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| **Dr Maria-Theresia Walach** | | | | **m.walach@lancaster.ac.uk** |
| **Academic Posts & Education:** | | | | |
| **Since 03/2017:** | | | **Senior Research Associate**, Lancaster University, UK;  Line Manager: Dr. Adrian Grocott | |
| Undertaking of original research on the NERC-funded projects “SD-WACCM: Predicting the Upper Atmospheric Response to Extremes of Space Weather Forcing” (2020-2023) and “Time Variability of the ionospheric electric field: solar wind driving and atmospheric feedback” (2017-2020):  * Processing and archiving of **22 years of raw data** (> 30 TB) from the Super Dual Auroral Radar Network (SuperDARN) * Co-author of **23 papers** and **10** **open-source software packages** * **Winner** of the British Science Assiciation **Early Career Lectureship Prize 2022** * **PGR teaching:** Co-supervisor of two **Masters students** in Statistics (with Dr A. Gibberd); Co-supervisor of **PhD student** in Physics (with Dr A. Grocott) * **Seminar coordinator** for the Space and Planetary Physics Group until 2018 (organisation of external speakers and management of **~£1k budget**) * Convener of the **Autumn MIST meeting** (Nov. 2020, 2021, 2022), Co-organiser of the **RAS Discussion meetings** on “Global Monitoring of Geospace”, “The Global Response of the Terrestrial Magnetosphere during Storms and Substorms” (Feb. 2019) * **LOC member** for National Astronomy Meeting 2019 and STFC Advanced Summer School in Space Plasma Physics (Sept. 2019) * **Leader** of widening-participation project with **10 A-Level students from rural Lancashire** * Participant in national outreach competition **I’m a Scientist Get me out of here** and active participant in Physics department **outreach programme** | | | | |
| **2013–2017:** | | **PhD** studying **Solar wind-magnetosphere driving at Earth**, University of Leicester, UK; Supervisors: Prof. S. E. Milan & Dr. T. K. Yeoman | | |
| * **Analysis** using **spacecraft data**, **magnetometers**, **radars** and **numerical modelling** * **3 first author papers**: Using physics-based model to test understanding of ionospheric flows with spacecraft and radar data [Walach et al., 2017a]; Comparative studies of magnetospheric responses [Walach and Milan 2015, Walach et al., 2017b] * Active participation of group’s **outreach programme** * **Undergraduate teaching:** Laboratory supervision and marking of lab notebooks | | | | |
| **2009–2013:** | | **1st class Honors** from the **MPhys course in Physics**, University of Leicester, UK. | | |
| * Masters dissertation on auroral observations of substorms | | | | |
| **Summer 2010:** | | **Research Assistant** with Prof. **J. Remedios** & Dr. **H**. **Sembhi** in the **Earth Observation Group**, University of Leicester, UK. | | |
| * **Developing improved cloud flagging procedures** for Envisat data above water to estimate sea surface temperatures | | | | |
| **Grants & Prizes:** | | | | |
| **2022:** | * **Winner** of the **British Science Association’s Early Career Lectureship Prize** | | | |
| **2019:** | * **NERC Standard Grant** **(£704k FEC)**: Researcher Co-Investigator * **Royal Astronomical Society Small Grant Scheme (£1.4k)**:Funding for discussion meeting * Runner-up in the *Seaborgium zone* of **I’m a Scientist Get me out of here** | | | |
| **2016:** | * **Shortlisted** for the University of Leicester Research Images Competition | | | |
| **2015:** | * **Royal Astronomical Society Small Grant Scheme (~£1k)**: Conference Travel AGU Fall Meeting (San Francisco, US) * **Best Student Talk: Rishbeth Prize** at the National Astronomy Meeting | | | |
| **2014:** | * **Joint First Place: 3-Minute Wonder Competition**, Institute of Physics, Midlands Division | | | |
| **Publication Highlights:** | | | | |
| * **9 first author** **publications** in **Journal of Geophys. Res.**, **Space Weather** and **A&G, e.g.**: * **M.-T. Walach**, A. Grocott, F. Staples, … (**2022**), *Super Dual Auroral Radar Network Expansion and its Influence on the Derived Ionospheric Convection Pattern*, **J. Geophys. Res.: Space Physics**, 127, e2021JA029559, doi:10.1029/2021JA029559; **1 citation** * **M.-T. Walach**, A. Grocott, and S. E. Milan (**2021**), *Average Ionospheric Electric Field Morphologies during Geomagnetic Storm Phases*, **J. Geophys. Re: Space Physics**, doi:10.1029/2021JA029337; **4 citations** * **M.-T. Walach**, and A. Grocott (**2019**), *SuperDARN scatter during geomagnetic storms and geomagnetically active times,* **J. Geophys. Res.: Space Physics**, doi: [10.1029/2019JA026816](https://doi.org/10.1029/2019JA026816); **27** **citations** * **M.-T. Walach**, S. E. Milan, K. R. Murphy,… (**2017**), *Comparative study of large-scale auroral signatures of substorms, steady magnetospheric convection events, and sawtooth events*, **J. Geophys. Res.: Space Physics**, 122, 6357–6373, doi: 10.1002/2017JA023991; **13 citations** * **M.-T. Walach**, and S. E. Milan (**2015**), *Are Steady Magnetospheric Convection Events Prolonged Substorms?*. **J. Geophys. Res.: Space Physics**, doi: [10.1002/2014JA020631](http://dx.doi.org/10.1002/2014JA020631); **29 citations** | | | | |
| * **14 co-author publications** in **Space Sc. Rev.**, **J. of Geophys. Res.**, **Space Weather**, **A&G**. * **Co-author of 10 software packages published on Zenodo/Github.** | | | | |
| **Invited Talks:** | | | | |
| **Conference talks: National Astronomy Meeting** 15/07/2022,University of Warwick, UK.  **Canadian** Division of Atmospheric and Space Physics Workshop, 24/02/2022, Canada, virtual.  **14th International Conference on Substorms**, 03/10/2019, Tromsø, Norway. | | | | |
| **Seminar talks**:  **MIST Online Seminar Series,** 07/06/2022, UK, *virtual*.  **Magnetospheres Online Seminar Series**, 21/03/2022, US, *virtual*.  **Mars Week**, 16/03/2022, UK Space Education Office*, virtual*.  **University of Saskatchewan**, 28/06/2022, Canada, *virtual*.  **Dartmouth College** 02/03/2021, US, *virtual.*  **Ground Induced Currents & Machine Learning Group**,05/05/2020,US, *virtual*.  **University of Southampton**, 30/04/2019, Southampton, UK.  **Mullard Space Science Laboratory (UCL),** 19/03/2019, Surrey, UK.  **University of Leicester**, 16/01/2019, Leicester, UK.  **Lancaster University**, 18/03/2017, Lancaster, UK.  **Swedish Institute of Space Physics Uppsala**, 03/02/2016, Uppsala, Sweden. | | | | |
| **Community Leadership:** | | | | |
| * **Panel member** of Royal Astronomical Society Grants, Awards and Prize Review(2020/21). * **Chair** of the **MIST Awards Taskforce Team** (since 2019). * **Elected member** of the **MIST** (Magnetosphere, Ionosphere and Solar-Terrestrial) **Community Council** since August 2019 (www.mist.ac.uk). | | | | |
| * **Session convener** at the SuperDARN workshops in 2015 and 2018, the National Astronomy Meeting in 2019, 2021 and 2022, and the 14th International Conference on Substorms in 2019. * **Organiser** of the 2021 and 2020 Annual **Autumn MIST** meeting | | | | |
| * **Reviewer** for **Frontiers in Astronomy and Space Science** (since 2022); **Nature Astronomy** (since 2020); **Annales Geophysicae** (since 2019); **Journal of Geophysical Research - Space Physics** (since 2014). | | | | |
| * Memberof **SuperDARN Data Standards Working Group** and **Spacecraft Scheduling Working Group and Data Analysis Working Group**. | | | | |
| * Member of the **Solar wind Magnetosphere Ionospheric Link Explorer** (SMILE) **ESA/CAS mission** consortium and member of **Ground-based support mission team**. | | | | |
| * **External examiner** for the University of KwaZulu-Natal in **South Africa**. | | | | |
| **Public Engagement:** | | | | |
| * Invited Talk at **Mars Week 2022**: *How the Aurora Lights Up Space*, **2022**, UK Space Education Office*, virtual*. * Presenting *Journey across the Solar System*, **Light Up Lancaster, 2017.** * Outreach talk, explaining research to the public, **Pub-hD talk**, Leicester, UK: **2015.** * Setting up & talking to visitors at the **Stargazing Live Event**, Leicester, UK. * **2015**: ionospheric & magnetospheric phenomena; **2014**: Space Weather; **2013**: Supernovae, Gamma Ray Bursts & SWIFT. * Outreach talk, explaining research to the public, **Pub-hD talk**, Leicester, UK: **2015.** * 3 Minute Presentation to a non-specialist audience explaining my research, **3 Minute Wonder Competition**, Institute of Physics: **2014 & 2015**. | | | | |