

EINAT LEV

HOME ADDRESS

340 Cabrini Blvd.
New York, NY 10040
(617) 794-0660

WORK ADDRESS

61 Route 9W
Palisades, NY 10964
(845) 365-8612

EDUCATION

- 2003-2009 PhD in Geophysics
Massachusetts Institute of Technology, Cambridge, MA
Thesis advisor: Bradford H. Hager
Thesis title: *Seismic and Viscous Anisotropy in the Earth's Mantle: Observations and Implications*
- 1998-2001 Bachelor of Science, cum laude.
Tel-Aviv University, Tel-aviv, Israel
Double Major in Geophysics and Computer Science.

EXPERIENCE

Lamont Assistant Research Professor Lamont-Doherty Earth Observatory 2013 – Present
Columbia University, NY

Postdoctoral Research Fellow Lamont-Doherty Earth Observatory 2009 – 2013
Columbia University, NY

Developed a research program in physical volcanology, focusing on lava flow dynamics and rheology.
Designed lab and field experiments
Developed numerical models and methods
Analyzed video and thermal recordings
Applied and secured funding from private and federal foundations
Published results at scientific journals and conferences
Organized meetings and seminars

Research Assistant Massachusetts Institute of Technology 2003 – 2009
Cambridge, MA

Conducted research focused on rheology and dynamics of Earth's mantle
Analyzed seismic recordings
Developed numerical models and tools
Published results at scientific meetings and journals

Teaching Assistant Massachusetts Institute of Technology 2004 – 2006
Cambridge, MA

Designed and presented lectures in continuum mechanics and tectonics
Evaluated students performance
Developed a new class on Earth Science and Energy

Software Engineer Gilat Satellite Networks Ltd., 2000 – 2003
Petach Tiqva, Israel

Developed software for a satellite communication hub
Migrated the software onto a new processor
Introduced new features to the system

HONORS AND AWARDS

2013	“Collaborative Proposal: Evolution of Lava Channel Networks: Implications for Lava Flow Hazards and Mitigation”, NSF grant EAR-1250431(\$40,000)
2012	“Connecting Lava Rheology and Flow Dynamics Using Novel Field and Modeling Techniques”, NSF grant EAR-1118943 (\$150,000)
2012	Brinson Foundation funding for postdoctoral fellowship at LDEO (\$40,000)
2010	LDEO Advisory Board Innovation Award – lava rheology field experiment (\$20,000)
2009	Lamont-Doherty postdoctoral fellowship
2006	EAPS award for excellence in teaching
2005	Best student presentation award, AGU Fall meeting, December 2005, San Francisco
2003-2004	MIT Presidential Fellow
2000	Best Programming Project Award, Tel-Aviv University
1999	Katzman Award for Excellence in Freshmen Year Studies, Tel-Aviv University

PUBLICATIONS

Journal articles published / in peer-review:

1. Edwards, B., J. Karson, R. Wysocki, **E. Lev**, U. Keuppens, *Experimental Insights on Natural Lava-Ice/Snow Interactions*, *Geology*, v. 41 (2013), 851-854, doi: 10.1130/G34305.1
2. **Lev, E.**, M. Spiegelman, J. Karson and R. Wysocki, *Investigating lava flow rheology using video analysis and numerical flow models*, *Journal of Volcanology and Geothermal Research*, Volume 247-248, p. 62-73 (2012) doi=10.1016/j.jvolgeores.2012.08.002
3. **Lev, E.** and B.H. Hager, *Anisotropic viscosity changes the thermal structure of subduction zone wedges*, *Geochem. Geophys. Geosys.*, v. 12 (2011), Q04009, doi:10.1029/2010GC003382
4. Grove, T. L. , C. B. Till, **E. Lev**, N. Chatterjee and E. Médard, *Kinematic variables and water transport control the formation and location of arc volcanoes*, *Nature*, v. 459 (2009), doi:10.1038/nature08044.
5. **Lev, E.** and B.H. Hager, *Prediction of anisotropy from flow models – a comparison of three methods*, *Geochem. Geophys. Geosys.*, v. 9 (2008), Q07014, doi:10.1029/2008GC002032
6. **Lev, E.** and B.H. Hager, *Rayleigh-Taylor Instabilities with anisotropy lithospheric viscosity*, *Geophys. Jour. Int.*, v. 173 (2008), p. 806-814
7. Sol, S., Meltzer, A., Burgmann, R., van der Hilst, R.D., King, R., Chen, Z., Koons, P.O., **Lev, E.**, Liu, Y.P., Zeitler, P.K., Zhang, X., Zhang, J., Zurek, B., *Geodynamics of the southeastern Tibetan Plateau from seismic anisotropy and geodesy*, *Geology*, v. 35 (2007), p. 563-566.
8. **Lev, E.**, M. D. Long and R.D. van der Hilst, *Seismic anisotropy in eastern Tibet from shear wave splitting reveals changes in lithospheric deformation*, *Earth. Planet. Sci. Lett.*, v. 251 (2006), p. 293-304.

Articles in preparation:

1. **Lev, E.** and James, M., *Influence of channel shape of lava flow dynamics and inferred lava rheology*. Almost ready for submission to the *Bulletin of Volcanology*. Current draft available upon request.
2. Patrick, M., Orr T. and **Lev, E.**, *Lava lake rise and fall cycles at Halema'uma'u crater, Kilauea Volcano during 2010-2011*, current draft available upon request
3. **Lev, E.**, J. Karson, M. Kissane, C. Smith, and R. Wysocki., *Morphology and viscosity of experimental lava flows*

Presentations and Posters:

- Physical Volcanology:
 - Investigating Lava Properties using Experiments, Video Analysis, Infrared Thermometry and Numerical Flow Models, IAVCEI meeting, Kagoshima, Japan, July 2013
 - California Institute of Technology, Geology and Planetary Science Seminar, January 2013
 - Experimental Insights on Natural Lava-Ice/Snow Interactions and Their Implications for Glacio-volcanic and Submarine Eruptions, Benjamin R. Edwards; Jeffrey Karson; Robert Wysocki; Einat Lev; Ilya N. Bindeman; Ulrich Kueppers, AGU Fall Meeting, 2012
 - Investigating Lava Properties using Experiments, Video Analysis, Infrared Thermometry and Numerical Flow Models, Einat Lev; Marc Spiegelman; Jeffrey Karson; Robert Wysocki, AGU Fall Meeting, 2012
 - University of Pittsburgh, Geology and Planetary Science Colloquium, November 2012
 - Investigating Lava Rheology Using Man-Made Lava Flows, Computer Vision, and Flow Models, Chapman Conference on Hawaiian Volcanism, 2012
 - Department of Environmental Sciences and Energy Resources, Weizmann Institute of Science, Israel, Colloquium, May 2012
 - American Museum of Natural History weekly seminar, March 2012
 - Investigating Lava Rheology Using Man-Made Lava Flows, Computer Vision, and Flow Models, AGU Fall Meeting, 2011
 - Investigating Lava Rheology Using Video Analysis and Flow Models, IUGG, Australia, 2011
 - Modeling Lava Flows, PASI Open Vent volcanoes workshop, Costa Rica, 2011
 - Extracting Lava Velocity and Rheology from Computer-Vision Analysis of Lava Flow Videos, IUGG/CMG meeting, Italy, 2010
- Anisotropic viscosity in geodynamical models:
 - Gordon Research Conference on Earth Interior, 2011
 - SUNY-Stony Brook Geology Colloquium, 2010
 - Fall AGU Meeting, San Francisco, CA, 2009
 - LDEO geodynamics seminar, Lamont-Doherty Earth Observatory, 2009
 - Physics Department Colloquium, Colorado University-Boulder, 2009
 - Gordon Research Conference in Rock Deformation, 2008
 - CIG Mantle convection and lithospheric dynamics, 2008
 - Geophysics seminar, Princeton University, 2008
 - Geology and Geophysics seminar, Brown University, Providence, RI, 2007
 - Geology and Geophysics seminar, WHOI, Woods Hole, MA, 2006
- Seismic Anisotropy in Eastern Tibet from Shear-Wave Splitting:
 - International workshop on seismic anisotropy, Trest, Czech Republic, 2006
 - Fall AGU Meeting, San Francisco, CA, 2005

CONFERENCES AND WORKSHOPS

July 2013	IAVCEI meeting, Kagoshima, Japan (invited speaker)
August 2012	Chapman Conference on Hawaiian Volcanism, Hawaii
October 2011	GeoPrisms/Earthscope in Eastern North America planning workshop, Lehigh University, PA
June 2011	IUGG General Assembly, incl. IAVCEI Assembly, Melbourne, Australia
June 2011	Gordon Research Conference on Earth Interior, Mt. Holyoke, MA
January 2011	PASI Open Vent Volcanoes workshop, San Jose, Costa Rica
June 2010	IUGG Computational and Mathematical Geophysics, Pisa, Italy
August 2008	Gordon Research Conference on Rock Deformation, Tilton, NH (invited speaker)
July 2008	CIG meeting "numerical modeling of mantle convection", Davis, CA (Invited speaker)
May 2008	ExxonMobile field workshop, Annandale, NJ
March 2008	Microtexture analysis, Workshop with R. Heilbronner, MIT
September 2007	Numerical modeling of mantle convection and lithospheric dynamics, Carry La-Rouet, France
August 2007	The Cutting Edge "Preparation for an academic career in geosciences" workshop, Madison, WI
June 2007	Gordon conference "Interior of the Earth", Mt. Holyoke, MA
July 2006	MYRES II, Verbania, Italy
June 2006	International workshop on seismic anisotropy, Trest, Czech Republic
October 2005	NSF-supported F2P (Forward To Professorship) workshop, Cambridge, MA
June 2005	CIG meeting "Numerical modeling of mantle convection", Boulder, CO
June 2005	Gordon conference "Interior of the Earth", Mt. Holyoke, MA
September 2005	International school of Geophysics meeting, Erice, Italy
Decembers since 2003	Fall AGU Meeting, San-Francisco, CA

COMPUTER SKILLS

Programming Languages:	Matlab (fluent), C (fluent), C++ (some), shell scripting, Fortran (some)
Numerical modeling codes:	
Finite Elements:	Elmer, Fluidity, Underworld/Gale, Citcom, Conman, Adina
Finite Volume/Elements:	OpenFOAM
Volume-Of-Fluid:	Flow3D, VolcFlow
Seismology codes:	SAC, Seismic Handler, IRIS SeismoQuery tool
Mapping, imaging and meshing:	ArcGIS, Paraview, ImageJ, GMsh, MeshLAB
Crystallography tools:	D-Rex, ImageSXM

FIELD EXPERIENCE

August 2012	Infrared video recording of active lava flows, Kilauea volcano, Hawaii
February 2011 – Present	Controlled lava flow experiments at Syracuse University
August 2009	Mapping lava channels on Mauna Loa, Hawai'i using LiDAR (P.I.s: Kathy Cashman and Adam Soule)
June 2008	WHOI Geodynamics field trip, Costa Rica
July 2006	Deployment of a PASSCAL-Earthscope seismic network in the Cascades, WA (P.I.s: Ken Creager, Geoff Abers, Stephane Rondenay)
January 2006	Geologic Mapping Field Camp, Southern Arizona
September 2004	Geology field trip to Sichuan province (Eastern Tibet), China (P.I.: Leigh Royden)
January 2004, January 2008	Geophysics Field Camp, Riverside Mountains, Southern California

PROFESSIONAL SERVICE

2007-present	Peer-reviewed articles for: Geology, Tectonophysics, EPSL, G-cubed, and GJI
2009-present	Mail-in reviewer for proposals for the NSF and NASA
September 2011	Geoscience Congressional Visit Day, Participant (NY state)
2007 AGU Fall meeting	Organizer of a special session focused on "Rheological Anisotropy"
2006, 2007, 2009	AGU Fall meetings Session chair for Tectonophysics/Seismology
2009-present	AGU Fall meetings Outstanding Student Paper Award Judge

UNIVERSITY SERVICE

2011	Member of the LDEO special task force on diversity
2009-2011	Head of the Cookies and Well-Being committee for SGT
2010-2011	Organizer of LDEO's Geophysics seminar (joint SGT and MG&G)
2006-2007	Secretary of EAPS graduate students advisory council (EGSAC) (member 2003 - present)
2005-2006	Organizer of the Geology and Geophysics weekly students seminar
2005-present	Coordinator of Graduate Student Mentoring program in EAPS
2004	Organizing Committee of Geophysics monthly seminar

COMMUNITY OUTREACH

Media interviews over the years:	Discovery, Nova, New Scientist, NPR
March 2011, 2012	NYC Science and Engineering Fair, Earth and Planetary Science, Head judge
October 2010 – 2012	"Dynamics of Lava Flows" at the LDEO Open House event
Summer 2011	Assisted in mentoring an undergraduate summer intern at LDEO
November 2009-2010	Assisting a high-school student on a science research project about volcanoes
July-August 2007	Teacher of "Introduction to geology" class, MIT's High-School Summer Program (HSSP)
2005 - 2008	Mentor in KEYS (Keys to Empowering Youth) project at MIT

PROFESSIONAL AFFILIATIONS

- o American Geophysical Union (AGU)
- o International Association of Volcanology and Chemistry of Earth's Interior (IAVCEI)
- o Association of Women Geoscientists

LANGUAGES

Hebrew (native), English (fluent), some Spanish and Arabic

HOBBIES

Horseback riding (Dressage)
Rock climbing
Hiking
Travel
Road cycling