Dr. William M. Maslanka, MMet, PhD.

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SUMMARY OF EXPERIENCE

William is an experienced environmental scientist currently working as a Research Associate at the Department of Geography at King's College London (KCL), and with the National Centre for Earth Observation (NCEO). He has five years of space-based Earth Observation techniques for active fire, soil moisture, and Natural Flood Management (NFM) research, two year' experience as an operational flood modeller and forecaster, and four years' experience in ground-based remote sensing of the natural snowpack.

William has over nine years of experience in environmental science and remote sensing research. As part of this, he has worked as part of interdisciplinary, international, multistakeholder teams. His area of expertise is in satellite-based remote sensing; having used a number of different constellations in order to further his research. This has included using the ESA Sentinel Constellation to develop a sub-kilometric soil moisture product for the Thames Valley, UK, for use with NFM and Crop Management studies, as well as the satellites housing the MODIS, VIIRS, and SEVERI instruments for greenhouse gas emission estimation from both high latitude and European fires. He has designed, implemented, and taken part in field campaigns both internationally (Finnish Arctic, Arctic Snow Microstructure Experiment), and locally (Thames Valley, LANDWISE Radar Field Testing). Additionally, he has taken part in laboratory-based research and development of bespoke ground- and UAV-based observational equipment. Additionally, he has produced multiple different written outputs, ranging from peer-reviewed papers to blog posts.

William also has a strong background in developing and delivering training, teaching, and outreach opportunities to a range of audiences. In addition to being an teaching assistant for undergraduate meteorology modules on synoptic weather forecasting and monitoring, and laboratory-based environmental observation techniques, he also aided in the development and facilitation of meteorological and flood forecasting training to Environment Agency Duty Officers; as well as aiding in environmental science outreach events aimed at postgraduates, policymakers, landowners, schoolchildren, and members of the public.

EMPLOYMENT AND KEY ASSOCIATED TASKS

2023 – Present: **Research Associate in Earth Observation Science,** *Dept. of Geography, King's College London*

- Development of the adapted Fire Radiative Energy Emission (FREM) methodology for high latitude fires.
- Expansion of FREM methodology into Southern Europe.
- Presented at EGU 2024

2019 – 2022: **Postdoctoral Research Assistant in Remote Sensing**, *Dept. of Geography, University of Reading*

- Remote Sensing Expert as part of the LANDWISE (*Land Management in Lowland Catchments for Integrated Flood Risk Reduction*) project.
- Development of relative surface soil moisture dataset for the Thames Valley, UK, using Sentinel 1.
- Development of novel backscatter normalisation technique for Sentinel-1.
- RADAR simulations of 3D physical structures derived from TLS observations.
- Led and took part in interdisciplinary stakeholder meetings, with audiences including scientists, policymakers, and landowners.
- Presented at EGU 2022, Groundswell 2022, Internal and External LANDWISE conferences.

2017 – 2019: **Modelling and Forecasting Team Member**, *Environment Agency, UK.*

- Development and reviewing of non-real time flood models for local government housing development.
- Regularly worked with consultants, project managers, and engineers to detail potential flood risk present in their plans.
- Was an active member of the 24/7 flood forecasting and freshwater abstraction management team; providing timely and accurate forecasts of river levels and potential flood risks for the River Thames and North London regions.
- Led and aided the development and facilitation of Monitoring and Forecasting Duty Officer (MFDO) and River Control Duty Officer (RCDO) training and refresher courses, as well as being an RCDO shadow mentor.

2017 – 2017: **Programme Administrator**, *School of Bio. Sciences, University of Reading*

- Clerical and administrative services for academic and student services.
- Development of mark calculator templates, to standardise mark calculation for different taught modules.

2017 – 2017: **Research Fellow (3 Month)**, *CORES Science and Engineering Ltd.*

- Continuation of PhD research, and the production of peer-reviewed literature.

2015 – 2017: **PhD Teaching Assistant**, *Dept. of Meteorology, University of Reading*

- Teaching Assistant for two meteorology undergraduate modules: *Introduction to Meteorology*, and *Skills for Environmental Sciences*.

EDUCATION

2013 – 2017 **PhD Extinction of Microwave Radiation in Snow,** Dept. Meteorology., University of Reading.

2009 - 2013 **MMet Meteorology with a year in Oklahoma**, Dept. Meteorology., University of Reading.

AWARDS AND ACHIEVEMENTS

2018 **Local Recognition Award**, Environment Agency

2015 **Research Image Competition: People's Choice Award**, University of Reading Doctoral Research Conference

MEMBERSHIPS

2022 - European Geophysical Union, **Regular Membership**

EXEMPLAR RESEARCH PUBLICATIONS

W. Maslanka, K. Morrison, K. White, A. Verhoef, J. Clark, "Retrieval of Sub-Kilometric Relative Surface Soil Moisture with Sentinel-1 Utilizing Different Backscatter Normalisation Factors", *IEEE Trans. Geoscience Remote Sens.*, vol 60, 2022: doi 10.1109/TGRS.2022.3175256

M. Sandells, H. Löwe, G. Picard, M. Durmont, R. Essery, N. Floury, A. Kontu, J. Lemmetyinen, **W. Maslanka**, S. Morin, A. Wiesmann, C. Mätzler, "X-Ray Tomography-Based Microstructure Represenation in the Snow Microwave Radiative Transfer Model", *IEEE Trans. Geosci. Remote Sens.*, vol 60, 2022, doi: 10.1109/TGRS.2022.3086412

W. Maslanka, M. Sandells, R. Gurney, J. Lemmetyinen, L. Leppänen, A. Kontu, M. Matzl, N. Rutter, T. Watts, R. Kelly, "Derivation and Evaluation of a New Extinction Coefficient for use with the n-HUT Snow Emission Model", *IEEE Trans. Geosci. Remote Sens.,* vol 57, 2019, doi: 10.1109-TGRS.2019.2913208

W. Maslanka, L. Leppänen, A. Kontu, M. Sandells, J. Lemmetyinen, M., Schneebeli, M., Proksch, M. Matzl, H.-R., Hannula, R. Gurney, "Arctic Snow Microstructure Experiment for the development of snow emission modelling", *Geosci. Instrum. Method. Data. Syst.,* vol 5, 2016, doi: 10.5194/gi-5-85-2016