



Dr. Tim Deutschmann

Persönliche Angaben

Geburtsdatum 22. Juni 1979
Geburtsort Lübeck
Kinder ein Sohn, geb. 2007

Schulbildung

1989–1997 **Gymnasium**, *Johanneum*, Lübeck.
1998–1999 **Abitur**, *Internationale Gesamtschule*, Heidelberg.

Grundstudium

2001–2002 **Grundstudium Physik**, *Universität Erlangen-Nürnberg*, Erlangen.
2001 HiWi in der Quantenoptikgruppe am Lehrstuhl für Optik Prof. Leuchs
2002–2003 **Grundstudium Physik**, *Ruprecht-Karls-Universität*, Heidelberg.

Hauptstudium - Diplom

2002–2004 **HiWi**, *C/C++ Programmierung: Datenextraktion SCIAMACHY, GOME*, IUP Heidelberg.
2005–2006 **HiWi**, *C/C++ RTM TRACY-II*, IUP Heidelberg.
2007 **HiWi**, *TRACY-II*, MPI Chemie Mainz.
2008 Entwicklungsbeginn von RTM McArtim 1
2008 Wahlfachprüfung Umweltphysik
2008-2009 **HiWi**, *Betreuung McArtim*, IUP Heidelberg.
2009 Nebenfachprüfung Informatik und Numerik
April 2009 **Diplom Physik**, *Ruprecht-Karls-Universität*, Heidelberg.
2009-2012 **Wissenschaftlicher Angestellter**, *Betreuung RTM McArtim*, IUP Heidelberg.
2009–2010 Wiss. Ang. IUP Heidelberg und Veröffentlichung von McArtim 2 in [Deutschmann et al., 2011]

Promotion

2010–2014 **PhD cand. Physik**, *Universität Leipzig*, Heidelberg.
2010–2014 partielle Mitarbeit an den Projekten DFG-HALO, DFG HALO II, ERC Synergy, ENVIVAL, SOPRAN II, Halopole II, NASA Attrex, SHIVA, TACTS
8. Januar 2015 erfolgreiche Promotion zum Dr. rer. nat.

Freiwilliges Ehrenamt

- 2015– **Analyse der sozio-ökonomischen Physik positiver und negativer Zinsen, ehrenamtliche Aufklärungs-Arbeit, Erstellung eines öffentlichen Buches**, *www.tim-deutschmann.de*, Dossenheim.

Publikationen

Monographien

2015–

Deutschmann, T., **Die sozio-ökonomische Physik positiver und negativer Zinsen, Öffentliches Internet-Buch**, *www.tim-deutschmann.de*, 2015.

2015

Deutschmann, T., **On modeling elastic and inelastic polarized radiation transport in the earth atmosphere with Monte Carlo methods**, **Dissertation** Universität Leipzig, Leipzig, 2015.

2009

Deutschmann, T., **Atmospheric radiative transfer modelling with Monte Carlo methods.**, **Diplom-Arbeit**, Universität Heidelberg, Heidelberg, 2009.

Poster

2012

Deutschmann, T., Platt, U., **3D Sensitivity in Atmospheric Remote Sensing**, DPG Berlin, 2012.

Vorträge

2012

Deutschmann, T., **Inversion using the Forward Model McArtim, Aerosol Optical Properties from Mie Theory and Metropolis-Hastings Retrieval of Tracegases and Aerosols**, Volkamer Group, University of Colorado, Boulder, September 4, 2012.

2013

Deutschmann, T., **On Linearisation, Importance Sampling and Adaptive Variance Reduction Techniques Applied to Solutions of Fredholm Integral Equations in Atmospheric Optics**, Monte Carlo methods in natural sciences, engineering and economics, DESY Hamburg, 19-21 February, 2013.

2014

Deutschmann, T., **On the application of the importance sampling technique in atmospheric radiation transport modelling**, Institutseminar, KFZ Jülich, January 22th, 2013.

Keltenweg 22 – 69221 Dossenheim

☎ +49 (0)6221 718463 • ✉ Tim.Deutschmann@posteo.de

🌐 <http://www.tim-deutschmann.de>

Schriftliche Publikationen

2012

Kern, C., Deutschmann, T., Werner, C., Sutton, A. J., Elias, T., and Kelly, P. J. **Improving the Accuracy of SO₂ Column Densities and Emission Rates Obtained from Upward-Looking UV-Spectroscopic Measurements of Volcanic Plumes by Taking Realistic Radiative Transfer into Account.** Journal of Geophysical Research: Atmospheres, 117 (D20), 2156-2202, 2012.

2011

Deutschmann, T., Beirle, S., Frieß, U., Grzegorski, M., Kern, C., Kritten, L., Platt, U., Prados-Román, C., Puķīte, J., Wagner, T., Werner, B., and Pfeilsticker, K.: **The Monte Carlo Atmospheric Radiative Transfer Model McArtim: Introduction and Validation of Jacobians and 3D Features.** Journal of Quantitative Spectroscopy and Radiative Transfer, 112(6):1119 - 1137, 2011.

Prados-Román, C., Butz, A., Deutschmann, T., Dorf, M., Kritten, L., Minikin, A., Platt, U., Schlager, H., Sihler, H., Theys, N., Van Roozendael, M., Wagner, T., and Pfeilsticker, K.: **Airborne DOAS limb measurements of tropospheric trace gas profiles: case studies on the profile retrieval of O₄ and BrO,** Atmos. Meas. Tech., 4, 1241-1260, doi:10.5194/amt-4-1241-2011, 2011.

2010

Kritten, L., Butz, A., Dorf, M., Deutschmann, T., Kühl, S., Prados-Román, C., Puķīte, J., Rozanov, A., Schofield, R., Pfeilsticker, K.: **Time Dependent Profile Retrieval of UV/vis Absorbing Radicals from Balloon-Borne Limb Measurements - A Case Study on NO₂ and O₃**, *Atmos. Meas. Tech.*, 3, 933-946, 2010.

Wagner, T., Beirle, S., Deutschmann, T., and Penning de Vries, M.: **A sensitivity analysis of Ring effect to aerosol properties and comparison to satellite observations**, *Atmos. Meas. Tech.*, 3, 1723-1751, doi:10.5194/amt-3-1723-2010, 2010.

Puķīte, J., Kühl, S., Deutschmann, T., Dörner, S., Jöckel, P., Platt, U., and Wagner, T.: **The effect of horizontal gradients and spatial measurement resolution on the retrieval of global vertical NO₂ distributions from SCIAMACHY measurements in limb only mode**, *Atmos. Meas. Tech.*, 3, 1155-1174, doi:10.5194/amt-3-1155-2010, 2010.

2009

Puķīte, J., Kühl, S., Deutschmann, T., Platt, U., and Wagner, T.: **Extending differential optical absorption spectroscopy for limb measurements in the UV**, *Atmos. Meas. Tech.*, 3, 631-653, doi:10.5194/amt-3-631-2010, 2010.

Wagner, T., Deutschmann, T., and Platt, U.: **Determination of aerosol properties from MAX-DOAS observations of the Ring effect**, *Atmos. Meas. Tech.*, 2, 495-512, doi:10.5194/amt-2-495-2009, 2009.

Wagner, T., S. Beirle, and T. Deutschmann: **Three-dimensional simulation of the Ring effect in observations of scattered sun light using Monte Carlo radiative transfer models** *Atmos. Meas. Tech.*, 2, 113-124, 2009.

2008

Kühl, S., J. Puķīte, T. Deutschmann, U. Platt, and T. Wagner: **SCIAMACHY limb measurements of NO₂, BrO and OCIO. Retrieval of vertical profiles: Algorithm, first results, sensitivity and comparison studies**. *Advances in Space Research*, 42, Issue 10, 1747-1764 (2008).

Li, X., T. Brauers, M. Shao, R. M. Garland, T. Wagner, T. Deutschmann, and A. Wahner: **MAX-DOAS measurements in southern China: 1. automated aerosol profile retrieval using oxygen dimers absorptions**. *Atmos. Chem. Phys. Discuss.*, 8, 17661-17690 (2008).

Puķīte, J., S. Kühl, T. Deutschmann, U. Platt, and Wagner, T.: **Accounting for the effect of horizontal gradients in limb measurements of scattered sunlight**. *Atmos. Chem. Phys.*, 8, 3045-3060 (2008).

Wagner, T., S. Beirle, T. Deutschmann, E. Eigemeier, C. Frankenberg, M. Grzegorski, C. Liu, T. Marbach, U. Platt, and M. Penning de Vries: **Monitoring of atmospheric trace gases, clouds, aerosols and surface properties from UV/vis/NIR satellite instruments**. *J. Opt. A: Pure Appl. Opt.*, 10 No 10, 104019 (9pp), doi: 10.1088/1464-4258/10/10/1040192008 (2008).

Wagner, T., S. Beirle, T. Deutschmann, M. Grzegorski, and U. Platt: **Dependence of cloud properties derived from spectrally resolved visible satellite observations on surface temperature**. *Atmos. Chem. Phys.*, 8, 2299-2312 (2008).

2007

Wagner, T., S. Beirle, T. Deutschmann, M. Grzegorski, and U. Platt: **Satellite monitoring of different vegetation types by differential optical absorption spectroscopy (DOAS) in the red spectral range** Atmospheric Chemistry and Physics, Vol. 7, pp 69-79, 2007.

Wagner, T., J. P. Burrows, T. Deutschmann, B. Dix, C. von Friedeburg, U. Frieß, F. Hendrick, K.-P. Heue, H. Irie, H. Iwabuchi, Y. Kanaya, J. Keller, C. A. McLinden, H. Oetjen, E. Palazzi, A. Petritoli, U. Platt, O. Postolyakov, J. Puķīte, A. Richter, M. van Roozendaal, A. Rozanov, V. Rozanov, R. Sinreich, S. Sanghavi, F. Wittrock **Comparison of Box-Air-Mass-Factors and Radiances for Multiple-Axis Differential Optical Absorption Spectroscopy (MAX-DOAS) Geometries calculated from different UV/visible Radiative Transfer Models** Atmos. Chem. Phys., 7, 1809-1833, 2007.

Keltenweg 22 – 69221 Dossenheim

☎ +49 (0)6221 718463 • ✉ Tim.Deutschmann@posteo.de

🌐 <http://www.tim-deutschmann.de>