

Curriculum Vitae

Wieland Dietrich

Date of Birth 3rd of October, 1983

Place of Birth Weimar, Germany

Current professional affiliation Max Planck Institute for Solar System Research, Justus-von-Liebig Weg 3, 37077 Göttingen, Germany

Education & Employment

- 2003 – 2009: Diploma in physics, University of Bayreuth, Germany
- 2009 – 2012: PhD in physics, University of Goettingen, Germany and Max Planck Institute for Solar System Research (MPS)
- 2012 – 2013: Postdoc at MPS in planetary dynamics group with Prof. Ulrich Christensen and Dr. Johannes Wicht
- 2013 – 2016: PDRA at Department of Applied Mathematics, University of Leeds with Prof. Steve Tobias, Prof. Chris Jones
- 2016 – 2019: Postdoc at MPS in the planetary dynamics group with Prof. Ulrich Christensen and Dr. Johannes Wicht
- since 2019: scientist, department of planets & comets, MPS

Publications

- [1] **W. Dietrich** & J. Wicht (2013): 'A hemispherical dynamo model: Implications for the Martian crustal magnetization', *Physics of the Earth and Planetary Interiors*, vol. 217
- [2] **W. Dietrich**, J. Wicht, D. Schmitt (2013): 'Hemispherical Parker waves driven by thermal shear in planetary dynamos', *Europhysics Letters*, vol. 104
- [3] H. Cao, J. Aurnou, J. Wicht, **W. Dietrich**, K. Soderlund, C. Russell (2014): 'A dynamo explanation for Mercury's anomalous magnetic field', *Geophysical Research Letters*, vol. 41
- [4] K. Hori, J. Wicht, **W. Dietrich** (2014): 'Ancient dynamos of terrestrial planets more sensitive to core-mantle boundary heat flows', *Planetary and Space Science*, vol. 98
- [5] **W. Dietrich**, J. Wicht, K. Hori (2015): 'Effect of width, amplitude and position of a CMB hot spot on core convection and dynamo action', *Progress in Earth and Planetary Science*, special issue entitled 'Multidisciplinary Researches on Deep Interiors of the Earth and Planets', vol. 2
- [6] **W. Dietrich**, K. Hori, J. Wicht (2016): 'Core flows and heat transfer induced by inhomogeneous cooling with sub- and supercritical convection', *Physics of the Earth and Planetary Interiors*, vol. 251
- [7] **W. Dietrich**, T. Gastine, J. Wicht (2016): 'Reversal and amplification of zonal flows by boundary enforced thermal wind', *Icarus*, vol. 282
- [8] T. Platz, A. Nathues, N. Schorghofer, F. Preusker, E. Mazarico, S. E. Schröder, S. Byrne, T. Kneissl, N. Schmedemann, J.-P. Combe, M. Schäfer, G. Thangjam, M. Hoffmann, P. Gutierrez-Marques, M. E. Landis, **W. Dietrich**, J. Ripken, K.-D. Matz, C. T. Russell (2016): 'Surface water-ice deposits in the northern shadowed regions of Ceres', *Nature Astronomy*, vol. 1

- [9] **W. Dietrich** & C. A. Jones (2018): 'Anelastic spherical dynamos with radially variable electrical conductivity ', *Icarus*, vol. 305
- [10] **W. Dietrich** & J. Wicht (2018): 'Penetrative Convection in Partly Stratified Rapidly Rotating Spherical Shells', *Frontiers in Earth Sciences*, vol. 6
- [11] J. Wicht, T. Gastine, L.D.V. Duarte, **W. Dietrich** (2019): 'Dynamo action of the zonal winds in Jupiter', *Astronomy and Astrophysics*, vol. 629
- [12] P. Kollmann, I. Cohen, R. C. Allen, G. Clark, E. Roussos, S. Vines, **W. Dietrich**, J. Wicht, I. de Pater, K. D. Runyon, R. Artwright, A. Masters, D. Brain, K. Hibbits, B. Mauk, M. Gkioulidou, A. Rymer, R. McNutt Jr., V. Hue, S. Stanley, P. Brandt (2020): 'Magnetospheric Studies: A Requirement for Addressing Interdisciplinary Mysteries in the Ice Giant Systems', *Space Science Reviews*, vol. 216
- [13] J. Wicht, **W. Dietrich**, P. Wulff, U. R. Christensen (2020): 'Linking zonal winds and gravity: the relative importance of dynamic self gravity', *Monthly Notices of the Royal Astronomical Society*, vol. 492
- [14] U. R. Christensen, J. Wicht, **W. Dietrich** (2020): 'Mechanisms for limiting the depth of zonal winds in the gas giant planets', *The Astrophysical Journal*, vol. 890
- [15] S. Kumar, A. J. Poser, M. Schöttler, U. Kleinschmidt, **W. Dietrich**, J. Wicht, M. French, R. Redmer (2021): 'Ionization and transport in partially ionized multicomponent plasmas: Application to atmospheres of hot Jupiters', *Physical Review E*, vol. 103
- [16] **W. Dietrich**, P. Wulff, J. Wicht, U. R. Christensen (2021): 'Linking zonal winds and gravity: Explaining the equatorially antisymmetric gravity moments of Jupiter', *Monthly Notices of the Royal Astronomical Society*, vol. 505

Grants & Awards

- 3 yr PhD stipend from the International Max Planck Research School, Max Planck Institute for Solar System Research
- 3+3 year temporary position for PIs in the framework of DFG priority programme 'Exploring the Diversity of Extrasolar Planets' (SPP 1992): 'Structure and Dynamics of Hot Jupiter Atmospheres'
- Invitation to the Isaac Newton Institute Cambridge for the programme "Frontiers in Dynamo Theory – From the Earth to the Stars" in 2022

Reviewer Work

- since 2014: Reviewer for 'Physics of the Earth and Planetary Interiors'
- since 2016: Reviewer for 'Applied Mathematical Modelling'
- since 2018: Reviewer for 'JGR Planets'
- since 2020: Review Editor for 'Frontiers in Earth Science'
- since 2020: Reviewer for 'ApJ Letters'
- since 2021: Reviewer for 'Geophysical Journal International'