

GREGOR J. GOLABEK

Bayerisches Geoinstitut - University of Bayreuth
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EDUCATION

2007 - 2010	ETH Zürich, Zürich, Switzerland <i>Ph.D. in Sciences</i> , November 2010 Thesis: <i>Numerical models of terrestrial core formation and early planetary evolution</i> Advisors: Prof. Dr. Paul Tackley & Prof. Dr. Taras Gerya
2004 - 2007	Goethe University Frankfurt, Frankfurt am Main, Germany <i>Diplom (M.Sc.) in Geophysics</i> , April 2007 Minor subjects: Physics, Geology & Astrophysics Thesis: <i>Earth's core formation: Laboratory experiments and numerical models on the percolation mechanism and the Rayleigh-Taylor instability</i> Advisors: Prof. Dr. Harro Schmeling & Dr. Nikolai Bagdassarov
02-03/2005	Max Planck Institute for Solar System Research, Katlenburg-Lindau, Germany <i>Scientific internship</i>
2002 - 2004	Goethe University Frankfurt, Frankfurt am Main, Germany <i>Vordiplom (B.Sc.) in Geophysics</i> , June 2004
1993 - 2002	Gymnasium (High School), Titisee-Neustadt, Germany <i>Abitur (University-entrance diploma)</i> , June 2002

PERSONAL DATA

Date of birth:	December 2, 1982.
Place of birth:	Gdynia, Poland.
Citizenships:	German & Polish.

PROFESSIONAL EXPERIENCE

03/2015 - present	Bayerisches Geoinstitut, Univ. of Bayreuth, Bayreuth, Germany <i>Associate Professor</i>
01/2013 - 02/2015	ETH Zürich, Zürich, Switzerland <i>Oberassistent/Senior Researcher</i>
04/2012 - 12/2012	ETH Zürich, Zürich, Switzerland <i>Researcher</i>
2011 - 2012	ENS de Lyon, Lyon, France <i>Postdoctoral research fellow</i>
2007 - 2011	ETH Zürich, Zürich, Switzerland <i>Teaching assistant</i>
2005 - 2007	Goethe University Frankfurt, Frankfurt am Main, Germany <i>Undergraduate teaching assistant</i>

RESEARCH STAYS

08/2012, 07/2013 08/2014, 08/2015	Department of Earth and Planetary Sciences, <i>University of California Santa Cruz</i> , Santa Cruz, CA, USA
07/2012	Yokohama Institute for Earth Sciences, <i>Japan Agency for Marine-Earth Science and Technology</i> , Yokohama, Japan
09/2006	Department of Earth Sciences, <i>Uppsala University</i> , Uppsala, Sweden

PUBLICATIONS

Peer reviewed:

Dorn, C., **G. J. Golabek** and D. Bower (2025). Interior-atmosphere interactions for terrestrial Solar System objects, Super-Earths and Sub-Neptunes. *Handbook of Exoplanets 2nd ed.*, in press.

McGregor, N. J., F. Nimmo, C. Gillmann, **G. J. Golabek**, A. M. Plattner and J. W. Conrad (2025). Probing the viscosity of Venus's mantle from dynamic topography at Baltis Vallis. *J. Geophys. Res. Planets* 130, e2024JE008581.

Rubie, D. C., K. I. Dale, G. Nathan, M. Nakajima, E. S. Jennings, **G. J. Golabek**, S. A. Jacobson and A. Morbidelli (2025). Tungsten isotope evolution during Earth's formation and new constraints on the viability of accretion simulations. *Earth Planet. Sci. Lett.* 651, 119139.

- Hamano, K., C. Gillmann, **G. J. Golabek**, D. Lourenço and F. Westall (2025). The evolutionary divergence of Mars, Venus and Earth. *Treatise on Geochemistry 3rd ed.* Vol. 7, 541-574.
- Gillmann, C., G. N. Arney, G. Avice, M. D. Dyar, **G. J. Golabek**, A. J. P. Gülcher, N. M. Johnson, M. Lefèvre and T. Widemann (2025). Venus. *Treatise on Geochemistry 3rd ed.* Vol. 7, 289-323.
- Paul, J., **G. J. Golabek**, A. B. Rozel, P. J. Tackley, T. Katsura and H. Fei (2024). Effect of bridgmanite-ferropericlasite grain size evolution on Earth's average mantle viscosity: Implications for mantle convection in early and present-day Earth. *Prog. Earth Planet. Sc.* 11, 64.
- Fujita, W., M. Nakamura, K. Uesugi, P. Eichheimer, M. Thielmann and **G. J. Golabek** (2024). Imaging flow focusing and isolation of aqueous fluids in synthetic quartzite: Implications for permeability and retained fluid fraction in deep-seated rocks. *Prog. Earth Planet. Sc.* 11, 40.
- Cheng, K. W., H. A. Ballantyne, **G. J. Golabek**, M. Jutzi, A. B. Rozel and P. J. Tackley (2024). Combined impact and interior evolution models in three dimensions indicate a southern impact origin of the Martian Dichotomy. *Icarus* 420, 116137.
- Cheng, K. W., A. B. Rozel, **G. J. Golabek**, H. Ballantyne, M. Jutzi and P. J. Tackley (2024). Mars's crustal and volcanic structure explained by southern giant impact and resulting mantle depletion. *Geophys. Res. Lett.* 51, e2023GL105910.
- Kislyakova, K. G., L. Noack, E. Sanchis, L. Fossati, G. G. Valyavin, **G. J. Golabek** and M. Güdel (2023). Induction heating of planetary interiors in white dwarf systems. *Astron. Astrophys.* 677, A109.
- Dale, K. I., D. C. Rubie, M. Nakajima, S. Jacobson, G. Nathan, **G. J. Golabek**, S. Cambioni and A. Morbidelli (2023). An improved model of metal/silicate differentiation during Earth's accretion. *Icarus* 406, 115739.
- Walte, N. P., C. M. Howard and **G. J. Golabek** (2023). Mantle fragmentation and incomplete core merging of colliding planetesimals as evidenced by pallasites. *Earth Planet. Sci. Lett.* 617, 118247.
- Ballantyne, H., M. Jutzi, **G. J. Golabek**, L. Mishra, K. W. Cheng, A. Rozel and P. J. Tackley (2023). Investigating the feasibility of an impact-induced Martian Dichotomy. *Icarus* 392, 115395.
- Gillmann, C., M. J. Way, G. Avice, D. Breuer, **G. J. Golabek**, D. Höning, J. Krissansen-Totton, H. Lammer, A.-C. Plesa, M. Persson, J. G. O'Rourke, A. Salvador, M. Scherf and M. Y. Zolotov (2022). The long-term evolution of the atmosphere of Venus: Processes and feedback mechanisms. *Space Sci. Rev.* 218, 56.
- Gülcher, A. J. P., **G. J. Golabek**, M. Thielmann, M. D. Ballmer and P. J. Tackley (2022). Narrow, fast, and "cool" mantle plumes caused by strain-weakening rheology in Earth's lower mantle. *Geochem. Geophys. Geosyst.* 23, e2021GC010314.
- Eberhard, L., M. Thielmann, P. Eichheimer, A. Néri, A. Suzuki, W. Fujita, K. Uesugi, M. Nakamura, **G. J. Golabek** and D. J. Frost (2022). A new method for determining fluid flux at high pressures applied to the dehydration of subduction zone serpentinites. *Geochem. Geophys. Geosyst.* 23, e2021GC010062.

- Walte, N. P. and **G. J. Golabek** (2022). Olivine aggregates of main group pallasites reveal the early evolution of their parent body. *Meteorit. Planet. Sci.* 57, 1098-1115.
- Nakajima, M., **G. J. Golabek**, K. Wünnemann, D. C. Rubie, C. Burger, H. J. Melosh, S. A. Jacobson, L. Manske and S. D. Hull (2021). Scaling laws for the geometry of an impact-induced magma ocean. *Earth Planet. Sci. Lett.* 568, 116983.
- Golabek, G. J.** and M. Jutzi (2021). Modification of icy planetesimals by early thermal evolution and collisions: Constraints for formation time and initial size of comets and small KBOs. *Icarus* 363, 114437.
- Lichtenberg, T., J. Drażkowska, M. Schönbächler, **G. J. Golabek** and T. O. Hands (2021). Bifurcation of planetary building blocks during Solar System formation. *Science* 371, 365-370.
- Schierjott, J. C., M. Thielmann, A. B. Rozel, **G. J. Golabek** and T. V. Gerya (2020). Can grain size reduction initiate transform faults? - Insights from a 3D numerical study. *Tectonics* 39, e2019TC005793.
- Marzotto, E., W.-P. Hsieh, T. Ishii, K.-H. Chao, **G. J. Golabek**, M. Thielmann and E. Ohtani (2020). Effect of water on lattice thermal conductivity and its implications for the thermal evolution of descending slabs. *Geophys. Res. Lett.* 47, e2020GL087607.
- Walte, N. P., G. F. D. Solferino, **G. J. Golabek**, D. Silva Souza and A. Bouvier (2020). Two-stage evolution of a pallasite parent body revealed by novel deformation experiments. *Earth Planet. Sci. Lett.* 546, 116419.
- Eichheimer, P., M. Thielmann, W. Fujita, **G. J. Golabek**, M. Nakamura, S. Okumura, T. Nakatani and M. O. Kottwitz (2020). Combined numerical and experimental study of microstructure and permeability in porous granular media. *Solid Earth* 11, 1079-1095.
- Gillmann, C., **G. J. Golabek**, S. Raymond, P. J. Tackley, M. Schönbächler, V. Dehant and V. Debaille (2020). Dry late accretion inferred from Venus's coupled atmosphere and internal evolution. *Nat. Geosci.* 13, 265-269.
- Thielmann, M., **G. J. Golabek** and H. Marquardt (2020). Ferropericlase control of lower mantle rheology: Impact of phase morphology. *Geochem. Geophys. Geosyst.* 21, e2019GC008688.
- Eichheimer, P., M. Thielmann, A. Popov, **G. J. Golabek**, W. Fujita, M. O. Kottwitz and B. J. P. Kaus (2019). Pore-scale permeability prediction for Newtonian and non-Newtonian fluids. *Solid Earth* 10, 1717-1731.
- Keppler, H. and **G. J. Golabek** (2019). Graphite floatation on a magma ocean and the fate of carbon during planetary core formation. *Geochem. Persp. Lett.* 11, 12-17.
- Lichtenberg, T., **G. J. Golabek**, R. Burn, M. R. Meyer, Y. Alibert, T. V. Gerya and C. A. Mordasini (2019). A water budget dichotomy of rocky protoplanets from ^{26}Al heating. *Nat. Astron.* 3, 307-313.
- Lichtenberg, T., T. Keller, R. F. Katz, **G. J. Golabek** and T. V. Gerya (2019). Magma ascent in planetesimals: Control by grain size. *Earth Planet. Sci. Lett.* 507, 154-165.
- Solferino, G. F. D. and **G. J. Golabek** (2018). Olivine grain growth in partially molten Fe-Ni-S: A proxy for the genesis of pallasite meteorites. *Earth Planet. Sci. Lett.* 504, 38-52.

- Monteux, J., **G. J. Golabek**, D. C. Rubie, G. Tobie and E. D. Young (2018). Water and the interior structure of terrestrial planets and icy bodies. *Space Sci. Rev.* 214, 39.
- Hunt, A. C., D. L. Cook, T. Lichtenberg, P. M. Reger, M. Ek, **G. J. Golabek** and M. Schönbächler (2018). Late metal-silicate separation on the IAB parent asteroid: Constraints from combined W and Pt isotopes and thermal modelling. *Earth Planet. Sci. Lett.* 482, 490-500.
- Lichtenberg, T., **G. J. Golabek**, C. P. Dullemond, T. V. Gerya and M. Schönbächler (2018). Impact splash chondrule formation during planetesimal recycling. *Icarus* 302, 27-43.
- Golabek, G. J.**, A. Emsenhuber, M. Jutzi, E. I. Asphaug and T. V. Gerya (2018). Coupling SPH and thermochemical models of planets: Methodology and example of a Mars-sized body. *Icarus* 301, 235-246.
- Rozel, A. B., **G. J. Golabek**, C. Jain, P. J. Tackley and T. V. Gerya (2017). Continental crust formation on early Earth controlled by intrusive magmatism. *Nature* 545, 332-335.
- Lichtenberg, T., **G. J. Golabek**, T. V. Gerya and M. R. Meyer (2016). The effects of short-lived radionuclides and porosity on the early thermo-mechanical evolution of planetesimals. *Icarus* 274, 350-365.
- Gillmann, C., **G. J. Golabek** and P. J. Tackley (2016). Effect of a single large impact on the coupled atmosphere-interior evolution of Venus. *Icarus* 268, 295-312.
- Rozel A., **G. J. Golabek**, R. Näf and P. J. Tackley (2015). Formation of ridges in a stable lithosphere in mantle convection models with a visco-plastic rheology. *Geophys. Res. Lett.* 42, 4770-4777.
- Solferino, G. F. D., **G. J. Golabek**, F. Nimmo and M. W. Schmidt (2015). Fast grain growth of olivine in liquid Fe-S and the formation of pallasites with rounded olivine grains. *Geochim. Cosmochim. Acta* 162, 259-275.
- Consolmagno G. J., **G. J. Golabek**, D. Turrini, M. Jutzi, S. Sirono, V. Svetsov and K. Tsiganis (2015). Is Vesta an intact and pristine protoplanet? *Icarus* 254, 190-201.
- Golabek, G. J.**, B. Bourdon and T. V. Gerya (2014). Numerical models of the thermomechanical evolution of planetesimals: Application to the acapulcoite-lodranite parent body. *Meteorit. Planet. Sci.* 49, 1083-1099.
- Rozel, A., J. Besserer, **G. J. Golabek**, M. Kaplan and P. J. Tackley (2014). Self-consistent generation of single-plume state for Enceladus using non-Newtonian rheology. *J. Geophys. Res. Planets* 119, 416-439.
- Morishima, R., **G. J. Golabek** and H. Samuel (2013). N-body simulations of oligarchic growth of Mars: Implications for Hf-W chronology. *Earth Planet. Sci. Lett.* 366, 6-16.
- Tkalcec, B. J., **G. J. Golabek** and F. E. Brenker (2013). Solid-state plastic deformation in the dynamic interior of a differentiated asteroid. *Nat. Geosci.* 6, 93-97.
- Cramer, F., H. Schmeling, **G. J. Golabek**, T. Duretz, R. Orendt, S. Buiter, D. A. May, B. J. P. Kaus, T. V. Gerya and P. J. Tackley (2012). A comparison of numerical surface topography calculations in geodynamical modelling: an evaluation of the 'sticky air' method. *Geophys. J. Int.* 189, 38-54.

Golabek, G. J., T. Keller, T. V. Gerya, G. Zhu, P. J. Tackley and J. A. D. Connolly (2011). Origin of the Martian dichotomy and Tharsis from a giant impact causing massive magmatism. *Icarus* 215, 346-357.

Lin, J.-R., T. V. Gerya, P. J. Tackley, D. A. Yuen and **G. J. Golabek** (2011). Protocore destabilization in planetary embryos formed by cold accretion: Feedbacks from non-Newtonian rheology and energy dissipation. *Icarus* 213, 24-42.

Golabek, G. J., T. V. Gerya, B. J. P. Kaus, R. Ziethe and P. J. Tackley (2009). Rheological controls on the terrestrial core formation mechanism. *Geochem. Geophys. Geosyst.* 10, Q11007.

Bagdassarov, N., **G. J. Golabek**, G. Solferino and M.W. Schmidt (2009). Constraints on the Fe-S melt connectivity in mantle silicates from electrical impedance measurements. *Phys. Earth Planet. Int.* 177, 139-146.

Bagdassarov, N., G. Solferino, **G. J. Golabek** and M.W. Schmidt (2009). Centrifuge assisted percolation of Fe-S melts in partially molten peridotite: Time constraints for planetary core formation. *Earth Planet. Sci. Lett.* 288, 84-95.

Lin, J.-R., T. V. Gerya, P. J. Tackley, D. A. Yuen and **G. J. Golabek** (2009). Numerical modeling of protocore destabilization during planetary accretion: methodology and results. *Icarus* 204, 732-748.

Schmeling, H., A. Y. Babeyko, A. Enns, C. Faccenna, F. Funiciello, T. V. Gerya, **G. J. Golabek**, S. Grigull, B. J. P. Kaus, G. Morra, S. M. Schmalholz and J. van Hunen (2008). A benchmark comparison of spontaneous subduction models - towards a free surface. *Phys. Earth Planet. Int.* 171, 198-223.

Golabek, G. J., H. Schmeling and P. J. Tackley (2008). Earth's core formation aided by flow channelling induced by iron diapirs. *Earth Planet. Sci. Lett.* 271, 24-33.

Submitted:

Néri, A., E. Kubik, **G. J. Golabek**, A. Bouvier and N. P. Walte, On the peculiar separation of metal and troilite pockets in acapulcoites. *Meteorit. Planet. Sci.*

Other:

Golabek, G. J. (2010). Numerical models of terrestrial core formation and early planetary evolution. *Ph.D. thesis*, ETH Zürich, 212 pp.

Golabek, G. J. (2007). Earth's core formation: Laboratory experiments and numerical models on the percolation mechanism and the Rayleigh-Taylor instability. *M.Sc. thesis*, Univ. Frankfurt, 160 pp.

SEMINARS

2025

Univ. Lille.

2024

ETH Zürich, Univ. Alabama.

2023	Blaauw Workshop, ETH Zürich.
2022	FU Berlin, ETH Zürich, MfN Berlin, Univ. Groningen.
2020	Univ. Glasgow, Univ. Frankfurt.
2019	Univ. Bern, Univ. Rochester, Univ. Alabama, Univ. Bordeaux, Royal Holloway Univ. London.
2018	LMU Munich, Scripps/UC San Diego, FU Berlin, Univ. Oslo, Tohoku Univ., Univ. Oxford.
2017	Gordon Research Conference, Northwestern Univ., Univ. Chicago, Carnegie Institution for Science, UC Davis, Stanford Univ., MIRA Volatiles Workshop.
2016	ISSI Bern, Tohoku Univ., ELSI/Tokyo Tech., Univ. Lausanne.
2015	ELSI/Tokyo Tech., Joint Workshop on High Pressure, Planetary and Plasma Physics, FKPE Meeting, Charles Univ. Prague.
2014	Univ. Bayreuth, Univ. Bern, Univ. Mainz, ACCRETE workshop, Goldschmidt, CSU Fresno, Univ. Frankfurt am Main, Univ. Oslo.
2013	UC San Diego/Scripps.
2012	DLR Berlin, JAMSTEC Yokohama, UC Santa Cruz, Univ. Lyon.
2011	StFX Univ. Antigonish, AGU.
2010	ENS de Lyon, EPSC.
2007	ETH Zürich.

TEACHING EXPERIENCE

2015 - present	Bayerisches Geoinstitut, University of Bayreuth (as Associate Professor): <i>Geodynamics</i> <i>Planetary Physics</i> <i>General Geology</i> <i>Geodynamical Modelling</i> <i>Finite Difference Method</i> <i>Seminar series Experimental Geochemistry and Geophysics</i> <i>Planetary Formation Special Topics</i> (with A. Bouvier)
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2012 - 2015	ETH Zürich (as Researcher/Senior Researcher): <i>Topics in Planetary Sciences</i> (with A. Khan & M. Schönbachler) <i>Planetary Physics and Chemistry</i> <i>Geophysical Field Course</i> (with D. May) <i>Geophysical Fluid Dynamics Seminar</i>
2011 - 2012	ENS de Lyon (as Research Associate): <i>Core and Mantle Dynamics</i> (with N. Coltice)
2007 - 2011	ETH Zürich (as Teaching assistant): <i>Planetary Physics and Chemistry</i> (with F. Deschamps & P. Tackley) <i>Dynamics of the Mantle and Lithosphere</i> (with B. Kaus) <i>Geophysical Field Course</i> (with F. Deschamps & B. Kaus)
2005 - 2007	Goethe University Frankfurt (as Teaching assistant): <i>Geophysics I. & II.</i> (with H. Schmeling) <i>Rock Physics</i> (with N. Bagdassarov)

SUPERVISION

Rezvan Soltanabadi (*Ph.D. student, 2022-present*). The Magnetic Fields of Mars and Ganymede: Insights from Local Data Analysis. Univ. Alabama (main supervisor: A.M. Plattner).

Matteo Zippoli (*semester project student, 2024-present*). Formation of mesosiderites. BGI Bayreuth (with A. Bouvier and N. Walte).

Matteo Zippoli (*semester project student, 2023-2024*). Post-impact thermal evolution of iron-rich planetesimals. BGI Bayreuth (with S. Raducan and M. Jutzi).

Jyotirmoy Paul (*Postdoc, 2021-2024*). Grain size evolution in Earth's lower mantle. BGI Bayreuth (with T. Katsura).

Kar Wai Cheng (*Ph.D. student, 2018-2023*). Mantle convection models of Mars: Formation of the crustal dichotomy and the effects of a potential basal magma ocean. ETH Zürich (with P. J. Tackley & M. Jutzi).

Anna Gülcher (*Ph.D. student, 2018-2022*). Primordial and rheological heterogeneity in Earth's lower mantle and implications for global-scale mantle dynamics. ETH Zürich (with M. D. Ballmer & P. J. Tackley).

Darja Andrejeva (*semester project student, 2022*). Deformation of ferropericlasite inclusions in Earth's lower mantle. BGI Bayreuth (with M. Thielmann).

Harry Ballantyne (*Ph.D. student, 2018-2022*). Planetary-Scale Impacts and their Geophysical Consequences. Univ. Bern (with M. Jutzi).

Enrico Marzotto (*Ph.D. student, 2017-2021*). A Combined Study on Earth's Deep Water Cycle using Numerical Modelling and Laboratory Experiments. BGI Bayreuth (with M. Thielmann).

Wakana Fujita (*Ph.D. student, 2017-2021*). Fluid segregation and chemical compaction in deep-seated rocks: A combined experimental and digital rock physics approach. Tohoku Univ. (main supervisor M. Nakamura).

Xiaoyu Wang (*semester project student, 2020-2021*). Early Thermal Evolution of Icy Planetesimals. BGI Bayreuth (with M. Jutzi & M. Thielmann).

Lisa Eberhard (*Ph.D. student, 2017-2020*). Serpentinite phase relations - An experimental study on redox conditions and fluid migration in subduction zones. (main supervisor D. Frost).

Rizaldi Putra (*semester project student, 2019-2020*). Analysis of pumice clasts using image processing. BGI Bayreuth (with M. Thielmann, M. Nakamura).

Philipp Eichheimer (*Ph.D. student, 2016-2020*). Fluid flow in porous media: A combined numerical and experimental approach. BGI Bayreuth (with M. Thielmann).

Jana Schierjott (*Ph.D. student, 2015-2019*). Influence of grain size evolution on global and regional mantle convection models. ETH Zürich (main supervisor P. J. Tackley).

Danielle Silva-Souza (*semester project student, 2019*). Petrological and geochemical study of Seymchan pallasite meteorite, and experimental constraints on the formation of pallasites. BGI Bayreuth (with A. Bouvier & N. Walte).

Rebecca Karlsson (*M.Sc., 2018-2019*). Numerical modelling of Venus' mantle: the role of cratons in lithospheric overturns. Univ. Oslo (main supervisor S. Werner).

Victoria Szlachta (*semester project student, 2018-2019*). Thermomechanical evolution of comets. BGI Bayreuth (with M. Jutzi & M. Thielmann).

Babs Doodkorte (*M.Sc., 2017-2018*). Numerical Modelling of Impact-Related Origin of the Caloris Basin on Mercury. ETH Zürich (with T. V. Gerya & M. Jutzi).

Kar Wai Cheng (*M.Sc., 2017-2018*). Venus, Cratons and Overturns: Insights from Global Thermochemical Convection Models on Episodic Regime. ETH Zürich (with A. B. Rozel).

Tim Lichtenberg (*Ph.D., 2014-2018*). Thermal Evolution of Forming Planets, Isotope Enrichment, Differentiation & Volatile Retention. ETH Zürich (with R. Parker, M. R. Meyer & T. V. Gerya).

Matteo Urgese (*semester project student, 2017-2018*). The effect of an interconnected weak layer network on lower mantle dynamics. BGI Bayreuth (with M. Thielmann & H. Marquardt).

Diogo Lourenço (*Ph.D., 2012-2017*). The influence of melting on the thermo-chemical evolution of rocky planets' interiors. ETH Zürich (main supervisor P. J. Tackley).

Andrea Adams (*M.Sc., 2016-2017*). Viability of Archean Subduction Initiation by Continental Spreading and Plume-Continent Interactions. BGI Bayreuth (with M. Thielmann).

Sourav Misra (*semester project student, 2016*). Heterogeneous layer folding. BGI Bayreuth (with M. Thielmann).

Yang Li (*semester project student, 2015-2016*). A Numerical Parameter Study for the Mixing of the Martian Mantle. BGI Bayreuth (with M. Ballmer).

Irene Bonati (*B.Sc., 2015*). Mantle and lithosphere dynamics of water-trapped exoplanets. ETH Zürich (main supervisor P. J. Tackley).

Marco Carrara (*B.Sc., 2015*). Mantle and lithosphere dynamics of hot super-Earths. ETH Zürich (main supervisor P. J. Tackley).

Rico Näf (*B.Sc., 2014*). Effect of depth-dependent viscosity on plate tectonics in super-Earths. ETH Zürich (main supervisor P. J. Tackley).

Cyrril Bösch (*B.Sc., 2014*). The formation of large low shear-wave velocity provinces by giant impacts. ETH Zürich (main supervisor T. V. Gerya).

Alessandro Lechmann (*B.Sc., 2013*). Mantle convection and lithosphere dynamics in extrasolar Super-Earths. ETH Zürich (main supervisor P. J. Tackley).

Ria Fischer (*M.Sc., 2012*). Adaptive multigrid: How to couple adaptive mesh refinement with the multigrid method and Self-consistent modelling of planetary differentiation and onset of mantle convection on Mars. A comparative study in 2D and 3D. ETH Zürich (main supervisor T. V. Gerya).

Gian-Peider Moll (*B.Sc., 2009*). Influence of giant impactors on the terrestrial core formation. ETH Zürich (main supervisor T. V. Gerya).

AWARDS

2013	Karl Zoeppritz Prize of the German Geophysical Society
2011	ETH Medal for Ph.D. thesis (awarded to < 8 % of ETH graduates)

PROFESSIONAL ACTIVITIES AND AFFILIATIONS

- Scientific reviewer for *Earth and Planetary Science Letters*, *Geochemistry Geophysics Geosystems*, *Geophysical Research Letters*, *Icarus*, *International Journal of Earth Sciences*, *Journal of Geophysical Research - Planets*, *Journal of Geophysical Research - Solid Earth*, *Mantle Convection and Surface Expressions*, *Nature Astronomy*, *Nature Geoscience*, *Physics of the Earth and Planetary Interiors*, *Proceedings of the International Astronomical Union*, *Tectonophysics*, *Encyclopedia of the Solar System & Treatise on Geophysics*

- Reviewer for the *US Science Foundation (NSF)* and the *German Science Foundation (DFG)*
- Member of the external reviewer board for the *MSc Geophysics* study program at *Univ. Kiel*
- Member of the *European Geosciences Union (EGU)*, the *American Geophysical Union (AGU)*, the *German Geophysical Society (DGG)*, the *Forschungskollegium Physik des Erdkörpers (FKPE)*, the *Planet-Z* interdisciplinary initiative on planet formation (2012-2015), the *ISSI research team* on early evolution of Vesta (2013-2015)
- Member of the *Large Interferometer for Exoplanets (LIFE)* mission science team (2022-)
- Guest editor for Icarus special issue *Impact processes and planetary evolution* (2024-)
- Scientific committee member for *ACCRETE Workshop 2017*, Nice
- Co-convenor of session Accretion, Core-Mantle Differentiation and Early Planetary Evolution at *American Geophysical Union Fall Meeting 2012-2016*, with H. Samuel & D. Baratoux
- OSPA Judge at *American Geophysical Union Fall Meeting 2011-2015*
- Member of the executive committee of the *Bayreuth Graduate School of Mathematical and Natural Sciences (BayNAT)*
- Lecturer at *DEEP Intensive Course 2018*, Univ. Oslo
- Secretary General of *Forschungskollegium Physik des Erdkörpers (FKPE)* (2021-2025)
- Spokesman of the German Geophysical Society (DGG) working group *Dynamics of the Earth's interior* (2017-)
- Science officer of *EGU Planetary and Solar System Sciences Division* (2019-2024)
- Co-convenor of session Venus: models, observations, exoplanet analogue at *European Geosciences Union Spring Meeting 2023, 2024*, with C. Gillmann, A. Gülcher, M. Lefevre, M. Persson
- Co-convenor of session Venus at *European Geosciences Union Spring Meeting 2021*, with C. Gillmann, H. Wang, C. Dorn, D. Bower, A. Hunt
- Co-convenor of session Terrestrial Planet Evolution: Interior/exterior coupling, feedbacks and interaction at *European Geosciences Union Spring Meeting 2020*, with C. Gillmann, A. Webb, E. Sizova
- Co-convenor of session Terrestrial Planet Evolution: Interior/exterior coupling, feedbacks and interaction at *European Geosciences Union Spring Meeting 2019*, with C. Gillmann
- Co-convenor of session Open Session on Moon, Mars, Mercury, Venus as terrestrial planets systems at *European Geosciences Union Spring Meeting 2019*, with B. Foing
- Co-convenor of session Terrestrial Planet Evolution: Deep Carbon Cycle and Interior/Exterior coupling at *European Geosciences Union Spring Meeting 2018*, with S. Zahirovic, C. Gillmann et al.
- Co-convenor of session Computational Geodynamics at *European Geosciences Union Spring Meeting 2010*, with B. J. P. Kaus, G. Houseman and C. Thieulot
- Co-convenor of session Multi-disciplinary perspective on coupled planet formation and evolution at *European Planetary Science Congress 2019, 2020*, with L. Noack, M. Ballmer, S. Padovan, A. Hunt et al.

- Co-convenor of session Numerical modelling of planetary dynamics at *European Planetary Science Congress 2015, 2017*, with L. Noack, A. Rozel, J. Besserer and P. J. Tackley
- Co-convenor of session General Planetology at *European Planetary Science Congress 2009, 2012*, with R. Ziethe
- Main organizer of *German-Swiss Geodynamics Workshop 2016*, Lichtenfels
- Co-organizer of *Vesta Workshop 2015*, Nuremberg, with H. Clenet
- Co-organizer of *Workshop on Giant Collisions and their Effects on the Thermochemical Evolution of Planets 2024*, Rochester, with M. Nakajima, K. Wünnemann and D. Breuer
- Co-organizer of *Workshop on Giant Collisions and their Effects on the Thermochemical Evolution of Planets 2018, 2019, 2022*, Berlin, with K. Wünnemann and D. Breuer

GRANTS

- Workshop on Planetary Impacts During the Total Solar Eclipse. *NASA*. Co-Investigator (PI: Miki Nakajima) (2023-2024) - \$ 96,803.
- Chemistry and transport properties of bridgmanite controlling lower-mantle dynamics. *European Research Council*. Co-Investigator (PI: Tomoo Katsura) (2018-2024) - EUR 2,658,186.
- Mars' long-term interior evolution: Combined collision and thermochemical models constrained by InSight results. *Swiss National Science Foundation*. Main collaborator (PIs: Paul Tackley & Martin Jutzi) (2017-2023) - CHF 382,736.
- Next generation high-performance cluster (btrzx2). *German Science Foundation*. Co-PI (main PI: Andreas Grandel, IT Center Univ. Bayreuth) - EUR 461,000.
- International Research Training Group "Deep Earth Volatile Cycles". *German Science Foundation*. Co-PI (main PI: Dan Frost) (2016-2023) - EUR 3,300,000.
- Impact-induced melting, magma ocean evolution and core-mantle differentiation during accretion of the Earth. *German Science Foundation*. Collaborator (main PI: Dave Rubie) (2015-2020) - EUR 250,938.
- Planetary Evolution: Moon as a Case Study of Thermal Evolution. *German Science Foundation*. Collaborator (main PI: Vera Fernandes) (2014-2016) - EUR 195,000.
- Diverse Nature of Forming Planets: A combined Geo-/Astrophysics Approach. *ETH Grant*. Co-PI (main PI: Michael R. Meyer) (2013-2018) - CHF 165,300.
- Accretion and differentiation of planetary bodies. *Swiss National Science Foundation*. PI (2011-2012) - CHF 42,240.