Koch

“Spectral and textural classification of multi-source imagery to monitor soil degradation stages in semi-arid environments”, CM Research Grant (07M/0056/2000), funded by Environmental Technology Program of the Community of Madrid (CM), Spain, (2001-02, €40,779) Co-I M. Koch (PI J. Gumuzzio, UAM)

“Synergetic use of multispectral and hyperspectral data in characterizing change in semi-arid wetlands in Spain”, HySens data take grant (HS-2000ES2), supported by the European Community - Improving Human Potential Programme: Access to Research Infrastructures at the German Aerospace Research Centre, DLR, under contract no. HPRI-CT-1999-00075, Hyperspectral DAIS7915 and ROSIS data take of La Mancha test site, Spain, (2000-02) Co-I M. Koch (PI J. Gumuzzio, UAM)

HySens (HS-2000ES2) research consultancy fee for M. Koch (reference no. 10329), The University of Nottingham, UK, (2000-01, £6,500)

“Wadi Atlas of Oman”, funded by the Ministry of Information, Oman, (1998-2000, \$500,000) Co-I M. Koch (PI F. El-Baz, BU)

“Identifying geological controls of land degradation in semi-arid regions: An integrative approach using remote sensing and GIS”, Marie Curie Research Training Grant, Commission of the European Communities, (1996-98, \$120,000) PI M. Koch

“Environmental atlas of Kuwait from satellite images”, funded by Kuwait Foundation for Advancement of Science, (1994-96, \$526,000) Co-I M. Koch (PI F. El-Baz, BU)

“Remote sensing aids to groundwater exploration in Egypt’s deserts”, funded by U.S. Department of Agriculture, International Cooperative Agreement under National Agricultural Research Project, (1992-95, \$340,000) Co-I M. Koch (PI F. El-Baz, BU)

“Damage assessment of the desert and coastal environment of Kuwait by remote sensing”, funded by Kuwait Foundation for Advancement of Science, (1992-94, \$485,000) Co-I M. Koch (PI F. El-Baz, BU)

“Groundwater potential of the Red Sea Province, Sudan”, funded by U.S. Agency for International Development (USAID), (1988-90, \$20,000) Co-PI M. Koch (PI F. El-Baz, BU)

PROFESSIONAL SOCIETY MEMBERSHIP

IEEE Geoscience and Remote Sensing Society, USA, 2005 – Pres

American Geophysical Union (AGU), USA, 2005 - Pres

The Geological Society of America (GSA), USA, 2001 - Pres

The American Society for Photogrammetry and Remote Sensing, USA, 1998 - Pres

Marie Curie Fellowship Association (MCFA), European Commission, 1998 - Pres

The Remote Sensing & Photogrammetry Society (RSPSoc), UK, 1997 - 2014

SERVICES TO THE DISCIPLINE

Editorial Positions:

2020 – Pres *Editorial Board Member of AL-FARAMA JOURNAL OF BASIC AND APPLIED SCIENCES*, published by Port Said University, Faculty of Sciences, EGYPT

2017 – Pres *Editorial Board Member of SCIENTIFIC REPORTS* – a Nature Research Journal, published by Nature Publishing Group of Springer Nature, London, UNITED KINGDOM

2015 – Pres *Section Editor-in-Chief, REMOTE SENSING* (open access journal), published by MDPI AG, Basel, SWITZERLAND

2023 - 2024 *Guest Editor of the Special Collection on “Monitoring of coastal zones”, SCIENTIFIC REPORTS*, Springer Nature, London, UNITED KINGDOM

2017 – 2018 *Guest Editor of the Special Issue on “Remote Sensing of Arid/Semiarid Lands”, REMOTE SENSING* (open access journal), published by MDPI AG, Basel, SWITZERLAND

2015 – 2016 *Guest Editor of the Special Issue on “Water Resources Assessment and Management in Drylands”, WATER* (open access journal), published by MDPI AG, Basel, SWITZERLAND

- 2012 – 2018 *Editorial Board Member* of the INTERNATIONAL JOURNAL OF ENVIRONMENT AND SUSTAINABILITY (IJES), Science Target Inc., Ottawa, CANADA
- 2012 – 2017 *Editorial Board Member* of Dataset Papers in Sciences (*GEOLOGY*), Hindawi Publishing Corporation, New York, USA

Review Panels:

- 2024 NSF Office of International Science and Engineering (OISE), *Reviewer and Panelist*
- 2024 NSF Directorate for STEM Education (EDU) and Division of Equity for Excellence in STEM (EES), *Reviewer and Panelist*
- 2021 – 22 NSF Office of International Science and Engineering (OISE) and Directorate for Social, Behavioral & Economic Sciences (SBE), *Reviewer and Panelist*
- 2016 – 24 New Zealand Ministry of Business, Innovation and Employment (MBIE) Science Funding, Endeavour Smart Ideas & Research Programs, *Review Panel Member*
- 2018 NSF Office of International Science and Engineering (OISE) and Directorate for Social, Behavioral & Economic Sciences (SBE), *Reviewer and Panelist*
- 2016 Fulbright U.S. Scholar Program, *Geoscience Peer Review Committee Member* (2017-18 Peer Review Cycle)
- 2016 National Academy of Sciences (NAS), Partnerships for Enhanced Engagement in Research (PEER) Program (Cycle 5) *Review Panel Member*

Conference Committees:

- 2025 *Keynote Speaker*, International Conference on Advanced Remote Sensing–Shaping Sustainable Global Landscapes (ICARS 2025), 26 – 28 March 2025, Barcelona, SPAIN. <https://sciforum.net/event/ICARS2025>
- 2023 *Webinar Chair*, Remote Sensing webinar on “Advances in Disaster Science”, 5-6 April 2023 (online). <https://www.mdpi.com/journal/remotesensing/events/16005>
- 2022 *Conference Executive Committee Member & Conference Chair*, 4th International Electronic Conference on Remote Sensing, e-conference, 25–27 January 2022. <https://ecrs-4.sciforum.net/>
- 2019 *Conference Chair*, International Geoscience and Remote Sensing Symposium (IGARSS), Session on Monitoring and Damage Assessment of Urban and Buildings, 28 July – 2 August 2019, Yokohama, JAPAN
- 2017 *Scientific Committee Member*, The International Conference on Water, Informatics, Sustainability, and Environment (IWISE), Science Target Inc., 3 – 5 July 2017, Ottawa, CANADA
- 2016 *Scientific Committee Member*, Ajman 4th International Environment Conference, Ajman, 2 – 3 March 2016, UNITED ARAB EMIRATES
- 2015 *Technical Committee Member*, Annual Conference Innovation Arabia 8 “Innovate, Collaborate, and Differentiate: Honoring the Past, Treasuring the Present, and Shaping

- the Future”, Hamdan Bin Mohamed Smart University, 16 – 17 February 2015, Dubai, UNITED ARAB EMIRATES
- 2014 *Scientific Committee Member*, The International Conference on Water, Informatics, Sustainability, and Environment (IWISE), Science Target Inc., 26 – 28 August 2014, Ottawa, CANADA
- 2014 *Technical Committee Member*, 5th Health and Environment Conference in the Middle East, Hamdan Bin Mohamed Smart University, 3 – 5 March 2014, Dubai, UNITED ARAB EMIRATES
- 2007 *Conference Co-chair*, International Geoscience and Remote Sensing Symposium (IGARSS), Session on Remote Sensing of Soil Properties, 23 – 27 July 2007, Barcelona, SPAIN
- 2003 *Conference Co-chair*, 3rd EARSeL Workshop on Imaging Spectroscopy, 13-16 May, Herrsching, GERMANY
- 2000 *Conference Chair*, The EOS/SPIE Symposium on Remote Sensing, Session on Remote Sensing for Earth Science Applications, 25-29 September, Barcelona, SPAIN
- 1999 *Conference Co-chair*, The EOS/SPIE Symposium on Remote Sensing, Session on Remote Sensing for Earth Science Applications, 20-24 September, Florence, ITALY

Outreach Activities:

- 2019 *Invited Panelist*, panel discussion on “The Future of Food & its Global Impact”, International Education Week, 19 November 2019, Boston University Global Programs, Boston, MA, USA
- 2016 *Invited Panelist*, panel discussion on “Starting from the Local: Relying on the Local Visions for Science and Development”, TechCon 2016, Higher Education Solutions Network, organized by USAID and MIT, 10-12 November, Cambridge, MA, USA
- 2007 *Invited Scientist* in the live in-studio program “Science Live at CCTV”, broadcasted on 29 April 2007 by Cambridge Community Channel, Cambridge, MA, USA
- 2007 *Panelist* in a roundtable discussion about “Minority Women in the Sciences” recorded on August 9, 2006, at the Cambridge Community Channel (CCTV), Cambridge, MA, USA. Documentary film produced by Karin Koch and screened at the First Annual Cambridge Science Festival on 28 April 2007, MA, USA
- 2006 *Visiting Scientist and Lecturer* at the Datatools Summer Workshop organized by TERC, an education research and development organization. DataTools is a professional development program for middle school teachers and students interested in science, math and technology. The lecture was on “Groundwater Exploration in Arid Lands” presented on July 17, 2006 at the Boston Museum of Science, Cambridge, MA, USA

Grant Proposal/Manuscript Peer Reviewer:

Research Proposals: National Science Foundation (NSF), Kuwait Foundation for the Advancement of Sciences (KFAS), American Association for the Advancement of Science (AAAS), US-Israel Binational Science Foundation (BSF), Netherland Organization for Scientific Research (NWO), German Federal Ministry of Education and Research (BMBF), U.S. Civilian Research & Development Foundation (CRDF), Helmholtz Association of German Research Centers (Helmholtz Alliances), Sultan Qaboos University

(Sultanate of Oman), Washington Fellowship for Young African Leaders (IREX/USA), Oak Ridge Associated Universities (ORAU), Fulbright Senior Postdoctoral Award Program, National Academy of Sciences (NAS) PEER Program, New Zealand's Ministry of Business, Innovation & Employment (MBIE), Czech-Israeli Cooperative Scientific Research Program (Israel Ministry of Science, Technology and Space), Chilean National Science and Technology Commission (CONICYT - Chile), Hong Kong Environment and Conservation Fund (ECF), Polish Fulbright Senior Award Program, U.S. Army Corps of Engineers Engineer Research and Development Center (ERDC)

External Thesis Evaluator: Autonomous University of Madrid, SPAIN; University Miguel Hernández of Elche, SPAIN; Kuwait University, KUWAIT; Suez Canal University, EGYPT; Birla Institute of Technology, INDIA; Anna University Chennai, INDIA; Indian Institute of Technology (Indian School of Mines) in Dhanbad, INDIA

External Promotion/Tenure Evaluator: Austrian Academy of Sciences, Idaho State University, University of Chinese Academy of Sciences

Manuscripts of Scientific Journals: International Journal of Remote Sensing, Remote Sensing of Environment, Photogrammetric Engineering & Remote Sensing, Water Research, Natural Hazards, Hydrological Processes, Hydrological Sciences Journal, Journal of Hydrology, Journal of Arid Environments, Earth Surface Processes & Landforms, Canadian Journal of Remote Sensing, Sensors, International Journal of Aerospace Engineering, Journal of African Earth Sciences, IEEE Transactions on Geoscience and Remote Sensing, Environmental Monitoring and Assessment, Land Degradation & Development, International Journal of Environment and Sustainability, Elsevier (book proposal review), The Journal of Urban Technology, Science of Total Environment, Kuwait Journal of Science, Remote Sensing (open access), Water (open access), Geosciences (open access), Hydrology (open access), Frontiers of Earth Science, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Arabian Journal of Geosciences, Water Air & Soil Pollution

TEACHING EXPERIENCE

Tufts University:

CEE-0293/UEP-0294 "Advanced Remote Sensing" (spring semester 2022 – Present) Dept. Civil & Environmental Engineering, Tufts University, Medford, USA

CEE-0189/UEP-0189 (formerly CEE-194A) "Introduction to Remote Sensing" (spring semester 2013 – 2021) Dept. Civil & Environmental Engineering, Tufts University, Medford, USA

CEE-0194H "Global Environmental Datasets" (co-taught with E. Naumova, fall semester 2013) Dept. Civil & Environmental Engineering, Tufts University, Medford, USA

UEP-0294/ENV-0196 "Introduction to Remote Sensing" (spring semester 2011 – 2012) Department of Urban & Environmental Policy & Planning, Tufts University, Medford, USA

Boston University:

BI/GE578 “Marine GIS” (fall semester 2018) Geography & Environment Department, Boston University, USA

GE365 “An Introduction to GIS” (spring semester 2011) Geography & Environment Department, Boston University, USA

AR505 “Remote Sensing and Archaeology” (spring semester 1999 – 2007) Archaeology Department, Boston University, Boston, USA

Harvard Extension School:

CSCI E-158 “Remote Sensing Data and Applications” (spring/fall semester 2019 – Present) Harvard University, Cambridge, USA

Tohoku University:

Fulbright lectures “Introduction to Multispectral Remote Sensing” (fall semester 2014) and “Digital Image Processing in Remote Sensing” (spring semester 2015) Graduate School of Environmental Studies, Tohoku University, Sendai, JAPAN

Autonomous University of Madrid:

12629 “Advanced Remote Sensing Techniques in Environmental Sciences” (spring semester 2008) Geology and Geochemistry Department, Autonomous University of Madrid, SPAIN

Guest Lectures/Training Courses:

World Class University (WCU) Program (September – October 2020), series of virtual guest lectures on “Remote Sensing Geology: Fundamentals, Techniques and Applications”, Diponegoro University, Semarang, Indonesia

ISMT E-150 “Introduction to GIS” (fall semester 2008 – 2023), guest lecture “Introduction to Remote Sensing”, Harvard Extension School, Cambridge, MA, USA

3.985J “Archaeological Science” (spring semester 2002 – 2007), guest lecture “Application of Remote Sensing Technologies in Geoarchaeology”, Center for Materials Research in Archaeology and Ethnology, Massachusetts Institute of Technology, Cambridge, USA

Training course “Introduction to Remote Sensing: Digital Image Processing” (12-16 January 2002), Kuwait Institute for Scientific Research, Safat, KUWAIT

Post-graduate courses “Methodologies for Environmental Impact Assessment of Industrial Activities” and “Geochemical Techniques and Applied Technologies for Environmental Assessment Studies” (one week each year during fall semester 2000 – 2003) Autonomous University of Madrid, SPAIN (with funding from the EU (Social European Fund))

POST-DOC/STUDENTS SUPERVISION/READING OF THESIS

Dorsa Mohammadi, PhD Thesis (in progress), Department of Earth and Environment, Boston University, “Flood Monitoring and Crop Damage Assessment Using Multi-Sensor Satellite Data in Response to the 2022 Pakistan (Punjab and Sindh Provinces) Flood” (Committee Member)

Dr. Nidhi Verma, (2024 - 2025) Postdoctoral Associate, Department of Earth and Environment/Institute for Global Sustainability, BU. Project: “Collaborative Research: CPS: NSF-JST: Enabling Human-Centered Digital Twins for Community Resilience”, funded by NSF, (Supervisor)

Youshuang Hu, M.S. Thesis (2024), Department of Urban and Environmental Policy and Planning, Tufts University, “Tsunami's Impact on Palu, Indonesia: A Geospatial Assessment of Affected Zones by 2018 Sulawesi Earthquake & Tsunami” (2nd Reader)

Sodeinde, O.R., PhD Thesis (2023), Department of Civil and Environmental Engineering, Tufts University, “One versus All: Identifiability with a multi-hazard and multiclass building damage imagery dataset and a deep learning neural network” (Committee Member)

Sydney Peacock (2023), Department of Earth and Environment/Center for Remote Sensing, BU, “Investigation of Coastal Erosion through Remote Sensing Analysis of Sediment Movement at the Intersection of Rivers and the Java Sea in Pekalongan, Indonesia”, partially funded by BU-UROP Student Research Award and NSF IRES Track I Indonesia award, (Faculty Mentor)

Wenyng (Grace) Wu, M.S. Thesis (2023), Department of Urban and Environmental Policy and Planning, Tufts University, “Urbanization of Metropolitan Houston, Texas (2015-2022): How is the city being developed after Hurricane Harvey?” (2nd Reader)

Breanne K. Langlois, PhD Thesis (2023), Friedman School of Nutrition Science and Policy, Tufts University, “Effects of flooding on food security over time in Indonesia: an examination of crop production, income and livelihoods, and diet quality using the Indonesian Family Life Survey” (Committee Member)

Adel Asadi, PhD Thesis (2023), Department of Civil and Environmental Engineering, Tufts University, “Earthquake Induced Hazards Modeling and Damage Mapping Using Computer Vision, Machine Learning, and Geospatial Data Analytics” (Committee Member)

Dr. Yusup Aimaiti, (2021 - 2022) Postdoctoral Associate, Department of Earth and Environment/Center for Remote Sensing, BU. Project: “Benchmark Data Development to Classify Damage for Natural Disaster Relief Efforts” funded by the National Geospatial Intelligence Agency, (Supervisor)

Morgan Glynn, (2022) Department of Earth and Environment/Center for Remote Sensing, BU, AGU poster “The relationship between ENSO, suspended particulate matter, chlorophyll-a, and sea surface temperature in Java Sea and their potential effects on human-driven stressors”, partially funded by BU-UROP Student Research Award and NSF IRES Track I Indonesia award, (Faculty Mentor)

Brandon McBath, ALM Thesis (2022), Harvard Extension School, “Sustainability Analysis of Nitrogen Nutrifcation of Wetlands within the Everglades Agricultural Area Due to Sugarcane Burn Residue” (Thesis Director)

Christiane Thompson, ALM Thesis (2022), Harvard Extension School, “Impacts of COVID-19 on Encroachment in African Sub-Saharan Protected Areas” (Thesis Director)

Mira Kelly-Fair, MA Thesis (2022), Department of Earth and Environment, Boston University, “Sustainable Urban Planning: Change Detection of Land Use and Land Cover in Semarang, Indonesia” (2nd Reader)

Matthew Fishman, Research Assistant (2021), Department of Earth and Environment/Center for Remote Sensing, BU, Directed Study EE491 Problems in Remote Sensing, “Development of a Remote Sensing Algorithm to Predict Chlorophyll-a Values in the Coastal Waters of Semarang, Indonesia” (Advisor)

Yaxiong Ma, PhD Thesis (2021), Department of Earth and Environment, Boston University, “Spatializing Coupled Human and Natural Systems (CHANS)” (Committee Member)

Vahid Rashidian, PhD Thesis (2021), Department of Civil and Environmental Engineering, Tufts University, “Improvements on Earthquake Rapid Response Framework Using Geospatial and Remotely Sensed Data” (Committee Member)

Liam Bhajan, MSc Thesis (2021), Department of Earth and Environmental Sciences, Boston College, “Investigating the hydrological impacts of land cover change in the Indian Head River and Jones River watersheds of southeast Massachusetts” (Committee Member)

Juliette Bateman, Research Assistant (2019), Department of Earth and Environment/Center for Remote Sensing, BU, Directed Study GE937 Problems in Remote Sensing, “Google Earth Engine Supervised Classification of Semarang, Central Java, Indonesia” (Advisor)

Graham Jeffries, PhD Thesis (2018), Friedman School of Nutrition Science and Policy, Tufts University, “Geoinformatics for Food Security: Remote sensing data assimilation for enhanced high-resolution crop status forecasting with crop simulation models” (Committee Member)

Madeline Wrable, M.S. Thesis (2017), Department of Civil and Environmental Engineering, Tufts University, “The use of remote sensing (RS) and geographic information systems (GIS) for the climate classification, snail habitat suitability, and prevalence prediction of Schistosomiasis in Ghana” (Committee Member)

Jing Zhu, PhD Thesis (2016), Department of Civil and Environmental Engineering, Tufts University, “Improvements on regional liquefaction characterization” (Committee Member)

Alexander Liss, PhD Thesis (2015), Department of Civil and Environmental Engineering, Tufts University, “Extreme Weather Events: Adverse Health Impact and Economic Consequences for US Elderly” (Committee Member)

Liz Erdman, M.S. Thesis (2014), Department of Civil and Environmental Engineering, Tufts University, “Does the presence of vegetation affect asthma hospitalizations?” (Committee Member)

Benjamin Burkholder, Research Assistant (2012 – 2013), Department of Geography and Environment/Center for Remote Sensing, BU, Directed Study GE492, “Monitoring vegetation health and growth in West Aswan, Egypt” (Advisor)

Ahmed Gaber, PhD Thesis (2012), Graduate School of Environmental Studies, Tohoku University, Sendai, Japan, “High-Resolution Subsurface Image Reconstruction Using Near-Range Synthetic Aperture Radar” (External Advisor)

Ignacio Meléndez Pastor, PhD Thesis (2009), Department of Agro-Chemistry and Environment, Universidad Miguel Hernández de Elche, Alicante, Spain, “Multi-temporal remote sensing analysis of coastal wetlands in the Province of Alicante, Spain: modeling land use changes and carbon sequestration in soils and vegetation” (External Advisor)

Ahmed Gaber, Visiting Scholar at BU Center for Remote Sensing (Jun. – Nov. 2007), “Textural and spectral characterization of alluvial deposits in Wadi Feiran, South Sinai, Egypt”, Fellowship from the Egyptian Government for a 6-month stay in Boston University (Supervisor)

Ignacio Meléndez Pastor, Visiting Scholar at BU Center for Remote Sensing (Oct. – Dec. 2007), “Multi-temporal remote sensing analysis of coastal wetlands in Alicante Province, Spain”, Fellowship from the Spanish Government for a 2-month stay in Boston University (Supervisor)

Manuel López Vicente, Visiting Scholar at BU Center for Remote Sensing (Sept.-Dec. 2006), “Modeling soil loss in agro-ecosystem environments; a case study in the external ranges of the Pyrenees, Spain” Fellowship from the Spanish Government for a 3-month stay in Boston University (Supervisor)

Thomas Schmid, PhD thesis (2004), Department of Agro-Chemistry, Geology and Geochemistry, Autonomous University of Madrid, Spain, “Integrated remote sensing approach to detect changes in saline wetlands in semiarid environments of Central Spain” (External Advisor)

Muhammad R. Islam, Research Assistant (2004), BU Center for Remote Sensing, Internship EE902 “Analysis of precipitation data for the northern UAE” as part of the project “Use of space images for ground water exploration in the northern United Arab Emirates” (Supervisor)

Erica Ashkenazi, Research Assistant (2003), BU Center for Remote Sensing, Directed Study EE903 “Rainfall and water table elevation data from the U.A.E. analyzed using GIS” (Supervisor)

José Manuel Sisón Andújar, Research Assistant (Sept.-Dec. 2002), BU Center for Remote Sensing, “Generation of a seamless DEM mosaic for the northern U.A.E.”, Internship in the project “Use of space images for ground water exploration in the northern United Arab Emirates”, Fellowship from the Spanish Government for a 3-month stay in Boston University (Supervisor)

Jennifer Inzana, Graduate Student (2000), Department of Geography/Center for Remote Sensing, BU, Directed Study GG937 “Vegetation change detection near Chinchón, Spain” (Supervisor)

Susan Oakley, Research Assistant (2000) “Topography, Geology and Wadis of Oman”, book chapter produced as part of the project: “Wadi Atlas of Oman” (Supervisor)

Ghazi Al-Rawas, Graduate Student (2000), Department of Geography/Center for Remote Sensing, BU, Directed Study GG934 “Using GIS for flash flood hazard mapping in Oman” as part of the project “Wadi Atlas of Oman” (Supervisor)

Daniel Blanco, Research Assistant (1998), Department of Geography/Center for Remote Sensing, BU, “Methods of GIS assessment of groundwater recharge”, case study example for the project: “Utilizing satellite images for groundwater exploration in the Sultanate of Oman” (Supervisor)

Huda Al-Dabi, Research Assistant (1996), Department of Geography/Center for Remote Sensing, BU, “Evolution of sand-dune patterns in space and time in northern Kuwait using Landsat TM images”,

journal paper produced as part of the project “Environmental atlas of Kuwait from satellite images” (Supervisor)

Daniel Blanco, M.S. Thesis (1995), Department of Agro-Chemistry, Geology and Geochemistry, Autonomous University of Madrid, Spain, “Integration of photogeological features as obtained from a Landsat MSS image in ARC/INFO GIS for characterizing the hydrology of the basement complex in southern Sinai Peninsula, Egypt” (External Advisor)

INVITED SPEAKER

- 2022 *Invited Keynote Speaker*, “Application of Geospatial and Remote Sensing Technology in Environmental Study”, 14 October 2022, Biotechnology Study Program, Faculty of Science and Mathematics, Diponegoro University, Semarang, INDONESIA
- 2021 *Invited Keynote Speaker*, “Observing Water Resources from Space: from Flood Monitoring to Groundwater Assessment”, the 6th International Conference on Energy, Environment, Epidemiology, and Information System (ICENIS), 4-5 August 2021, University of Diponegoro, Semarang, INDONESIA
- 2020 *Invited Keynote Speaker*, “Remote Sensing of Coastal Hazards: Flooding and Land Subsidence in Central Java, Indonesia”, The 6th International Conference on Tropical and Coastal Region Eco-Development (ICTCRED), 27-28 October 2020, University of Diponegoro, Semarang, INDONESIA
- 2019 *Invited Keynote Speaker*, “Intergrading Earth & Disaster Science to Enable Sustainable Adaptation & Mitigation”, Semarang International Conference Series (SICS) 2019 – Information System, Information Technology, and Agricultural Technology Conference (SCIS), 10 July 2019, Semarang, INDONESIA
- 2019 *Invited Seminar Speaker*, “Mapping Fluvial and Aeolian Features in Arid Lands: Implications for Groundwater Potential in Egypt”, Geology and Environmental Science, University of Pittsburgh, 28 March 2019, Pittsburgh, USA
- 2018 *Invited Keynote Speaker*, “Satellite Remote Sensing for Water Resources Monitoring & Mapping”, University of Semarang, 4th December 2018, Semarang, INDONESIA
- 2017 *Invited Keynote Speaker*, “Applications of Earth Observation Satellite in Land and Water Resources Studies” Guest Lecture, Universitas Semarang, 11 December 2017, Semarang, INDONESIA
- 2017 *Invited Keynote Speaker*, “Remote Sensing Investigation of Agricultural Activity and Crop Water Use in the Upper Nile Region of Egypt”, 3rd International Conference of Indonesian Society for Remote Sensing (ICOIRS), 31 October – 1 November 2017, Semarang, INDONESIA
- 2017 *Invited Speaker*, “Water and Food Security in Arid Lands: A Remote Sensing Based Approach”, Friedman School of Nutrition Science and Policy, Tufts University, 3 April 2017, Boston, USA

- 2016 *Invited Workshop Speaker*, “Satellite Remote Sensing for Health and Environmental Monitoring”, MISTI MIT-Mexico Workshop, Universidad Veracruzana, 31st August – 3rd September 2016, Xalapa, Veracruz, MEXICO
- 2015 *Invited Session Speaker*, “The Use of Remote Sensing Monitoring to Understand Optimal Conditions for Mosquito Abundance in Pantanal, Brazil”, 25th Annual Conference of The International Environmetrics Society (TIES), 22-25 November 2015, Al-Ain, U.A.E.
- 2015 *Invited Seminar Speaker*, “Sensing New Water Resources in Egypt from Space: A Pilot Study in Aswan”, Civil Engineering Department, University of Tokyo, 19 May 2015, Tokyo, JAPAN
- 2015 *Invited Seminar Speaker*, “Water Resources Sustainability in Arid Lands: A Remote Sensing Based Approach”, Arid Land Research Center, Tottori University, 18 May 2015, Tottori, JAPAN
- 2014 *Invited Keynote Speaker*, “Spectral and thermal mapping of desert surface sediments for agricultural development”, the 12th International Symposium on Integrated Field Science and the 7th Symposium on Innovative Research Center for Agricultural Science, Graduate School of Agriculture, Tohoku University, 29-30 September 2014, Sendai, JAPAN
- 2014 *Invited Speaker*, “Advanced remote sensing technology for sustainable land development in arid lands”, Ajman 3rd International Environment Conference on “Eco-City for Sustainable Development”, Ajman University of Sciences and Technology, 7-8 April 2014, Ajman, U.A.E.
- 2013 *Invited Guest Faculty Member* of the BIARI 2013 Institute, “Connections and Flows: Water, Energy and Digital Information in the Global South”, Brown University, June 8 - 22, Providence, Rhode Island, USA
- 2013 *Invited Speaker*, TELI workshop “One Health”, Tufts Institute of the Environment, Tufts University, May 20-24, Medford, MA, USA
- 2012 *Invited Speaker*, “Development of new water resources in Egypt with Earth Observation data: opportunities and challenges”, Ajman 2nd International Environment Conference on “An innovative approach to Sustainability”, Ajman University of Sciences and Technology, 4-5 June 2012, Ajman, U.A.E.
- 2012 *Invited Speaker*, “Sensing New Water Resources in Egypt from Space”, CGA spring conference on “Re-Mapping Africa in GIS: From Humanity to Health”, Harvard University, March 30, 2012, Cambridge, MA, USA
- 2012 *Invited Speaker*, “Selected Case Studies in Remote Sensing: Malaria Risk Assessment in Ethiopia and Desert Land Reclamation in Egypt”, Environmental and Water Resources Engineering and Environmental Health Seminar, Tufts University, March 6, Medford, MA, USA
- 2012 *Invited Speaker*, “The Role of Earth Observation Data in Identifying Alternative Water Resources for Sustainable Development in Egypt”, Annual Student Symposium at The Yale Climate and Energy Congress, Yale University, February 17, New Haven, CT, USA

- 2011 *Invited Speaker*, “Natural Resources Assessment for a New Development Corridor along the Nile River in Egypt: A Remote Sensing Approach”, seminar talk at the Research Center for Energy, Environment and Technology (CIEMAT), 27 June, 2011, Madrid, SPAIN
- 2010 *Invited Lecturer*, “Studying Malaria and Land Use Changes in Ethiopia from Space”, guest lecturer in the EH811 course (fall semester): “Geographic Information Systems (GIS) in Public Health”, School of Public Health, Boston University, MA, USA
- 2009 *Invited Speaker*, “Agro-ecology of malaria: images of a changing landscape”, Walter Rodney seminar, African Studies Center, Boston University, December 7, 2009, Boston, MA, USA
- 2008 *Invited Speaker*, “Remote Sensing of Arid and Semi-arid Lands: Land Degradation and Water Resources”, Natural & Applied Sciences Seminar, Bentley College, February 28, 2008, Waltham, MA, USA
- 2007 *Invited Speaker*, “Multisensor Remote Sensing of Semiarid Wetlands: Assessment, Monitoring and Modeling”, International Workshop on “Women, Science and Environment”, Universidad Miguel Hernandez and Grupo Marjal, 20 July 2007, Guardamar del Segura, Alicante, SPAIN
- 2007 *Invited Speaker*, “Multisensor Remote Sensing of Semiarid Wetlands: Assessment, Monitoring and Modeling”, EEOS science seminar, University of Massachusetts Boston, February 21, 2007, Boston, MA, USA
- 2007 *Invited Speaker*, “Remote Sensing Applications in Archaeology”, Remote Sensing Technology and Applications Workshop, Harvard University, February 16, 2007, Cambridge, MA, USA
- 2004 *Invited Speaker*, “Changes in wetland composition as detected by remote sensing: a case study in La Mancha, Spain”, International Workshop on “Environment, Landscape and Biodiversity”, Universidad Miguel Hernández, 11-12 November 2004, Elche, SPAIN
- 2004 *Invited Lecturer*, “Applications of Numerical Modeling, Remote Sensing and GIS Techniques for Investigation of Environment and Water Resources”, Ajman University of Science and Technology Network, Training Workshop, 12-14 June 2004, Dubai, U.A.E.
- 2003 *Invited Speaker*, “Monitoring wetland areas under semiarid conditions applying hyperspectral and multispectral data”, Seminar at CREST, 21 March 2003, National Oceanic and Atmospheric Administration Cooperative Remote Sensing Science and Technology Center, City University of New York, NY, USA
- 2002 *Invited Speaker*, “Application of Remote Sensing and GIS for Groundwater Exploration in Arid Lands”, Special Lecture Series, Kuwait Institute for Scientific Research, 19 January, Safat, KUWAIT
- 2001 *Invited Speaker*, “Remote Sensing Methodologies for Soil Degradation Studies”. Symposium on “Soil Quality in Mediterranean Environments”, Summer Courses, University of Burgos, 2-6 July, Burgos, SPAIN

2000 *Invited Speaker*, “Remote Sensing and Land Degradation”. Symposium on “Environmental Problems in Mediterranean Soils”, International University Menéndez Pelayo, 6-10 November, Alicante, SPAIN

CONSULTANCY

2008-09 *Consultant*, “UNAMID groundwater assessment project in Darfur, Sudan”, 6-month consultancy contract, Geospatial Information Center UNLB, United Nations, Brindisi, ITALY

2001 *Consultant*, “Geo-Development Project on Capacity Building of the Egyptian Geological Survey and Mining Authority (EGSMA) and the National Authority of Remote Sensing and Space Sciences (NARSS) for the Sustainable Development of South Valley and Sinai, Egypt”, 11-15 March, UNESCO Cairo Office, Cairo, EGYPT

1999 *Consultant*, “Geo-Development Project for the Sustainable Development of South Valley and Sinai, Egypt”, 25-30 September, UNESCO Cairo Office, Cairo, EGYPT

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PEER REVIEWED JOURNAL PAPERS, BOOK CHAPTERS AND MONOGRAPHS

1. Yang, Q., Shen, X., Zhang, Q., Helfrich, S., Kelindorfer, J.M., Straka, W., Hao, W., Steiner, N.D., Ruff, T., Moore Torres, J.C. and Koch, M. (in review) Near-real-time Flood Mapping System Using Multi-source SAR images: Adaptive Initialization Enhances Detection in Snow and Arid Terrains, *ESS Open Archive*.
2. Chandra, N., Vaidya, H., Koch, M. and Meena, S.R. (in review) Optimized YOLOv8 with Multi-Level Attention for Satellite Image-Based Landslide Detection, *Advances in Space Research*.
3. Hu, Y., Barberopoulou, A. and Koch, M. (2025) Tracing the 2018 Sulawesi Earthquake and Tsunami's Impact on Palu, Indonesia: A Remote Sensing Analysis, *Journal of Marine Science and Engineering*, **13**, 178. (<https://doi.org/10.3390/jmse13010178>)
4. Langlois, B., Magnuson, A., Griffin, T., Coughlan de Perez, E., Naumova, E. and Koch, M. (2024) A framework and pilot study for assessing usability of flood data portals for interdisciplinary research, *PLOS Climate*, **3**(11), e0000511. (<https://doi.org/10.1371/journal.pclm.0000511>)
5. Langlois, B., Ismanto, A., Beaulac, L., Berry, K., Koch, M., Griffin, T., Coughlan de Perez, E., and Naumova, E. (2024) Recurrent flooding and household food access in Central Java, Indonesia, *International Journal of Environmental Research and Public Health*, **21**(10), 1370. (<https://doi.org/10.3390/ijerph21101370>)
6. Lin, W. and Koch, M. (2024) Examining the Effects of Fracking on Groundwater Using the United States Fracking Well Data, *Journal of Student Research*, **13**(2). (<https://doi.org/10.47611/jsrhs.v13i2.6805>)
7. Sodeinde, O., Koch, M., Moaveni, B. and Baise, L. (2024) One versus All: Identifiability with a multi-hazard and multiclass building damage imagery dataset and a deep learning neural network, *Natural Hazards*, **120**, 8337–8366. (<https://doi.org/10.1007/s11069-024-06500-9>)
8. Ma, Y., Gopal, S., Koch, M. and Kaufman, L. (2024) Mapping the Dynamics of Aquatic Vegetation in Lake Kyoga and its Linkages to Satellite Lakes, *Science of Remote Sensing*, **10**, 100156. (<https://doi.org/10.1016/j.srs.2024.100156>)
9. Asadi, A., Baise, L.G., Chatterjee, S., Koch, M. and Moaveni, B. (2024) Regional Landslide Mapping Model Developed by a Deep Transfer Learning Framework Using Post-Event Optical Imagery, *Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards*, **18**(1), 186–210. (<https://doi.org/10.1080/17499518.2024.2316265>)
10. Asadi, A., Baise, L.G., Koch, M., Moaveni, B., Chatterjee, S. and Yusupujiang, A. (2024) Pixel-based Classification Method for Earthquake-Induced Landslide Mapping Using Imagery, Geospatial Data and Temporal Change Information, *Natural Hazards*, **120**, 5163–5200. (<https://doi.org/10.1007/s11069-023-06399-8>)
11. Asadi, A., Baise, L.G., Sanon, C., Koch, M., Chatterjee, S. and Moaveni, B. (2023) Semi-Supervised Learning Method for the Augmentation of an Incomplete Image-based Inventory of Earthquake-Induced Soil Liquefaction Surface Effects, *Remote Sensing*, **15**(19), 4883. (<https://doi.org/10.3390/rs15194883>)

12. Ma, Y., Gopal, S., Ma, X., Gallagher, K., Koch, M. and Kaufman, L. (2023) The Deforestation and Biodiversity Risks of Power Plant Projects in Southeast Asia: A Big Data Spatial Analytical Framework, *Sustainability*, **15**(19), 14461. (<https://doi.org/10.3390/su151914461>)
13. Langlois, B., Beaulac, L., Berry, K., Anyanwu, O., Simpson, R., Ismanto, A., Koch, M., Coughlan de Perez, E., Griffin, T., and Naumova, E. (2023) Household flood severity and migration extent in Central Java: analysis of the Indonesian Family Life Survey, *International Journal of Environmental Research and Public Health*, **20**(9), 5706. (<https://doi.org/10.3390/ijerph20095706>)
14. Langlois, B., Marsh, E., Stotland, T., Simpson, R., Berry, K., Carroll, D.A., Ismanto, A., Koch, M., and Naumova, E. (2023) Usability of existing global and national data for flood related vulnerability assessment in Indonesia, *Science of the Total Environment*, **873**, 162315. (<https://dx.doi.org/10.1016/j.scitotenv.2023.162315>)
15. Joshi, A., Ribeiro Tosato, D., and Koch, M. (2023). The Effects of Climate Change on Hawaii's Coral Reef Ecosystem Over the Past 20 Years, *Journal of Student Research*, **12**(4). (<https://doi.org/10.47611/jsrhs.v12i4.5896>)
16. Ridarto, A.K.Y., Zainuri, M., Helmi, M., Kunarso, K., Baskoro, B., Maslukah, L., Endrawati, H., Handoyo, G. and Koch, M. (2023) Assessment of Total Suspended Solid Concentration Dynamics Based on Geospatial Models as an Impact of Anthropogenic in Pekalongan Waters, Indonesia, *Buletin Oseanografi Marina*, **12**(1), 142-152. (<https://doi.org/10.14710/buloma.v12i1.51454>)
17. Ibrahim, A., Gmail, K.S, Bedair, S., Saada, S.A., Koch, M., and Nosair, A. (2023) An Integrated Approach to Better Understanding the Hydro-Structural Aquifer Potentialities in Hyper-Arid Regions Using Satellite and Land-Based Geophysics, *Surveys in Geophysics*, **44**, 783-819. (<https://doi.org/10.1007/s10712-022-09755-8>)
18. Aimaiti, Y., Sanon, C., Koch, M., Baise, L.G. and Moaveni, B. (2022) War related damage assessment in Kyiv, Ukraine, using Sentinel-1 radar and Sentinel-2 optical images, *Remote Sensing*, **14**(24), 6239 (<https://doi.org/10.3390/rs14246239>).
19. Kelly-Fair, M., Gopal, S., Koch, M., Pancasakti Kusumaningrum, H., Helmi, M., Khairunnisa, D. and Kaufman, L. (2022) Analysis of Land Use and Land Cover Changes through the Lens of SDGs in Semarang, Indonesia. *Sustainability*, **14**(13), 7592. (DOI: 10.3390/su14137592)
20. Langlois, B., Anyanwu, O., Beaulac, L., Berry, K., Magnuson, A., Ismanto, A., Griffin, T., Coughlan de Perez, E., Koch, M., and Naumova, E. (2022) Usability of the Indonesian Family Life Survey (IFLS) to Examine Recurrent Flooding and Household Food Access in Central Java, Indonesia, *Current Developments in Nutrition*, **6**(S1), 76 (<https://doi.org/10.1093/cdn/nzac050.006>).
21. Mather, P.M., and Koch, M. (2022) *Computer Processing of Remotely-Sensed Images: An Introduction*, Fifth Edition. Hoboken, NJ, USA: Wiley-Blackwell, 384 pp.
22. Zainuri, M., Helmi, M., Novita, M.G.A., Pancasakti, H., and Koch, M. (2022) Improved Performance of Geospatial Model to Access the Tidal Flood Impact on Land Use by Evaluating Sea Level Rise and Land Subsidence Parameters, *Journal of Ecological Engineering*, **23**(2), 1-11 (<https://doi.org/10.12911/22998993/144785>).

23. Youssef, Y.M., Gemail, K., Sugita, M., AlBarqawy, M., Teama, M.A., Koch, M., and Saada, S.A. (2021) Natural and Anthropogenic Coastal Environmental Hazards: An Integrated Remote Sensing, GIS, and Geophysical-based Approach, *Surveys in Geophysics*, **42**, 1109 – 1141 (<https://doi.org/10.1007/s10712-021-09660-6>).
24. Rashidian, V., Baise, L.G., Koch, M. and Moaveni, B. (2021) Detecting Demolished Buildings after a Natural Hazard Using High Resolution RGB Satellite Imagery and Modified U-Net Convolutional Neural Networks, *Remote Sensing*, **13**(11), 2176. (DOI: 10.3390/rs13112176)
25. Darwish, N., Kaiser, M., Koch, M., and Gaber, A. (2021) Assessing the Accuracy of ALOS/PALSAR-2 and Sentinel-1 Radar Images in Estimating the Land Subsidence of Coastal Areas: A Case Study in Alexandria City, Egypt, Special Issue "ALOS-2/PALSAR-2 Calibration, Validation, Science and Applications", *Remote Sensing*, **13**(9), 1838. (DOI: 10.3390/rs13091838)
26. Gaber, A., Mohamed, A.K., ElGalladi, A., Abdelkareem, M., Beshr, A.M., and Koch, M. (2020) Mapping the Groundwater Potentiality of West Qena Area, Egypt, Using Integrated Remote Sensing and Hydro-Geophysical Techniques, *Remote Sensing*, **12**(10), 1559 (DOI: 10.3390/rs12101559)
27. Pitts, J.D., Gopal, S., Ma, Y., Koch, M., Boumans, R., and Kaufman, L. (2020) Leveraging Big Data and Analytics to Improve FEWS Sustainability. *Frontiers in Big Data*, **3** (Section Data Mining and Management), Article 13, 1-16 (DOI: 10.3389/fdata.2020.00013).
28. Wirasatriya, A., Kawamura, H., Helmi, M., Sugianto, D.N., Shimada, T., Hosoda, K., Handoyo, G., Putra, Y.D.G., and Koch, M. (2020) Thermal Structure of Hot Events and Their Possible Role in Maintaining the Warm Isothermal Layer in the Western Pacific Warm Pool. *Ocean Dynamics*, **70**. (Published online: 15 April 2020; DOI: 10.1007/s10236-020-01362-8)
29. Koch, M. (2020) Integrated earth & disaster science to enable sustainable adaptation & mitigation. In: *Engineering. Information and Agricultural Technology in the Global Digital Revolution*, A. Hendrawan & R. Wijayanti Dual Arifin (eds), Taylor & Francis Group, London, pp. 8-10.
30. Rashidian, V., Baise, L.G., and Koch, M. (2020) Using high resolution optical imagery to detect earthquake-induced liquefaction: the 2011 Christchurch earthquake, *Remote Sensing*, **12**(3), 377 (DOI: 10.3390/rs12030377)
31. Jeffries, G.R., Griffin, T.S., Fleisher, D.H., Naumova, E.N., Koch, M., and Wardlow, B.D. (2020) Mapping sub-field maize yields in Nebraska, USA by combining remote sensing imagery, crop simulation models, and machine learning. *Precision Agriculture*, **21**(3), 678-694. (DOI: 10.1007/s11119-019-09689-z)
32. Menier, D., Mathew, M., Cherfils, J.-B., Sedrati, M., Koch, M., Ramkumar, M., Guillocheau, F., Goubert, E., Gensac, E., and Le Gall, R. (2019) Holocene sediment mobilization in the inner continental shelf of Bay of Biscay: Implications for the regional sediment budget offshore to onshore. *Journal of Coastal Research*, **88**(sp1), 110-121 (DOI: 10.2112/SI88-009.1)
33. Wrable, M., Kulinkina, A.V., Liss, A., Koch, M., Cruz, M.S., Biritwum, N-K., Oforu, A., Gute, D.M., Kosinski, K., and Naumova, E.N. (2019) The use of remotely sensed environmental parameters for spatial and temporal schistosomiasis prediction across climate zones in Ghana.

Environmental Monitoring and Assessment, **191**(2), 301 (DOI: 10.1007/s10661-019-7411-6)

34. Marco-Dos Santos, G., Meléndez-Pastor, I., Navarro-Pedreño, J., and Koch, M. (2019) Assessing water availability in Mediterranean regions affected by water conflicts through MODIS data time series analysis. *Remote Sensing*, **11**(11), 1355 (DOI: 10.3390/rs11111355)
35. Wirasatriya, A., Sugianto, D.N., Helmi, Setiawan, R.Y. and Koch, M. (2019) Distinct Characteristics of SST Variabilities in the Sulawesi Sea and Northern Part of the Maluku Sea During Southeast Monsoon. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, **12**(6), 1763-1770. (DOI: 10.1109/JSTARS.2019.2913739)
36. Wirasatriya, A., Kawamura, H., Koch, M., and Helmi, M. (2019) Satellite-borne detection of high diurnal amplitude of sea surface temperature in the seas west of the Tsugaru Strait, Japan, during Yamase wind season. *Journal of Oceanography*, **75**(1), 23-36. (DOI: 10.1007/s10872-018-0481-1)
37. Gaber, A., Abdelkareem, M., Sayed, I., Koch, M., and El-Baz, F. (2018) Using InSAR coherence for investigating the interplay of fluvial and aeolian features in arid lands: Implications for groundwater potential in Egypt. *Remote Sensing*, **10**(6), 832-849. (DOI: 10.3390/rs10060832)
38. Kulinkina, A.V., Walz, Y., Koch, M., Biritwum, N.K., Utzinger, J., and Naumova, E. (2018) Improving spatial prediction of *Schistosoma haematobium* prevalence in southern Ghana through new remote sensors and local water access profiles. *PLOS Neglected Tropical Diseases*, **12**(6): e0006517. First Online: June 4, 2018 (DOI: 10.1371/journal.pntd.0006517)
39. Bai, Y., Gao, C., Singh, S., Koch, M., Adriano, B., Mas, E., and Koshimura, S. (2018) A framework of rapid regional tsunami damage recognition from post-event TerraSAR-X imagery using deep neural networks. *IEEE Geoscience and Remote Sensing Letters*, **15**(1), 43-47. (DOI: 10.1109/LGRS.2017.2772349)
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CONFERENCE PROCEEDINGS AND ABSTRACTS

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