

Institute of Physics, University of Graz Universitätsplatz 5, 8010, Graz ♦ +43 (0)316 380 5263 ⋈ veronika.witzke@uni-graz.at

RESEARCH INTEREST

- Radiative transfer in stellar atmospheres
- Magnetohydrodynamics, fluid dynamics, instabilities and turbulence
- Stellar magnetic activity and exoplanets

EMPLOYMENT

Senior Scientist	10/2024 – present
University of Graz (Karl-Franzens-Universität Graz), Austria	
Postdoctoral Researcher Max Planck Institute for Solar System Research, Germany	03/2017-09/2024
EDUCATION	

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JUCATION	
PhD in Applied Mathematics	10/2013-08/2017
CITY, UNIVERSITY OF LONDON, UNITED KINGDOM	
Thesis: Shear Flow Instabilities in Stars; Linear Stability and Non-Linear Evolution	
Supervisor: Dr L. J. Silvers (funded by Science and Technology Facilities Council)	
Master of Science in Physics	10/2010-05/2013
Ludwig Maximilian University of Munich, Germany	

ORGANISATION OF SCIENTIFIC MEETINGS

Co-proposer and SOC member, Cool Stars 21, postponed due to COVID-19	
Splinter Session: 'Modelling stellar atmospheres: advances brought by solar know-how',	2020
Co-proposer and SOC member, Cool Stars 20, Boston/Cambridge, USA, 100 participants Splinter Session: 'Stellar Brightness Variations: building on solar knowledge'	2018
Organiser for PhD seminars across several departments,	2014
CITY, UNIVERSITY OF LONDON	-2016

TEA

Talk: 'Modelling Brightness Variability of Sun-like Stars',

Talk: 'Does the Sun behave unusually for a Sun-like Star?',

Stellar Interiors', Solar Group Seminar, MPS, Göttingen, Germany Talk: 'Dynamo Action in Turbulent Fully Compressible Shear Flows',

Talk: 'Shear Instabilities in a Fully Compressible Polytropic Atmosphere',

Invited Seminar: 'Magnetohydrodynamics Applied to Stellar Objects',

Invited Seminar: 'How Investigating Shear-Driven Turbulence Helps to Understand

Joint British Mathematical Colloquium & British Applied Mathematics Colloquium,

Cool Stars 20, Boston/Cambridge, USA

IAU Symposium 340, Jaipur, India

UK MHD Meeting, Glasgow, UK

University of Kent, Canterbury, UK

Cambridge, UK

Reading lectures	10/20	024 – presen
- The Galaxy and extragalactic systems - Astrophysics Lab		
- Introduction to GR and cosmology (full course)		
- Selected lectures on instrumentation and observation techniques		
University of Graz		
Assistance in teaching	01/20	024
- Selected lectures on magnetic active regions and modelling MAX PLANCK INSTITUT FOR SOLAR SYSTEM RESEARCH		
Supervision	11/20	020 - 08/202
- master student supervision of Hanna-Bianca-Duehnen		
MAX PLANCK INSTITUT FOR SOLAR SYSTEM RESEARCH		
Assistance in supervision	05/20	017-02/202
 PhD-thesis by Nina Nemec (09/2018–02/2021), bachelor's thesis by Hanna B. Duehnen (09/2018–04/2019) 		
- master's thesis by Miha Cernetic (05/2017–09/2019),		
MAX PLANCK INSTITUT FOR SOLAR SYSTEM RESEARCH		
Tutor for programming labs and maths in actuarial science,	10/20	014-06/2016
CITY, UNIVERSITY OF LONDON		
LECTED TALKS		
Talk: 'Effect of metallicity on magnetic features in Sun-like stars', 9th BCool Meeting, Online, Germany		April 2021
Talk: 'The effect of metallicity on the detectability of rotational periods in Sun-lil	ke stars'	Sept. 2019
16th Thinkshop: The rotation periods of cool stars, Potsdam, Germany	ke stars,	ocpt. 2010
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July 2018

Feb 2018

Dec 2016

May 2016

April 2015

March 2015

RESEARCH TRAININGS AND SCHOOLS

Advanced Fortran Topics Online course, Leibniz Supercomputer Centre	Nov 2021
International HPC Summer School 2015, University of Toronto, Toronto, Canada	June 2015
STFC Advanced Summer School in Solar Physics, University of Dundee, Dundee, UK	Aug 2014
Hands-On Introduction to High Performance Computing and Message-Passing Programming with MPI, EPCC, University of Edinburgh, Edinburgh, UK	July 2014

PROGRAMMING SKILLS

Advanced Knowledge	Fortran, MPI, Matlab, LTEX, Microsoft Office.
Intermediate knowledge	Mathematica, C++, IDL, Maple, Python.

LANGUAGES

German, Russian	native
English	advanced

HONORARY COMMITMENTS / PUBLIC ENGAGEMENT

Various public talks and presentations at public outreach events	2017 – present
Most recent example: talk and discussion for pupils (11-15 years old) about the Sun and being a scientist	25. April 2024
Postdoc representative, Max Planck institute for Solar system research	06/2018-06/2019
Co-organising the outreach event 'Pint of Science Festival' Organising the events 'From Atoms to Galaxies' at CITY, UNIVERSITY OF LONDON	11/2015-06/2016
PhD students representative, CITY, UNIVERSITY OF LONDON	10/2013-10/2014

Graz, 10th April 2025

O. W. Helre