

## *Curriculum Vitae – Jenny Suckale*

### **1. Academic history:**

#### **Education:**

Ph.D., Geophysics, Massachusetts Institute of Technology, 2011.

Dissertation: *Direct numerical simulations of multi-phase flow with applications to basaltic volcanism and planetary evolution.*

Advisor: Linda T. Elkins-Tanton.

M.P.A., Master of Public Administration, Harvard University, Kennedy School of Government, 2006.

Concentration: Science, Technology & Public Policy, and Quantitative Analysis.

Advisor: William Clark.

M.Sc., Physics (with Distinction), Free University Berlin, Germany, 2002.

Concentration: Theoretical Physics, Quantum Field Theory.

Advisor: Felix von Oppen.

#### **Scholarships and honors:**

CAREER Award, National Science Foundation, 2022.

Best Presentation Award for junior female researchers, 14<sup>th</sup> World Congress in Computational Mechanics, December 2020.

PECASE (Presidential Early Career Award in Science and Engineering), Department of Defense, 2019. (PECASE is the highest honor bestowed by the United States government on outstanding scientists and engineers in the early stages of their independent research careers.)

Young Investigator Award, Army Research Office, 2017. (The Young Investigator Program is the early-career program at the Army Research Office, the equivalent to CAREER at NSF.)

Ziff Environmental Fellow, Harvard Center for the Environment, Harvard, 2010.

Miller Research Fellowship (declined), University of California, Berkeley, 2010.

Outstanding Student Paper Award, American Geophysical Union, Fall Meeting, 2008.

Presidential Fellow, Massachusetts Institute of Technology, 2006–2007.

McCloy Scholar, German National Merit Foundation, 2004–2005. (The McCloy Scholarship is the German equivalent to the Rhodes Scholarship. It is granted nationwide to six students per year.)

Scholarship, Robert Bosch and German National Merit Foundation, 2002–2003.

Scholarship, German National Merit Foundation, 1997–2002.

#### **Scholarships and honors awarded to my students:**

Achievement Rewards for College Scientists (ARCS) awarded to Paul Summers, Advancing Science in America, June 2022.

Outstanding Student Paper Award awarded to Indraneel G. Kasmalkar, American Geophysical Union, Fall Meeting, December 2019.

Lieberman fellowship awarded to Cansu Culha, May 2019.

Outstanding Student Paper Award awarded to Indraneel G. Kasmalkar, American Geophysical Union, Fall Meeting, December 2018.

Best presentation at the Young Environmental Scholars (YES) Annual Conference awarded jointly to Indraneel G. Kasmalkar and Katherine A. Serafin, November 2018.

Best undergraduate thesis from the Department of Geophysics awarded to Janine Birnbaum, June 2018.

**Post-doctoral training:**

Ziff Environmental Fellow, Harvard Center for the Environment, Harvard, 2011-2013.

**2. *Employment history:***

since 1/1/2014: Assistant Professor, Department of Geophysics, Stanford University.

Assistant Professor (by courtesy), Institute of Computational and Mathematical Engineering, Stanford University, since 2015.

Assistant Professor (by courtesy), Department of Civil and Environmental Engineering, Stanford University, since 2017.

Affiliated Faculty, Woods Institute for the Environment, Stanford University, since 2017.

Affiliated Faculty, RegLab, Stanford University, since 2020.

07/1/2011–12/31/2013: Lecturer in Applied Mathematics, School of Engineering and Applied Science, Harvard University.

7/1/2003–8/1/2004: Researcher, Seismic Hazards, German Research Centre for Geosciences (GFZ), Potsdam, Germany.

9/1/2002–6/30/2003: Scientific Consultant, Communities at Risk Program, South Pacific Applied Geoscience Commission, Suva, Fiji Islands.

**3. *Public and professional service:***

**Stanford:**

Affiliated faculty, Emmett Interdisciplinary Program in Environment and Resources (EIPER), Stanford University.

Member of the Faculty Steering Committee, Haas Center for Public Service, Stanford University.

Member of the Advisory Committee for the Change Leadership for Sustainability Program at Stanford University.

Pre-major advisor for Stanford undergraduate students.

Service on various committees including the admission committee for EIPER and search committees in both Geophysics and Earth System Science.

**Professional service:**

Member of the Executive Committee for the Focus Group on Natural Hazards, American Geophysical Union.

Reviewer for multiple journals, including Proceedings of the National Academy of Sciences, Nature, Geophysical Research Letters, Journal of Geophysical Research, Physical Review Letters, Physical Review of Fluids, Computers and Geosciences, Tectonophysics, Journal for Volcanology and Geothermal Research, Geosciences, and funding agencies, including the National Science Foundation and the European Research Council.

Co-organizer of the Conference on Mathematical and Computational Issues in the Geosciences, Society of Industrial and Applied Mathematics, Stanford, July 2015.

Session convener at the Fall meeting of the American Geophysical Union.

Co-organizer of mini-symposia at the Conference on Mathematics of Planet Earth, Society of Industrial and Applied Mathematics.

**Public service:**

Faculty-lead of the Stanford Future Bay Initiative, a Research-Education-Practice Partnership dedicated to co-production of actionable intelligence with our local Bay Area communities, in order to shape a more equitable, resilient, and sustainable urban future.

Faculty-lead for the Stanford Integrated Science Curriculum Project in collaboration with the Stanford Center for Assessment, Learning, and Equity (SCALE). The goal of the project is to develop a new science curriculum at the Middle School level that abides by the Next Generation Science Standards and integrates project-based curriculum with embedded performance assessment and instructional supports to achieve greater scientific understanding and practices as well as more equitable outcomes for all students.

Contribution to community-based, interdisciplinary disaster relief projects such as the Sanriku Project, Minamisanriku, Japan and coastal-resilience planning at the Indonesian Ministry of Marine Affairs and Fisheries.

TEDx talk, Stanford University, April 2016.

Participation in numerous outreach events such as the Science, Technology, Engineering, and Mathematics (STEM) Week at local High Schools, public lectures and radio shows.

**4. Post-degree honors and awards:****Keynote addresses:**

Distinguished Speaker, Computational Infrastructure for Geodynamics, 2020-2021.

International Symposium on Glacial Erosion and Sedimentation, International Glaciological Society, Madison, Wisconsin, USA, May 2019.

Meeting of the Community Surface Dynamics Modeling System 2018: Geoprocesses, Geohazards, Boulder, Colorado, USA, May 2018.

Gordon Research Conference on Flow and Transport in Permeable Media, Newry, Maine, USA, July 2018.

Gordon Research Conference on Rock Deformation, Proctor Academy, New Hampshire, USA, August 2018.

**Invited talks at conferences or workshops:**

European Seminar on Computing (ESCO) 2002, Minisymposium on Advanced Computational Methods for Climate Modeling and Analysis, June 2022.

Physics in the ground beneath our feet: Applications of statistical and nonlinear physics in environmental and geoscience, Princeton University, January 2022.

Virtual Seminar Series of the Cascadia Coastal Hazards Research Coordination Network and Cascadia Coastlines and Peoples Hazards Research Hub, November 2021.

GeoScience & GoeEnergy Webinar Series, Delft University of Technology, Netherlands, August 2021.

Joint Webinar between Oregon State University and the CN Yang Scholars Programme at Nanyang Technological University in Singapore, June 2021.

Society for Industrial and Applied Mathematics, Geosciences, Fluid-structure interaction modeling: new methods and applications in coastal and riverine engineering, June 2021.

Society for Industrial and Applied Mathematics, Conference on Computational Science and Engineering, Minisymposium on Ice Sheet Modeling, March 2021.

14<sup>th</sup> World Congress on Computational Mechanics (WCCM) and European Community on Computational Methods in Applied Sciences (ECCOMAS) Congress (jointly held), Session on Immersed Methods for Computational Fluid Dynamics and Fluid-Structure Interactions, Paris, France held virtually in January 2020.

Fall Meeting, American Geophysical Union, Volcanology, Geochemistry and Petrology, San Francisco, USA, December 2020.

North Arizona University, Department of Geology, Virtual Department Seminar, February 2021.

Rochester Institute of Technology, School of Mathematical Sciences, Mathematical Modeling Seminar, February 2021.

Utah State University, Department of Geology, Virtual Department Seminar, October 2020.

University of California, San Diego, Scripps Institution of Oceanography, Institute of Geophysics and Planetary Physics, Virtual Speaker Series, April 2020.

University of California, Santa Barbara, Joint Seminar on Fluid Mechanics, March 2020.

Mathematical Modelling in Glaciology, Workshop at the Banff International Research Station, Banff, Canada, 2020.

Fall Meeting, American Geophysical Union, Cryosphere Sciences, San Francisco, USA, December 2018.

Fall Meeting, American Geophysical Union, Earth and Planetary Surface Processes, San Francisco, USA, December 2018.

West Antarctic Ice Sheet Initiative, Stony Point, New York, September 2018.

16th International workshop on Multi-scale (Un)-structured mesh numerical Modeling for coastal, shelf, and global ocean dynamics (IMUM 2017), Stanford, USA, August 2017.

Fall Meeting, American Geophysical Union, Cryosphere Sciences, San Francisco, USA, December 2016.

Workshop on complex boundary and interface problems, University of Montréal, Canada, July 2016.

Workshop on the magma and mantle dynamics of planet Earth, University of Cambridge, UK, June 2016.

Workshop on Injection Induced Seismicity – Engineering Integration, Evaluation and Mitigation, Society of Petroleum Geophysicists/Society of Exploration Geophysics, Fort Worth, Texas, USA, March 2016.

Workshop on Maximum Magnitude Estimates for Probabilistic Seismic Hazard and Risk Modelling in Groningen Gas Field, NAM hazard and risk team, Amsterdam, Netherlands, March 2016.

Goldschmidt Conference, Prague, Czech Republic, August 2015.

Conference on Mathematical and Computational Issues in the Geosciences, Society of Industrial and Applied Mathematics, Minisymposium on Evolving Interfaces in Computational Geosciences, Stanford, July 2015.

**Invited department seminars since 2014:**

Earth Surface Dynamics lecture series, German Research Centre for Geosciences, October 2020.

Geosciences Seminar, Utah State University, October 2020.

Institute of Geophysics and Planetary Physics, Virtual Seminar Series, University of California San Diego, April 2020.

Fluid Mechanics seminar, Mechanical Engineering, UC Santa Barbara, February 2020.

Department seminar, Earth and Planetary Sciences, Harvard University, February 2020.

Department seminar, Marine Geology, Geophysics and Seismology, Lamont-Doherty Earth Observatory, New York, November 2019.

Department seminar, Earth Sciences, University of Southern California, January 2019.

Department seminar, Geosciences, University of Wisconsin-Madison, November 2017.

Department seminar, Earth and Planetary Sciences, UC Berkeley, May 2017.

Seismo Lab seminar, California Institute of Technology, June 2017.

Department seminar, Institute of Geophysics and Planetary Physics, Scripps Institution of Oceanography, May 2017.

Department seminar, Earth and Planetary Sciences, UC Davis, November 2016.

Department seminar, Geology Club, San Jose State University, San Jose, April 2015.

Department seminar, Earth and Planetary Sciences, UC Santa Cruz, November 2015.

Applied Mathematics and Oceanography seminar, Naval Postgraduate School, Monterey, May 2015.

Department seminar, School of Earth Sciences, University of Bristol, April 2015.

Earth System Science Department seminar, Stanford University, January 2014.

Volcanology seminar, United States Geological Survey, November 2014.  
Department seminar, Earth and Planetary Sciences, UC Santa Cruz, April 2014.  
Department seminar, Earth Sciences, University of Oregon, January 2014.

**Conference talks (selected):**

Fall Meeting, American Geophysical Union, San Francisco, USA, December 2014, 2015, 2016, 2017, 2018, and 2019.

Scientific Assembly, International Association of Volcanology and Chemistry of the Earth's Interior, Portland, August 2017.

General Assembly, European Geophysical Union, Vienna, April 2015.

International Symposium on Contemporary ice-sheet dynamics: ocean interaction, meltwater, & non-linear effects, International Glaciological Society, Cambridge, UK, August 2015.

**Memberships in professional associations:**

American Geophysical Union, Society of Industrial and Applied Mathematics, International Glaciological Society, Geological Society of America, Mineralogical Society of America, German Association for the United Nations, Geohazards International.

**5. Publications<sup>1</sup> (1174 citations per 6/29/2022):**

**Manuscripts in Review:**

[53] *Z. Qin, T. Keller, J. Suckale*, “Maintaining open-system conditions in persistently active volcanoes requires magma recirculation”, in review at the Journal of Geophysical Research.

[52] **C. Culha, S. Spinner, J. Suckale**, “Internal shear instability in layered lava flow may initiate the pahoehoe to aa lava transition”, in review at Geophysical Research Letters.

[51] **P. Summers, C. W. Elsworth, J. Suckale**, “Inward Migration of the Shear Margins at Thwaites Glacier: Dependence on Basal Conditions and Testability Against Field Data”, submitted.

[50] *K. A. Serafin, J. R. Koseff, J. W. Baker, J. Suckale*, “Flood risk transfer as a consequence of climate change and infrastructure modifications along the San Francisquito Creek, California”, in review at Water Resources Research.

[49] **E. Velterop, B. Uz kent, J. Suckale**, “Safe Shelter: A Case for Prioritizing Housing Quality in Climate Adaptation Policy by Remotely Sensing Roof Tarps in the San Francisco Bay Area”, in review at Earth’s Future.

[48] *T. Keller, J. M. Hanchar, F. Tornos, J. Suckale, D. K. Pietruszka, N. A. Graham, K. P. Severin*, “Extrusion of iron-rich melt formed magnetite-apatite deposits on El Laco volcano”, revised resubmit at Nature Communications.

[47] **P. Summers, C. W. Elsworth, J. Suckale**, “Shear margin interaction and ramifications for

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<sup>1</sup> Student co-authors who I supervised are printed in bold and supervised postdoc co-authors are italicized.

ice stream stability at Institute Ice Stream, West Antarctica”, in review at the Journal of Geophysical Research.

### Peer Reviewed Articles:

- [46] **S. Peng**, *D. Picchi*, J. Suckale “Disrupt the upper or the lower conduit? The dual role of gas exsolution in the conduits of persistently active volcanoes”, Journal of Fluid Mechanics, accepted 2022.
- [45] **Z. Wei**, *Z. Qin*, J. Suckale, “Magma mixing during conduit flow is reflected in melt-inclusion data from persistently degassing volcanoes”, Journal of Geophysical Research, accepted 2022.
- [44] **C. Culha**, *T. Keller*, J. Suckale, “Biased witnesses: Crystal thermal records may give conflicting accounts of magma cooling”, Journal of Geophysical Research, accepted 2022.
- [43] P. Maldonado, A. Peng, D. Ouyang, J. Suckale, D. E. Ho, “Enhancing Science, Policy, and Public Health: Assessing COVID-19 Capacity Limits through an Academic-Public Health Partnership”, American Journal of Public Health, 112, 2, 308-315, <https://doi.org/10.2105/AJPH.2021.306576>, 8 pages, 2022.
- [42] **I. G. Kasmalkar**, *A. Damsgaard*, L. Goran, J. Suckale “Shear Variation at the Ice-Till Interface Changes the Spatial Distribution of Till Porosity and Meltwater Drainage”, Journal of Geophysical Research, 126, e2021JF006460, <https://doi.org/10.1029/2021JF006460>, 29 pages, 2021.
- [41] **I. G. Kasmalkar**, *K. A. Serafin*, J. Suckale, “Integrating urban traffic models with coastal flood maps to quantify the resilience of traffic systems to episodic coastal flooding”, MethodsX, 101483, <https://doi.org/10.1016/j.mex.2021.101483>, 11 pages, 2021.
- [40] *Z. Qin*, F. Beckett, A. C. Rust, J. Suckale, “Interactions Between Gas Slug Ascent and Exchange”, Journal of Geophysical Research, 126, e2021JB022120, doi: 10.1029/2021JB022120, 21 pages, 2021.
- [39] **I. A. Bick**, **A. F. Santiago Tate**, *K. A. Serafin*, A. Miltenberger, M. Evans, **I. Anyansi**, L. Ortolano, *D. Ouyang*, J. Suckale, “Rising Seas, Rising Inequity? Communities at Risk in the San Francisco Bay Area and Implications for Adaptation Policy”, Earth’s Future, 9, e2020EF001963, doi:10.1029/2020EF001963, 21 pages, 2021.
- [38] **I. G. Kasmalkar**, J. Suckale, “Traffic accidents and delays present contrasting pictures of traffic resilience to coastal flooding in the San Francisco Bay Area, USA”, Urban Climate, 37, doi: 10.1016/j.uclim.2021.1008512021, 23 pages, 2021.
- [37] *A. Damsgaard*, L. Goran, J. Suckale, “Water pressure fluctuations control variability in sediment flux and slip dynamics beneath glaciers and ice streams”, Communications Earth&Environment, 1, 66, doi: 10.1038/s43247-020-00074-7, 8 pages, 2020.
- [36] M. DiBenedetto, *Z. Qin*, J. Suckale, “Crystal aggregates recorded the preeruptive flow conditions in the volcanic conduit at Kilauea, Hawaii”, Science Advances, 6, 49, doi: 10.1126/sciadv.abd4850, 13 pages, 2020.
- [35] *D. Picchi*, J. Suckale, I. Battiato, “Taylor drop in a closed vertical pipe”, Journal of Fluid Mechanics, 902(A19), doi:10.1017/jfm.2020.596, 26 pages, 2020.
- [34] **I. G. Kasmalkar**, *K. A. Serafin*, Y. Miao, **I. A. Bick**, L. Ortolano, *D. Ouyang*, J. Suckale, “When Floods Hit the Road: Resilience to Flood-Based Commute Disruption in the San

- Francisco Bay Area and Beyond”, *Science Advances*, 6, eaba2423, doi:10.1126/sciadv.aba2423, 8 pages, 2020.
- [33] **B. Lunghino**, **A. F. Santiago Tate**, F. X. Giraldo, M. Mazereeuw, A. Muhari, *S. Marras*, J. Suckale, “The protective benefits of tsunami mitigation parks and ramifications for their strategic design”, *Proceedings of the National Academy of Sciences*, 117, 10740-10745, doi:10.1073/pnas.1911857117, 6 pages, 2020.
- [32] *L. Räss*, A. Licul, F. Herman, Y. Y. Podladchikov, J. Suckale, “Modelling thermomechanical ice deformation using a GPU-based implicit pseudo-transient method (FastICE v1.0)”, *Geoscientific Model Development*, 13, 955-976, doi:10.5194/gmd-13-955-2020, 22 pages, 2020.
- [31] *Z. Qin*, J. Suckale, “The flow-to-sliding transition in crystal-bearing magma undergoing rotational shear flow”, *Journal of Geophysical Research*, 125, e2019JB018549, doi:10.1029/2019JB018549, 23 pages, 2020.
- [30] **C. Culha**, J. Suckale, *T. Keller*, *Z. Qin*, “Crystal fractionation by crystal-driven convection”, *Geophysical Research Letters*, 47, e2019GL086784, doi:10.1029/2019GL086784, 9 pages, 2020.
- [29] **J. Birnbaum**, *T. Keller*, J. Suckale “Periodic outgassing as a result of unsteady convection in Ray Lava Lake, Mount Erebus, Antarctica”, *Earth and Planetary Science Letters*, 115903, doi:10.1016/j.epsl.2019.115903, 13 pages, 2020.
- [28] *Z. Qin*, **K. Allison**, J. Suckale, “Direct numerical simulations of viscous suspensions with variably shaped crystals”, *Journal of Computational Physics*, 109021, 24 pages, doi:10.1016/j.jcp.2019.109021, 2019.
- [27] **I. G. Kasmalkar**, *E. Mantelli*, J. Suckale “Spatial heterogeneity in subglacial drainage driven by till erosion”, *Proceedings of the Royal Society A*, 475, doi:10.1098/rspa.2019.0259, 28 pages, 2019.
- [26] *T. Keller*, J. Suckale “A continuum model of multi-phase reactive transport in igneous systems”, *Geophysical Journal International*, 219, doi:10.1093/gji/ggz287, 38 pages, 2019.
- [25] *Z. Qin*, A. Soldati, **L. C. Velazquez Santana**, A. C. Rust, J. Suckale, K. Cashman, “Slug stability in flaring geometries and ramifications for volcanic systems”, *Journal of Geophysical Research*, 123, doi:10.1029/2018JB016113, 18 pages, 2018.
- [24] M. Ikoma, L. A. Elkins-Tanton, K. Hamano, J. Suckale “Water Partitioning in Planetary Embryos and Protoplanets with Magma Oceans”, *Space Science Reviews*, 214, 76, doi:10.1007/s11214-018-0508-3, 28 pages, 2018.
- [23] J. Suckale, *Z. Qin*, D. Picchi, *T. Keller*, I. Battiato “Bistability of buoyancy-driven exchange flow in vertical tubes”, *Journal of Fluid Mechanics*, 650, 525-550, doi:10.1017/jfm.2018.382, 26 pages, 2018.
- [22] J. Suckale, Z. Saiyed, G. Hilley, T. Alvisyahrin, A. Muhari, M. L. Zoback, S. Truebe “Adding a community partner to service learning may elevate learning but not necessarily service”, *International Journal of Disaster Risk Reduction*, 28, 80-87, doi:10.1016/j.ijdrr.2018.02.011, 8 pages, 2018.
- [21] *S. Marras*, M. A. Kopera, E. Constantinescu, J. Suckale, F. X. Giraldo, “A Residual-based Shock Capturing Scheme for the Continuous/Discontinuous Spectral Element Solution of the 2D Shallow Water Equations”, *Advances in Water Resources*, 114, 45-63,



doi:10.1016/j.advwatres.2018.02.003, 19 pages, 2018.

- [20] A. Damsgaard, J. Suckale, J. A. Piotrowski, M. Houssais, M. R. Siegfried, H. A. Fricker “Sediment behavior controls equilibrium width of subglacial channels”, *Journal of Glaciology*, 63(242), 1034-1048, doi:10.1017/jog.2017.71, 15 pages, 2017.
- [19] *D. Dempsey*, J. Suckale “Physics-based forecasting of induced seismicity at Groningen gas field, the Netherlands”, *Geophysical Research Letters*, 44, doi:10.1002/2017GL073878, 10 pages, 2017.
- [18] *Z. Qin*, J. Suckale “Direct numerical simulations of gas-solid-liquid interactions in dilute fluids”, *International Journal of Multiphase Flow*, 96, 34-47, doi:10.1016/j.ijmultiphaseflow.2017.07.0082017, 14 pages, 2017.
- [17] K. K. Arkema, R. Griffin, *S. Maldonado*, J. Silver, J. Suckale, A. D. Guerry “Linking social, ecological, and physical science to advance natural and nature-based protection for coastal communities”, *Annals of the New York Academy of Sciences*, 1-22, doi:10.1111/nyas.13322, 22 pages, 2017.
- [16] J. Suckale, *T. Keller*, K.V. Cashman, P.O. Persson “Flow-to-fracture transition in a volcanic mush plug may govern normal eruptions at Stromboli: Slug or Plug”, *Geophysical Research Letters*, 43, doi:10.1002/2016GL071501, 11 pages, 2016.
- [15] **C.W. Elsworth**, J. Suckale, “Rapid ice flow rearrangement induced by subglacial drainage in West Antarctica”, *Geophysical Research Letters*, 43, doi:10.1002/2016GL070430, 11 pages, 2016.
- [14] J. Platt, T. Perol, J. Suckale, J.R. Rice “Determining conditions that allow a shear margin to coincide with a Røthlisberger channel”, *Journal of Geophysical Research*, 121, doi:10.1002/2015JF003707, 22 pages, 2016.
- [13] *D. Dempsey*, J. Suckale, Y. Huang “Collective properties of injection-induced earthquake sequences 2: Spatiotemporal evolution and magnitude frequency distributions”, *Journal of Geophysical Research*, 121, doi:10.1002/2015JB012551, 28 pages, 2016.
- [12] *D. Dempsey*, J. Suckale, “Collective properties of injection-induced earthquake sequences 1: Model description and directivity bias”, *Journal of Geophysical Research*, 121, doi:10.1002/2015JB012550, 29 pages, 2016.
- [11] T. Perol, J. Platt, J.R. Rice, J. Suckale “Subglacial hydrology and ice stream margin locations”, *Journal of Geophysical Research*, 120, 1352-1368, doi:10.1002/2015JF003542, 17 pages, 2015.
- [10] J. Suckale, T. Perol, J. Platt, J.R. Rice, “Deformation-induced melting in the margin of Whillans ice stream (B2), Siple Coast, Antarctica, and implications for ice-stream dynamics”, *Journal of Geophysical Research*, 119, doi:10.1002/2013JF003008, 22 pages, 2014.
- [9] J. Suckale, L.T. Elkins-Tanton, J. Sethian, “Crystals stirred up: 2. Numerical insights into the formation of the earliest crust on the Moon”, *Journal of Geophysical Research*, 117, E08005, doi:10.1029/2012JE004067, 21 pages, 2012.
- [8] J. Suckale, J. Sethian, J. Yu, L.T. Elkins-Tanton, “Crystals stirred up: 1. Direct numerical simulations of crystal settling in non-dilute magmatic suspensions”, *Journal of Geophysical Research*, 117, E08004, doi:10.1029/2012JE004066, 17 pages, 2012.
- [7] J. Suckale, B.H. Hager, L.T. Elkins-Tanton, J.-C. Nave, “Reply to the comment by James et

- al. on It takes three to tango: 2. Bubble dynamics in basaltic volcanoes and ramifications for modeling normal Strombolian activity, *Journal of Geophysical Research*, 116, B06208, doi:10.1029/2011JB008351, 3 pages, 2011.
- [6] J. Suckale, B.H. Hager, L.T. Elkins-Tanton, J.-C. Nave, “It takes three to tango: 2. Bubble dynamics in basaltic volcanoes and ramifications for modeling normal Strombolian activity”, *Journal of Geophysical Research*, 115, B07410, doi:10.1029/2009JB006917, 16 pages, 2010.
- [5] J. Suckale, J.-C. Nave, B.H. Hager, “It takes three to tango: 1. Simulating buoyancy-driven flow in the presence of large viscosity contrasts”, *Journal of Geophysical Research*, 115, B07409, doi:10.1029/2009JB006916, 15 pages, 2010.
- [4] J. Suckale, “Large to Moderate Seismicity Induced by Hydrocarbon Production”, *The Leading Edge*, 29, 310–319, doi:10.1190/1.3353728, 8 pages, 2010.
- [3] J. Suckale, S. Rondenay, M. Sachpazi, M. Charalampakis, A. Hosa, and L. Royden, “High-resolution seismic imaging of the western Hellenic subduction zone using teleseismic scattered waves”, *Geophysical Journal International*, 178 (2), 775–791, doi:10.1111/j.1365-246X.2009.04170.x, 17 pages, 2009.
- [2] J. Suckale, “Induced Seismicity in Hydrocarbon Fields”, *Advances in Geophysics*, 51, 55–106, doi:10.1016/S0065-2687(09)05107-3, 54 pages, 2009.
- [1] J. Suckale, G. Grünthal, “Probabilistic seismic hazard model for Vanuatu”, *Bulletin of the Seismological Society of America*, 99 (4), 2108–2126, doi:10.1785/0120080188, 19 pages, 2009.