Alain Plattner

amplattner@ua.edu
http://alainplattner.net

CV date: September 18, 2023

For the most recent version of my CV, click here

Expertise:

Planetary magnetic fields. Regional inversion of satellite magnetic data. Regional spherical-harmonic spectral analysis. Electrical resistivity tomography. Ground penetrating radar. Near-surface geophysics.

Address:

Department of Geological Sciences
University of Alabama
Box 870338
Tuscaloosa, AL 35487, USA

Positions:

2018–present: Assistant Professor at the Department of Geological Sciences,
University of Alabama, Tuscaloosa AL, USA

2014–2018: Assistant Professor at the Department of Earth and Environmental Sciences,
California State University Fresno, Fresno CA, USA

2011–2014: Postdoctoral Researcher at the Department of Geosciences,
Princeton University, Princeton NJ, USA

Degrees:

2011: PhD (Dr. Sc. ETH Zurich) in Geophysics at the Institute of Geophysics, ETH Zurich, Switzerland. Thesis title: *Adaptive wavelet methods for geoelectric modelling and inversion.* Adviser: Prof. Hansruedi Maurer. doi: 10.3929/ethz-a-006481159

2006: Master of Science in Mathematics at the Institute of Mathematics, University of Basel, Switzerland. Majors: Algebraic geometry, numerical mathematics

2004: Bachelor of Science in Mathematics at the Institute of Mathematics, University of Basel, Switzerland.

Awards:

NASA Early Career Award (2020)

Publications:

*: Undergraduate student first author
†: Graduate student first author

Research articles/book chapters:

A.M. Plattner and C.L. Johnson. Local spherical harmonic power spectra from local magnetic or gravity data. *Geophys. J. Int.* in revision

C. Wu, C. Lu, Y. Chen, **A. Plattner**, B. Liu, L. Shu, Y. Zhang. Anomalous Decline of Groundwater Levels in Coastal Aquifers in China Identified by Combining GRACE and InSAR Data. *Geophys. Res. Lett.*, in revision

[16] **A.M. Plattner**, C.L. Johnson, M.J. Styczinski, S.D. Vance, A.C. Mills. On Ganymede's Magnetic Quadrupolar Strength. *Planet. Sci. J.*, 4:134, doi: 10.3847/PSJ/acde7f

[15] **A. M. Plattner**, S. Filoromo, E. H. Blair (2022), Multi-method geophysical investigation at Snow's Bend, a Mississippian Platform Mound, *Archaeol. Prospect.*, doi: 10.1002/arp.1866

[14] V. Michel, **A. M. Plattner**, K. Seibert (2022), A Unified Approach to Scalar, Vector, and Tensor Slepian Functions on the Sphere and Their Construction by a Commuting Operator *Anal. Appl.*, 20(5):947–988, doi: 10.1142/S0219530521500317

[13] **A. M. Plattner** and C. J. Johnson (2021), Mercury's Northern Rise Core-Field Magnetic Anomaly *Geophys. Res. Lett.*, 48(17):e2021GL094695 doi: 10.1029/2021GL094695

†[12] M. Pacheco, **A. M. Plattner**, G. M. Stock, D. H. Rood and C. J. Pluhar (2020), Surface Exposure Dating and Geophysical Tomography of the Royal Arches Meadow Rock Avalanche, Yosemite Valley, California *Front. Earth. Sci.*, 8:372, doi: 10.3389/feart.2020.00372

[11] **A. Plattner** (2020), GPRPy: Open-source ground penetrating radar processing and visualization software, *The Leading Edge*, 39(5):332–337, doi: 10.1190/tle39050332.1

*[10] A. R. Robbins, **A. Plattner** (2018), Offset-electrode profile acquisition strategy for electrical resistivity tomography, *J. Appl. Geoph.*, 151:66–72, doi: 10.1016/j.jappgeo.2018.01.027

[9] **A. Plattner**, F. J. Simons (2017), Internal and external potential field estimation from regional gradient data at varying satellite altitude, *Geophys. J. Int.*, 211(1):207–238, doi: 10.1093/gji/ggx244

[8] **A. Plattner**, F. J. Simons (2015), High-resolution local magnetic field models for the Martian South Pole from Mars Global Surveyor data, *J. Geophys. Res.-Planet*, 120:1543–1566, doi: 10.1002/2015JE004869

[7] C. Harig, K. W. Lewis, **A. Plattner**, and F. J. Simons (2015), A suite of software analyzes data on the sphere, *Eos Trans. AGU*, 96(6):18–22, doi: 10.1029/2015EO025851

[6] **A. Plattner** and F. J. Simons (2015), Potential field estimation using scalar and vector Slepian functions at satellite altitude, *Handbook of Geomathematics, 2nd edition*, doi: 10.1007/978-3-642-27793-1_64-2

[5] F. J. Simons and **A. Plattner** (2015), Scalar and vector Slepian functions, spherical signal estimation and spectral analysis, *Handbook of Geomathematics, 2nd edition*, doi: 10.1007/978-3-642-27793-1_30-2

[4] **A. Plattner** and F. J. Simons (2014), Spatiospectral concentration of vector fields on a sphere, *Appl. Comput. Harmon. Anal.*, 36(1):1–22, doi: 10.1016/j.acha.2012.12.001

[3] **A. Plattner** and F. J. Simons (2013), A spatiospectral localization approach for analyzing and repres enting vector-valued functions on spherical surfaces, *Proc. SPIE* 8858, Wavelets and Sparsity XV, 88580N, doi: 10.1117/12.2024703

[2] **A. Plattner**, H. R. Maurer, J. Vorloeper and M. Blome (2012), 3-D electrical resistivity tomography using adaptive wavelet parameter grids, *Geophys. J. Int.*, 189(1):317–330, doi: 10.1111/j.1365-246X.2012.05374.x

[1] **A. Plattner**, H. R. Maurer, J. Vorloeper and W. Dahmen (2010), Three-dimensional geoelectric modelling with optimal work/accuracy rate using an adaptive wavelet algorithm, *Geophys. J. Int.*, 182(2):741–752, doi: 10.1111/j.1365-246X.2010.04677.x

Extended abstracts:

Note: This section only contains multi-page abstracts that resemble short papers, not the short single paragraph abstracts like for AGU. For a list of short abstracts, see Section "Abstracts since Fall 2018".

[11] N. J. McGregor, F. Nimmo, C. Gillmann, G. J. Golabek, **A. M. Plattner**, J. W. Conrad (2023), Constraining Venus' Convection Regime From Baltis Vallis Topography, *54th Lunar and Planetary Science Conference 2023*, Abstract 1724

[10] **A.M. Plattner**, A. C. Mills and C. L. Johnson (2022), How Dipole-Dominant is Ganymede's Core Magnetic Field? *53nd Lunar and Planetary Science Conference 2022*, Abstract 1111

[9] R. I. Citron, M. Manga, D. Hemingway, **A. M. Plattner** (2021), Are we visiting the coastlines of Mars? Load-corrected paleo-ocean levels at Jezero, Oxia Planum, and Gale, *52nd Lunar and Planetary Science Conference 2021*, Abstract 1605

†[8] A. C. Mills and **A. M. Plattner** (2020), Regional Power Spectral Estimation with Application to Galileo Data of Ganymede, *51st Lunar and Planetary Science Conference 2020*, Abstract 2264

[7] **A. Plattner**, C. L. Johnson (2019), Large-Scale Non-Axisymmetric Internal Structure of Mercury's Magnetic Field, *50th Lunar and Planetary Science Conference 2019*, Abstract 1645

[6] **A. Plattner**, C. L. Johnson (2018), Regional Modeling and Power Spectra of Mercury's Crustal Magnetic Field, *Mercury 2018*, Abstract 6023

[5] C. L. Johnson, **A. M. Plattner**. R. J. Phillips, L. C. Philpott, M. Kinczyk, L. Prockter (2018), The Distribution and Origin of Mercury's Lithospheric Magnetization, *Mercury 2018*, Abstract 6052

[4] **A. Plattner**, G. J. Golabek, F. J. Simons (2017), A spectral view of the Terra Sirenum / Cimmeria crustal magnetic field, *48th Lunar and Planetary Science Conference 2017*, Abstract 1627

*[3] A. R. Robbins and **A. Plattner** (2017), 2.75-D ERT: Zigzag electrode acquisition strategy to improve 2-D Profiles, *Symposium on the Application of Geophysics to Engineering and Environmental Problems 2017*, 183–187, doi: 10.4133/SAGEEP.30-007

[2] **A. Plattner** and F. J. Simons (2015), Mars' heterogeneous South Polar magnetic field revealed using altitude vector Slepian functions, *46th Lunar and Planetary Science Conference 2015*, Abstract 1794

[1] **A. Plattner**, F. J. Simons, L. Wei (2012), Analysis of real vector fields on the sphere using Slepian functions, *IEEE Statistical Signal Processing Workshop (SSP)*, Abstract

Non peer-reviewed publications:

[1] **A. Plattner**, M. Pacheco, (2019), A community-developed free Ground Penetrating Radar software, *Near-Surface Views, Newsletter of the Near-Surface Geophysics Technical Section of The Society of Exploration Geophysicists*, Q1 2019 Newsletter

Funding:

Funded: NASA Mars Data Analysis Program [NNH21ZDA001N-MDAP], 2023–2025

Funded: NSF Geoinformatics (transfer) [EAR-2022671], 2019–2022

Funded: NASA Planetary Sciences Early Career Award [80NSSC20K1080], 2020–2023

Declined: EPSCoR grant proposal 2019

Funded: NASA Discovery Data Analysis Program [80NSSC19K1426], 2019–2022

Funded: NSF Geoinformatics [EAR-1550732], 2016–2020

Funded: NASA Mars Data Analysis Program [NNX14AM29G], 2014–2017

Funded: Swiss National Science Foundation Fellowship for Prospective Researchers [PBEZP2-134427], 2011–2012

Funded: Ulrich Schmucker Memorial Trust grant (2011)

Conference Oral Presentations:

Note: This section only contains presentations where my students or I were first authors. For non-student co-authored oral presentations, please see section "Co-authored (non-student) presentations since 8/2018.

*: Undergraduate student presenter and/or first author
†: Graduate student presenter and/or first author
bold: Invited/solicited conference talks

Ground penetrating radar data processing and visualization using the open source software GPRPy, A. Plattner. *The International Meeting for Applied Geoscience & Energy (IMAGE)*, Houston TX, Aug 2023 (invited)

† How Dipole-Dominant is Ganymede's Core Field? **A. M. Plattner**, A. C. Mills, C. L. Johnson, *53rd Lunar and Planetary Science Conference*, The Woodlands, TX, March 2022

Geophysical Investigation of a Native-American Mound using Time-Domain Induced Polarization, **A. M. Plattner**, S. Filoromo. E. H. Blair, *AGU Fall Meeting*, New Orleans, LA, Dec 2021

Non-axisymmetric structure in Mercury's core field, **A. Plattner**, C. Johnson, *Annual Meeting of the Mercury Exploration Assessment Group (MExAG)*, Online, Feb, 2021

† **Near-Surface Geophysical Tomography of the Royal Arches Meadow Rock Avalanche in Yosemite Valley, California, M. Pacheco,** A. Plattner**, G. M. Stock, D. H. Rood, C. J. Pluhar, *AGU Fall Meeting*, Online, Dec 2020 (invited)**

† The Crust and Upper Mantle Structures in Central Anatolia,Turkey, Constrained by Gravity and Seismic Data, Y. Yılmaz, **A. M. Plattner**, R. Mahatsente, I. Çemen, B. Zhang, *GSA Connects*, Online, Oct 2020

† Three-dimensional Geophysical Imaging of the Royal Arches Meadow Rock Avalanche in Yosemite Valley, California, M. Pacheco, **A. Plattner**, G. Stock, C. Pluhar, *AGU Fall Meeting*, San Francisco, CA, Dec 2019

Mercury's Large-Scale Non-Axisymmetric Internal Field from MESSENGER Data, **A. Plattner**, C. L. Johnson, *AGU Fall Meeting*, San Francisco, CA, Dec 2019

Large-Scale Non-Axisymmetric Internal Structure or Mercury's Magnetic Field, **A. Plattner**, C. L. Johnson, *50th Lunar and Planetary Science Conference*, The Woodlands, TX, March 2019

A spectral view of the Terra Sirenum / Cimmeria crustal magnetic field, **A. Plattner**, F.J. Simons, G. Golabek, *48th Lunar and Planetary Science Conference*, The Woodlands, TX, March 2017

* **2.75-D ERT: Zigzag electrode acquisition strategy to improve 2-D profiles, A. R. Robbins,** A. Plattner**, *23rd European Meeting of Environmental and Engineering Geophysics*, Malmo, Sweden, Sep 2017 (best of SAGEEP invited talk)**

* 2.75-D ERT: Zigzag electrode acquisition strategy to improve 2-D profiles, A. R. Robbins, **A. Plattner**, *SAGEEP*, Denver, CO, Mar 2017

The Crustal Magnetic Field of Terra Sirenum and Cimmeria, Mars. A Spectral Perspective, **A. Plattner**, F. J. Simons, G. Golabek, *AGU Fall Meeting*, San Francisco, CA, Dec 2016

Teaching Near-Surface Geophysics within the Matlab/Octave Community, **A. Plattner**, *AGU Fall Meeting*, San Francisco, CA, Dec 2016

Localized Bandlimited Inversion of Planetary Magnetic-Field Data, **A. Plattner**, F. J. Simons, *SIAM Conference on Mathematical and Computational Issues in the Geosciences*, Stanford University, Stanford, CA, Jul 2015

High-resolution crustal magnetic field model of the Martian South Pole using altitude vector Slepian functions, *A. Plattner*, F. J. Simons, *Joint Mathematics Meeting*, San Antonio, TX, Jan 2015 (invited)

Planetary potential-field inversion from vectorial data: Using Slepian functions for varying satellite altitude, *A. Plattner*, F. J. Simons, *Joint Mathematics Meeting*, Baltimore, MD, Jan 2014 (invited)

Regional crustal field modeling from regional satellite data with varying altitude using dedicated vector Slepian functions, *A. Plattner*, F. J. Simons, *AGU Fall Meeting*, San Francisco, CA, Dec 2013 (invited)

Signal and Spectral Estimation on a Sphere, F. J. Simons, **A. Plattner**, *AMMCS 2013*, Waterloo, ON, Canada, August 2013 (invited speaker: F.J. Simons)

Source field estimation from satellite data using vectorial spatiospectrally concentrated functions, **A. Plattner**, F. J. Simons, *Geomathematics 2013*, Sankt Martin, Germany, April 2013

Vectorial Slepian functions and the estimation of the crustal magnetic field, A. Plattner, F. J. Simons, *EGU General Assembly*, Vienna, Austria, April 2013 (solicited)

Vector-valued crustal magnetic field estimation using vector Slepian functions, **A. Plattner**, F. J. Simons, *AGU Fall Meeting*, San Francisco, CA, Dec 2012

Geophysical survey of the Peristeries plateau in Polis Chrysochous, Cyprus, **A. Plattner**, F. J. Simons, J. S. Smith, A. C. Maloof, J. Husson, *American Schools of Oriental Research Annual Meeting*, Chicago, IL, Nov 2012

Adaptive wavelet parameterization for 3d electrical resistivity tomography, **A. Plattner**, H. R. Maurer, *AGU Fall Meeting*, San Francisco, CA, Dec 2011

Adaptive wavelet modeling of geophysical data, **A. Plattner**, H. R. Maurer, J. Vorloeper and W. Dahmen, *AGU Fall Meeting*, San Francisco, CA, Dec 2009

Seminar Talks:

Technische Universität Bergakademie Freiberg (Germany), Jul 2023
Society of Explorational Geophysics Webinar for Open-Source Software, Apr 2023
University of Western Washington (USA), Geology Department, Mar 2022
University of Toronto (Canada), Department of Earth Sciences and Department of Physics, Feb 2022
BepiColombo Geodesy and Geophysics Working Group, Nov 2021
University of South Florida (USA), School of Geosciences, Feb 2020
University of Mississippi (USA), Department of Geology and Geological Engineering, Oct 2019
University of Alabama (USA), Department of Physics and Astronomy, Sep 2019
University of Cape Town (South Africa), Department of Geology, Sep 2018
NASA Goddard Space Flight Center (USA), Jul 2018
University of Siegen (Germany), Department of Mathematics, May 2018
University of Alabama (USA), Department of Geological Sciences, Feb 2018
SERC Carleton College (Webinar), Apr 2017
University of the Witwatersrand (South Africa), School of Geosciences, Jul 2016
University of British Columbia (CA), Dept. of Earth, Ocean and Atmospheric Sci., Feb 2016
UC Santa Cruz (USA), Earth and Planetary Sciences Department, Oct 2014
Princeton University (USA), Department of Geosciences, Sept 2011, Apr 2014
CSU Fresno (USA), Department of Earth and Environmental Science, Feb 2014
Princeton University (USA), Program in Appl. and Comp. Mathematics, Nov 2013
Rutgers (USA), Department of Earth and Environmental Sciences, Feb 2012
Cornell University (USA), Department of Earth and Atmospheric Sciences, Feb 2012
Universite de Lausanne (Switzerland), Institute de Geophysique, Nov 2009, Jan 2012
ETH Zurich (Switzerland), Seminar for Applied Mathematics, Dec 2010
ETH Zurich (Switzerland), Department of Earth Sciences, Oct 2009

Posters:

*: Undergraduate student first author
†: Graduate student first author
bold: Invited/solicited conference posters

Revisiting Constraints on Ganymede's Dynamo from Spacecraft Magnetic Field Data, **A. Plattner**, A. C. Mills, C. L. Johnson, M. J. Styczinski, S. D. Vance *AGU Fall Meeting*, Chicago, IL and online, Dec 2022

Local magnetic field power spectrum from local data, **A. Plattner**, C. L. Johnson, *AGU Fall Meeting*, Online, Dec 2020

† Geophysical Investigation of the Royal Arches Meadow Rock Avalanche in Yosemite Valley - CA, M. Pacheco, **A. Plattner**, *GSA Cordilleran Meeting*, Portland OR, May 2019

Ground Penetrating Radar Data Processing and Visualization using GPRPy, *A. Plattner*, *AGU Fall Meeting*, Washington DC, Dec 2018

Mercury's Core Field: Beyond the Offset Axial Dipole, **A. Plattner**, C. L. Johnson, *AGU Fall Meeting*, Washington DC, Dec 2018

† Near Surface Geophysical Imaging of the Internal Structure of El Capitan Meadow Rock Avalanche in Yosemite National Park, California, C. Liu, **A. Plattner**, G. Stock, *AGU Fall Meeting*, Washington DC, Dec 2018

Mercury's Crustal Magnetic Field from MESSENGER Data, **A. Plattner**, C. L. Johnson, *AGU Fall Meeting*, New Orleans, LA, Dec 2017

* A glimpse in the third dimension for electrical resistivity profiles, A. R. Robbins, **A. Plattner**, *AGU Fall Meeting*, New Orleans, LA, Dec 2017

* Electrical Resistivity and Ground Penetrating Radar Investigation of Presence and Extent of Hardpan Soil Layers, S. J. Thao, **A. Plattner**, *AGU Fall Meeting*, San Francisco, CA, Dec 2015

Localized crustal magnetic field inversion from inner- and outer-source altitude vector Slepian functions, **A. Plattner**, F. J. Simons, *AGU Fall Meeting*, San Francisco, CA, Dec 2015

Mars' Heterogeneous South Polar Magnetic Field Revealed using Altitude Vector Slepian Functions, **A. Plattner**, F. J. Simons, *46th Lunar and Planetary Science Conference*, The Woodlands, TX, March 2015

High-resolution Local Crustal Magnetic Field Modeling of the Martian South Pole, **A. Plattner**, F. J. Simons, *AGU Fall Meeting*, San Francisco, CA, Dec 2014

Altitude vector Slepian functions and satellite crustal magnetic field data, **A. Plattner**, F. J. Simons, *3rd Swarm Science Meeting*, Copenhagen, Denmark, June 2014

Local gravity field modeling from vectorial satellite data using Slepian functions, **A. Plattner**, F. J. Simons, *AGU Fall Meeting*, San Francisco, CA, Dec 2013

Analysis of real vector fields on the sphere using Slepian functions, **A. Plattner**, F. J. Simons, L. Wei, *IEEE Statistical Signal Processing Workshop*, Ann Arbor, MI, Aug 2012

Lithospheric magnetic field reconstruction using vector Slepian functions, **A. Plattner**, F. J. Simons, *Symposium on Study of the Earth's Deep Interior*, Leeds, United Kingdom, July 2012

Spatiospectral concentration of vector fields on a sphere, **A. Plattner**, F. J. Simons, *Challenges in Geometry, Analysis, and Computation: High-Dimensional Synthesis*, New Haven, CT, June 2012

Vector spherical Slepian functions – spatiospectral concentration of vector fields on the sphere, **A. Plattner**, F. J. Simons, L. Wei, *AGU Fall Meeting*, San Francisco, CA, Dec 2011

Co-authored (non-student) presentations since 8/2018

H.F. Rogers, C. Beggan, K. Whaler, and **A. Plattner** (2022), Investigating regional heterogeneity at the core-mantle boundary and its impact on outer core flow by applying spherical Slepian functions *SEDI Meeting*, Zürich, Switzerland, Jul 2022. *Poster*

D. Pederson, N. Jones, A. Shgoren, **A. Plattner**, S. Godsey, C. Atkinson, J. Bernstead (2022). Detangling Tanglewood: Three-dimensional Hydrologic Connectivity in a Coastal Plain Headwater Stream. *Joint Aquatic Science Meeting*, Grand Rapids, MI, May 2022. *Poster*

D. Peterson, C. N. Jones, **A.M. Plattner**, A. Shogren, S. Godsey, C. Atkinson, J. Benstead (2022), Detangling Tanglewood: Characterizing vertical, horizontal, and longitudinal hydrologic connectivity in a Coastal Plain headwater stream. *Mississippi Water Resources Conference*, Startkville, MS, Apr 2022. *Oral*

S. Filoromo, **A. Plattner** and E. Blair (2022), Building Community in Moundville's Chiefdom: New Insights from Geophysical Investigations of the Late Mississippian Platform Mound at Snow's Bend (1Tu2/3). *Society for American Archaeology Annual Meeting*, Chicago, IL, Mar 2022. *Oral*

D. Peterson, C. N. Jones, **A.M. Plattner**, A. Shogren, S. Godsey, C. Atkinson, J. Benstead (2021), Drivers of vertical, horizontal, and longitudinal hydrologic connectivity in a non-perennial Coastal Plain stream. *AGU Fall Meeting*, New Orleans, LA, Dec 2021. *Poster*

R. Cajigas, **A. Plattner**, E. H. Blair (2021), Geoarchaeological investigations at Mound Z, Moundville, Alabama (1TU500). *Geological Society of America*, Portland, OR, Oct 2021. *Poster*

R. I. Citron, M. Manga, D. Hemingway and **A. M. Plattner** (2021), Are we visiting the coastlines of Mars? Load-corrected paleo-ocean levels at Jezero, Oxia Planum, and Gale, *52nd Lunar and Planetary Science Conference 2021*, Online, March 2021. *Oral*

Localized High-Latitude Inversion of GRACE Level-1 Data Using Slepian Functions, C. Harig, Y. Zhang, C.K. Shum, **A. Plattner** *AGU Fall Meeting*, San Francisco, CA, Dec 2019. *Poster*

Regionalized properties of the lowermost mantle from spherical Slepian analysis, T. M. Olugboji, P. Moulik, **A. Plattner**, V. Lekic *AGU Fall Meeting*, San Francisco, CA, Dec 2019. *Oral*

Regionalized Properties of the Lowermost Mantle From Spherical Slepian Analysis, T. M. Olugboji, P. Moulik, **A. Plattner**, V. Lekic *SSA Annual Meeting*, Seattle, WA, Apr 2019. *Poster*

3D numerical models of thermal convection inside Triton's icy shell, G. Golabek, F. Nimmo, T. Gerya, P. Schenk, **A. Plattner** *EGU Annual Meeting*, Vienna (AT), Apr 2019. *Poster*

3D numerical models of thermal convection inside Triton's icy shell G. Golabek, F. Nimmo, T. Gerya, P. Schenk, **A. Plattner** *AGU Fall Meeting*, Washington DC, Dec 2018. *Poster*

Teaching:

2018 – today: Department of Geological Sciences, University of Alabama
"Introduction Geophysics"
"Hazardous Earth"
"The Dynamic Earth"

2014 – 2018: Department of Earth and Environmental Science, CSU Fresno
"Applied Geophysics"
"Natural Disasters and Earth Resources"
"Geoscientific Computing"
"Geophysics Seminar"
"Environmental Earth and Life Science"

2011–2013: Department of Geosciences, Princeton University
Instructor for Earth's environments and ancient civilizations"

2006–2011: Department of Earth Sciences, ETH Zurich
Teaching assistant for "Numerical modeling in applied geophysics"
Teaching assistant for field courses (electromagnetic prospecting)

2004–2006: Department of Mathematics, University of Basel
Teaching assistant for "Mathematics for natural scientists"
Teaching assistant for "Linear algebra"

Advising:

PhD Students:
Rezvan Soltanabadi, 2022–present

MS Students:
Ramon Richardson, 2020–present
Alyssa Mills, 2019–present
Yagmur Yilmaz, 2019–2021
Michaela May, 2020–2021, (not graduated)
Marcus Pacheco, 2017–2019
Christine Liu, 2016–2018

PhD Committee Member Internal:
Hesam Saeidi, 2019–present
Ioannis Kouvatsis, 2019–present
Jordan Faltys, 2018–present
Ashish Kumar, 2019–2021

Virginia Andrews, 2018–2020
Hao Wu, 2019

MS Committee Member Internal:
Kayode Agboola, 2021–present
Steven Filoromo, 2020–2022

External PhD examiner:
Kathrin Seibert, 2018 (University of Siegen, Germany)
Timothy Wiese, 2012 (University of Adelaide, Australia)

External MS examiner:
Tom New, 2022 (University of Cape Town, South Africa)

Service:

Editor for International Journal on Geomathematics (GEM), since 2019

Chaired four NASA panels and served on tree additional panels as panelist (total: 7 panels since 2020)

Reviewed numerous papers since 2010 for the following journals:
Earth and Space Science, *Earth-Sci. Rev.*, *Geophys. J. Int.*, *Geophys. Prospect.*, *Geophys. Res. Lett.*, *Geophysics*, *IEEE T. Signal Proces.*, *Icarus*, *Intern. J. Geomath.*, *Int. J. Speleol.*, *J. Appl. Geophys.*, *J. Geodesy*, *J. Geophys. Res.*, *Mech. Res. Commun.*, *Pure Appl. Geophys.*

Co-organizer of session "Planetary Magnetism and Protoplanetary Disk Magnetism" at AGU Fall Meeting 2022

Principal organizer of session "Planetary Magnetism" at AGU Fall Meeting 2020 and 2021

Co-organized and chaired session "Planetary Magnetism and Core Processes: Earth and Beyond" at AGU FAll Meeting 2019

Principal organizer of session "Geodetic and Magnetic Investigations of Crust and Mantle of Earth and Other Planetary Bodies" at AGU Fall Meeting 2018

Co-organized and chaired session "GP34A: Planetary Magnetism and Gravity" at AGU Fall Meeting 2017.

Co-organized and chaired session "GP009: Imaging the crust using magnetic, gravity and electromagnetic methods" at AGU Fall Meeting 2016.

Co-organized "Forward and Inverse Problems in Geodesy, Geodynamics, and Geomagnetism" at SIAM Conference on Mathematical and Computational Issues in the Geosciences, July 2015.

Spring 2016: Appeared on the radio show "Science, a candle in the dark" on KFCF´ `https://itunes.apple.com/us/podcast/science-candle-in-dark-podcast/id972796179` and Presented at the local Café Scientifique `https://valleycafesci.wordpress.com/`

Abstracts since Fall 2018:

A. Plattner, A. C. Mills, C. L. Johnson, M. J. Styczinski, S. D. Vance (2022), Revisiting Constraints on Ganymede's Dynamo from Spacecraft Magnetic Field Data, *AGU Fall Meeting*, Chicago, IL and Online, Dec 2022

H. F. .Rogers, C. Beggan, K. Whaler, and **A. Plattner** (2022), Investigating regional heterogeneity at the core-mantle boundary and its impact on outer core flow by applying spherical Slepian functions *SEDI Meeting*, Zürich, Switzerland, Jul 2022.

D. Pederson, N. Jones, A. Shgoren, **A. Plattner**, S. Godsey, C. Atkinson, J. Bernstead (2022). Detangling Tanglewood: Three-dimensional Hydrologic Connectivity in a Coastal Plain Headwater Stream. *Joint Aquatic Science Meeting*, Grand Rapids, MI, May 2022.

A. M. Plattner, A. C. Mills, C. L. Johnson (2022), How Dipole-Dominant is Ganymede's Core Field? *53rd Lunar and Planetary Science Conference*, The Woodlands, TX, March 2022

S. Filoromo, **A. Plattner** and E. Blair (2022), Building Community in Moundville's Chiefdom: New Insights from Geophysical Investigations of the Late Mississippian Platform Mound at Snow's Bend (1Tu2/3). *Society for American Archaeology Annual Meeting*, Chicago, IL, Mar 2022.

D. Peterson, C. N. Jones, **A.M. Plattner**, A. Shogren, S. Godsey, C. Atkinson, J. Benstead (2022), Detangling Tanglewood: Characterizing vertical, horizontal, and longitudinal hydrologic connectivity in a Coastal Plain headwater stream. *Mississippi Water Resources Conference*, Startkville, MS, Apr 2022.

R. Cajigas, **A. Plattner**, E. H. Blair (2021), Geoarchaeological investigations at Mound Z, Moundville, Alabama (1TU500). *Geological Society of America*, Portland, OR, Oct 2021

D. Peterson, C. N. Jones, **A.M. Plattner**, A. Shogren, S. Godsey, C. Atkinson, J. Benstead (2021), Drivers of vertical, horizontal, and longitudinal hydrologic connectivity in a non-perennial Coastal Plain stream. *AGU Fall Meeting*, New Orleans, LA, Dec 2021

A. M. Plattner, S. Filoromo. E. H. Blair (2021), Geophysical Investigation of a Native-American Mound using Time-Domain Induced Polarization, *AGU Fall Meeting*, New Orleans, LA, Dec 2021

R. I. Citron, M. Manga, D. Hemingway and **A. M. Plattner** (2021), Are we visiting the coastlines of Mars? Load-corrected paleo-ocean levels at Jezero, Oxia Planum, and Gale, *52nd Lunar and Planetary Science Conference 2021*, Online, March 2021

A. Plattner, C. Johnson (2021), Non-axisymmetric structure in Mercury's core field, *Annual Meeting of the Mercury Exploration Assessment Group (MExAG)*, Online, Feb, 2021

A. Plattner, C. L. Johnson (2020), Local magnetic field power spectrum from local data, *AGU Fall Meeting*, Online, Dec 2020

A. Plattner, G. M. Stock, D. H. Rood, C. J. Pluhar (2020), Near-Surface Geophysical Tomography of the Royal Arches Meadow Rock Avalanche in Yosemite Valley, California, M. Pacheco, *AGU Fall Meeting*, Online, Dec 2020 (invited)

A. C. Mills, **A. M. Plattner** (2021), Regional Power Spectral Estimation with Application to Galileo Data for Ganymede, *51st Lunar and Planetary Science Meeting*, Online, March 2021

A. M. Plattner (2020), GPRPy: Open-source GPR processing and visualization for education and research, *GPR2020, 18th International Conference on GroundPenetrating Radar*, postponed because of the COVID pandemic

C. Harig, Y. Zhang, C.K. Shum, **A. Plattner** (2019), Localized High-Latitude Inversion of GRACE Level-1 Data Using Slepian Functions, *AGU Fall Meeting*, San Francisco, CA, Dec 2019

A. Plattner, C. L. Johnson (2019), Mercury's Large-Scale Non-Axisymmetric Internal Field from MESSENGER Data, *AGU Fall Meeting*, San Francisco, CA, Dec 2019

T. M. Olugboji, P. Moulik, **A. Plattner**, V. Lekic (2019), Regionalized properties of the lowermost mantle from spherical Slepian analysis, *AGU Fall Meeting*, San Francisco, CA, Dec 2019

A. Plattner, G. Stock, C. Pluhar (2019), Three-dimensional Geophysical Imaging of the Royal Arches Meadow Rock Avalanche in Yosemite Valley, California, M. Pacheco, *AGU Fall Meeting*, San Francisco, CA, Dec 2019

M. Pacheco, **A. Plattner** (2019), Geophysical Investigation of the Royal Arches Meadow Rock Avalanche in Yosemite Valley - CA, *GSA Cordilleran Meeting*, Portland OR, May 2019

T. M. Olugboji, P. Moulik, **A. Plattner**, V. Lekic (2019), Regionalized Properties of the Lowermost Mantle From Spherical Slepian Analysis, *SSA Annual Meeting*, Seattle, WA, April 2019

A. Plattner, C. L. Johnson (2019), Large-Scale Non-Axisymmetric Internal Structure or Mercury's Magnetic Field, *50th Lunar and Planetary Science Conference*, The Woodlands, TX, March 2019

G. Golabek, F. Nimmo, T. Gerya, P. Schenk, **A. Plattner** (2019), 3D numerical models of thermal convection inside Triton's icy shell, *EGU Annual Meeting*, Vienna (AT), Apr 2019

G. Golabek, F. Nimmo, T. Gerya, P. Schenk, **A. Plattner** (2018), 3D numerical models of thermal convection inside Triton's icy shell *AGU Fall Meeting*, Washington DC, Dec 2018

A. Plattner (2018), Ground Penetrating Radar Data Processing and Visualization using GPRPy, *AGU Fall Meeting*, Washington DC, Dec 2018

A. Plattner, C. L. Johnson (2018), Mercury's Core Field: Beyond the Offset Axial Dipole, *AGU Fall Meeting*, Washington DC, Dec 2018

C. Liu, **A. Plattner**, G. Stock (2018), Near Surface Geophysical Imaging of the Internal Structure of El Capitan Meadow Rock Avalanche in Yosemite National Park, California, *AGU Fall Meeting*, Washington DC, Dec 2018