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BRADLEY PAUL LIPOVSKY

Department of Earth and Space Sciences
University Washington
Seattle, WA 98103

bpl7@uw.edu
http://bradlipovsky.github.io

RESEARCH AND TEACHING INTERESTS

– Optical fiber geophysics: novel methods for making dense geophysical measurements in places that have been historically difficult to observe; particular emphasis on Distributed Acoustic Sensing (DAS)
– Environmental geophysics: the use of seismology, remote sensing, distributed sensing, or other measurements of physical quantities, to create knowledge about environmental systems
– Computation: Mathematical and numerical analysis of environmental systems including both deterministic/physics-based and statistical approaches

APPOINTMENTS

2020 – present	**Assistant Professor**, Department of Earth and Spaces Sciences, University of Washington
2018 – 2020	**Lecturer, Research Associate**, Dept. of Earth and Planetary Sciences, Harvard University
2017–2018	**Postdoctoral Research Associate**, Dept. of Earth and Planetary Sciences, Harvard University. Supervisor: James Rice (Dept. of Earth and Planetary Sciences and School of Engineering and Applied Sciences).

EDUCATION

2017	**Doctor of Philosophy**, Geophysics, Stanford University. Supervisor: Eric Dunham (Dept. of Geophysics and Institute for Computational and Mathematical Engineering)
2011	**Master of Science**, Earth Science, University of California, Riverside. Supervisor: Gareth Funning (Dept. of Earth Science).
2008	**Bachelor of Arts**, Mathematics, Cornell University
2004	**Associate of Arts**, Mathematics, Lake Tahoe Community College

PUBLICATIONS

** Student or postdoc lead paper*

2023

27. **Lipovsky, B. P.**, Manos, J. M., Gaete Elgueta, V., "Submarine wave propagation in a sediment-rich fjord, investigated using distributed acoustic sensing (DAS)". Submitted July, 2023.

26. Syamsul, A., and **Lipovsky, B.P.**, "Global Surface Load Induced Earthquakes". Submitted June, 2023

25. Yiyu, N.*, Denolle, M.A., Fatland, R., Alterman, N., **Lipovsky, B.P.**, and Knuth, F., "An Object Storage for Distributed Acoustic Sensing", Submitted June, 2023.

24. Morris, A*., **Lipovsky, B. P.**, Walker, C.C., Marsh, O. ,"Measurement of Ice Shelf Rift Width with ICESat-2 Laser Altimetry: Automation, Validation, and the Behavior of Halloween Crack, Brunt Ice Shelf, East Antarctica", Submitted April, 2023. Pre-print Link.

23. Olinger, S.*, **Lipovsky, B. P.**, Denolle, M., "Ocean coupling controls rupture velocity of fastest observed ice shelf rift propagation event". Submitted December 2022.

22. Douglass, A.*, Abadi, S., **Lipovsky, B. P.**, "Distributed Acoustic Sensing for detecting near surface hydroacoustic signals" (2023) JASA Express Letters. Link.

21. Booth, A., Christoffersen, P., Pretorius, A., Chapman, J., Hubbard, B., Smith, E., de Ridder, S., Nowacki, A., **Lipovsky, B. P.**, Denolle, M. "Characterising sediment thickness beneath a Greenlandic outlet glacier using distributed acoustic sensing: preliminary observations and progress towards an efficient machine learning approach" (2023). Annals of Glaciology. Link.

20. Wilcock, W., Abadi, S., **Lipovsky, B. P.**, "Distributed Acoustic Sensing recordings of low-frequency whale calls and ship noises offshore central Oregon" (2023). JASA Express Letters. Link.

2022

19. Köpfli, M.* , Gräff, D. , **Lipovsky, B. P.**, Selvadurai, P. A., Farinotti, D., Walter, F., "Hydraulic Conditions for Stick-Slip Tremor Beneath an Alpine Glacier" (2022). Geophysical Research Letters. Link.

18. S. Olinger*, **Lipovsky, B. P.**, Denolle, M. A., Crowell, B. "Tracking the Cracking: a Holistic Analysis of Rapid Ice Shelf Fracture Using Seismology, Geodesy, and Satellite Imagery on the Pine Island Glacier Ice Shelf, West Antarctica" (2022). Geophysical Research Letters. Link.

17. **Lipovsky, B. P.**, "Density matters: ice compressibility and glacier mass estimation" (2022). Link.

2021

16. Gräff, D.*, Kopfli, M., Walter, F., **Lipovsky, B. P.**, Selvadurai, P. A., Daniel Farinotti, D., "Sub-Structure of Microseismic Stick-Slip Ruptures at the Bed of an Alpine Glacier," (2021) Geophysical Research Letters. Link.

15. Guerin, G.*, Mordret, A., Rivet, D., **Lipovsky, B. P.**, Minchew, B. M., "Frictional origin of slip events of the Whillans Ice Stream, Antarctica." (2021) Geophysical Research Letters. Link.

14. Aster, R. C., **Lipovsky, B. P.**, Cole, M. S. H, Bromirski, P. D., Gerstoft, P., Nyblade, A., Wiens, D., Stephen, R., "Swell-Triggered Seismicity at the Near-Front Damage Zone of the Ross Ice Shelf" (2021). Seismological Research Letters. Link.

2020

13. **Lipovsky, B. P.**, "Ice shelf rift propagation: stability, three dimensional effects, and the role of marginal weakening" (2020). The Cryosphere. Link.

2019

12. Danré, P., Yin, J.*, **Lipovsky, B. P.**, Denolle, M. "Earthquakes Within Earthquakes: Patterns in Rupture Complexity" (2019). Geophysical Research Letters. Link.

11. S. Olinger*, **Lipovsky, B. P.**, D. Wiens, R. Aster, P. Bromirski, Z. Chen, P. Gerstoft, A. Nyblade, R. Stephen "Tidal and Thermal Stresses Drive Seismicity along a Major Ross Ice Shelf Rift" (2019). Geophysical Research Letters. Link.

10. **Lipovsky, B.P.**, Meyer, C.R., Zoet, L.K., McCarthy, C., Hansen, D.D., Rempel, A.W., Gimbert, F., "Glacier sliding, seismicity, and sediment entrainment" (2019). Annals of Glaciology. Link.

9. Gräff, D.*, **Lipovsky, B.P.**, Walter, F.. "Crack wave resonances within the basal water layer" (2019). Annals of Glaciology. Link.

8. Minchew, B. M., Meyer, C.R., Pegler, S.S., **Lipovsky B.P.**, Rempel, A.W., Gudmundsson, G.H. and Iverson, N.R., "Comment on: "Friction at the bed does not control fast glacier flow" by L. A. Stearns and C. J. van der Veen" (2019). Science. Link.

2018

7. Schöpa, A., Chao, W., **Lipovsky, B.P.**, Hovius, N., White, R. S., Green, R. G., Turowski, J. M. Dynamics of the Askja Caldera July 2014 landslide from seismic signal analysis: precursor, motion and aftermath (2018). Earth Surface Dynamics, Special issue "From Process to Signal - Advancing Environmental Seismology." Link.

6. **Lipovsky, B.P.** (2018), "Ice shelf rift propagation and the mechanics of wave-induced fracture". J. Geophys. Res. Oceans Link.

2017

5. **Lipovsky, B.P.**, and Dunham, E. M. (2017), "Slow-slip events on the Whillans Ice Plain, Antarctica, described using rate-and-state friction as an ice stream sliding law". J. Geophys. Res. Earth Surface Link.

2016

4. Mordret, A., Mikesel, D., Harig, C., **Lipovsky, B. P.** , Prieto, G. A. (2016) "Monitoring southwest Greenland's ice sheet melt with ambient seismic noise". Science Advances. Link.

3. **Lipovsky, B.P.**, and Dunham, E.R. (2016), "Tremor during ice stream stick-slip". The Cryosphere. Link.

2015

2. **Lipovsky, B.P.**, and Dunham, E.R. (2015), "Vibrational modes of hydraulic fractures: Inference of fracture geometry from resonant frequencies and attenuation". J. Geophys. Res. Link.

2014

1. Gonzalez A., Gonzalez-Garcia J.J., Sandwell, D.T., Fialko, Y., Agnew, D.C., **Lipovsky, B.P.**, Fletcher, J.M., Nava-Pichardo, F.A. (2014) GPS coseismic and postseismic surface displacements of the El Mayor-Cucapah earthquake. J. Geophys. Res. Link.

HONORS, FELLOWSHIPS, AND AWARDS

2017	Early Career Scientist Outstanding Presentation Award, WCRP/IOC Conference on Regional Sea Level Changes and Coastal Impacts
2017–2018	Postdoctoral Fellowship, Dept. of Earth and Planetary Sciences, Harvard University
2011–2015	Mannon Family Fellowship, Dept. of Geophysics, Stanford University
2010	AGU Outstanding Student Paper Award

GRANTS AND FUNDING

2022	Co-PI, " Collaborative Research: Improving Model Representations of Antarctic Ice-shelf Instability and Break-up due to Surface Meltwater Processes," National Science Foundation. $371,742.
2021	Lead PI, "A Photonic Sensing Facility at the University of Washington," The Murdock Charitable Trust, $947,000.
2020	Lead PI, "An Antarctic Rift Catalog from ICESat-2 Observations," National Aeronautics and Space Administration. $599,993.
2020	Co-PI, "NSFGEO-NERC: Collaborative Research: A new mechanistic framework for modeling rift processes in Antarctic ice shelves validated through improved strain-rate and seismic observations," National Science Foundation. $362,278.

Total funds raised, $2,281,013.

FIELD WORK

2021	Easton Glacier, WA, USA.
2018–2019	"Seismic observations of rapid subglacial hydrological switching," Solmaheimajokull, Iceland and Gorner Glacier, Switzerland.
2015	"High resolution heterogeneity at the Base of Whillians Ice Stream and its Control on Ice Dynamics", Whillans Ice Stream, West Antarctica.
2012	"Observational constraints on the processes acting in icefalls from seismicity", Juneau Ice Field, Alaska
2010–2011	"Rapid postseismic GPS observations following the El Mayor-Cucapah earthquake", Mexicali, Mexico.

TEACHING

2022	*Planned,* UW ESS 107, "Introduction to the Cryosphere"
2021	UW ESS 411/511, "Continuum Mechanics"
2019	Harvard EPS 268, "Machine Learning Across the Earth and Planetary Sciences".
2018	Harvard EPS 253, "Glaciology".
2013–2016	*Teaching assistant*, Stanford Geophysics 120/220, "Ice, Water, Fire"

ADVISING

Doctoral Students

2021–	**Parker Sprinkle**, PhD Student at UW, Enhanced Geothermal Systems
2021–	**John-Morgan Manos**, PhD Student at UW, Geophysical observations of glacier surface hydrology.
2021–	**Jonathan Gates**, PhD Student at UW, Fracture mechanics and volcanoes
2018–	**Seth Olinger**, PhD student at Harvard University studying ice shelf seismology. Co-advised with Marine Denolle.

Predoctoral (Undergraduate and Post-baccalaureate) Students

2021	**Victoria Johnson**, Glacier seismology
2021	**Simon Anderson**, Machine learning in glaciology
2021	**Amanda Syamsul**, Glacier-tectonic interactions
2019	**William Flanagan**, Masters student at Harvard University studying subglacial hydrology and seismology. Co-advised with Marine Denolle.
2017	**Vladislav Sevostianov**, Semester-long internship, Harvard University. Laboratory experiments on the frictional properties of ice.
2015	**Janine Birnbaum**, Summer internship, Stanford University. Research focusing on finite element modeling of ice stream loading.
2014	**Dilia Olivo**, Summer internship, Stanford University. Research focusing on rapidly repeating stick slip motion in glaciers.

SYNERGISTIC ACTIVITIES

2022	Co-chair, Understanding Earth Systems with Fiber-Optic Cables, Seismological Society of America Annual Meeting
2021-22	Co-chair, Distributed Acoustic Sensing (DAS) Research Coordination Network (RCN), Cryosphere Working Group
2018-21	Convener, "Environmental seismology: A Geophysical Tool to study Surface and Near Surface Processes" session at the American Geophysical Union Fall Meeting.
2018–20	Convener, "Environmental seismology" session at the Seismological Society of America annual meeting.
2018–19	Scientific Editor, Annals of Glaciology, Special Issue on Cryoseismology
2016	Participant, United States Ice Drilling Program, Science Advisory Board Meeting
2015	Student Member, Cryosphere Faculty Search Committee, Department Geophysics, Stanford
2014	Student presentation judge, Stanford School of Earth Science Research Review
2013	Convener and chair, "Seismicity in the cryosphere", session at the Annual Meeting of the American Geophysical Union
2011–2012	Member, Graduate Student Advisory Council, Department of Geophysics
2010–2012	Student Representative, American Geophysical Union, Geodesy Section
2009–2010	University of California–Riverside Earth Science Graduate Association, President
ongoing	Reviewer for scientific journals, including: Science, Science Advances, Proceedings of the National Academy of Sciences, The Cryosphere, Geophysical Research Letters, Journal of Geophysical Research, Nature Communications, Earth and Planetary Science Letters, Journal of Glaciology, Annals of Glaciology, Cold Regions Science and Technology, Remote Sensing of Environment, Ocean Engineering, Journal of the Acoustical Society of America
ongoing	Reviewer for government agencies, including: the National Aeronautics and Space Administration, the U.S. National Science Foundation, the U. S. Geological Survey, the Swiss National Science Foundation, the Australian Antarctic Division, and the French Polar Institute Paul-Emile Victor (IPEV)

PRESENTATIONS

2022	Boise State University, Department of Geoscience
2022	University of Montana
2022	NASA Goddard Sea Level Rise Seminar
2021	Invited Participant, AGU Fall Meeting, SCIWS7, Distributed Acoustic Sensing in Earth Sciences: From Novice to Cutting Edge
2021	International Glaciological Society Global Seminar Series
2021	University of California at Santa Cruz, Department of Earth and Planetary Sciences Colloquium
2020	Oxford University, Seismology Seminar
2020	University of Washington, Department of Earth and Space Sciences
2019	American Geophysical Union, Fall Meeting, Cryosphere section, " Pathways to eureka from unexplained phenomena and interdisciplinary approaches to glaciology"
2019	Institut de Physique du Globe de Paris
2019	Antarctic Research Centre, University of Wellington
2019	School of Surveying, University of Otago
2019	American Physical Society, "Physics of Natural Phenomena" session.
2019	Department of Geology and Geophysics, Woods Hole Oceanographic Institution
2019	Department of Mechanical Engineering, University of Colorado at Boulder
2018	Grands Séminaires ISTerre, Institut des Sciences de la Terre, Université Grenoble Alpes
2018	Institut des Géosciences de l'Environement, Université Grenoble Alpes
2017	Brown University Department of Earth, Environmental and Planetary Sciences, Department Colloquium
2017	Lamont Doherty Earth Observatory, Seismology Seminar
2016	Massachusetts Institute of Technology, Friday Informal Seminar Hour
2016	University of Kansas
2016	University of Washington, Glaciology Lunch
2015	University of California, Santa Cruz, Department of Earth and Planetary Sciences Colloquium
2015	Massachusetts Institute of Technology, Friday Informal Seminar Hour
2014	American Geophysical Union Fall Meeting, Invited Presentation
2014	Scripps Institution of Oceanography, Institute of Geophysics and Planetary Physics, University of California–San Diego
2014	California Institute of Technology
2013	Earthquake Research Institute, University of Tokyo, Japan
2010	Southern California Earthquake Center Annual Meeting: Workshop on Transient Anomalous Strain Detection
2010	USGS Public Lecture Series Symposium at Pasadena City College
2009	Southern California Earthquake Center Annual Meeting: Workshop on Transient Anomalous Strain Detection