Ronni Grapenthin

last revised: December 21, 2018

Contact Information

New Mexico Institute of Mining and Technology
Department of Earth and Environmental Science
801 Leroy Place
Socorro NM 87801, USA

phone: +1 575 835 5924
mail: rg@nmt.edu
web: www.grapenthin.org

Position

Assistant Professor of Geophysics, 2014–present (tenure at NMT expected May 2019)

Interests

Volcanic, hydrologic and tectonic crustal deformation processes, high-rate and real-time GNSS applications, non-traditional GNSS signals, signal processing & time series analysis, inverse methods, software engineering

Education

09/2007 – 07/2012 Ph.D. Geophysics, University of Alaska Fairbanks (UAF), USA
Dissertation: "Volcano Deformation and Subdaily GPS Products"

10/1999 – 08/2007 M.Sc. Computer Science, Humboldt-Universität zu Berlin, Germany
Thesis: "CrusDe: A plug-in based simulation framework for composable CRUstal DEformation simulations using Green's functions"

Professional Experience

08/2012 – 08/2014 *Postdoctoral Employee, Berkeley Seismological Laboratory, UC Berkeley, USA*
Implementation of GPS integrated earthquake early warning (Python, Shell)
Volcano deformation studies in Alaska, Iceland

09/2007 – 07/2012 *Research Assistant, Geophysical Institute and Alaska Volcano Observatory, University of Alaska Fairbanks, USA*
Volcano deformation studies in Alaska, Kamchatka and Iceland; volcano monitoring; development of computer programs for data analysis (Matlab, Shell, Perl)

03/2006 – 09/2006 *Visiting Student, Nordic Volcanological Center, Iceland*
Forcast elastic crustal response to the Hálslón water reservoir, investigation of seasonal cycles in continuous GPS time series in Iceland (Matlab, C).

06/2003 – 07/2007 *Developer/Programmer, Zuse Institute Berlin, Germany*
Redesign of a platform independent museum database system (C/C++, Qt)

09/2001 – 12/2002 *Programmer, DaimlerChrysler Research/Technology, Germany*
Multi-Agent-System to analyze supply net relations in the automotive industry (Java)

05/2001 – 05/2002 *Developer/Programmer, Skilldeal AG, Germany*
Web application design and development to manage company and employee profiles and administer outsourcing tasks (PHP, MySQL).

until 2007 *Freelance Programmer, Germany*
Development of several commercial and private websites or webbased projects.

Academic Honors and Awards

Student Publication Award 2013, Geophysical Institute, UAF (for Redoubt paper)
Outstanding Student Performance Award 2011, Geophysical Institute, UAF
Geophysical Society of Alaska, Scholarship Award 2010
Alaska Geological Society, Scholarship Award 2010
Best Diploma Thesis in Applied Computer Science: CS Dept. Humboldt Univ. Berlin, 2008
AGU Outstanding Student Paper Award: Geodesy Section, Fall Meeting, 2006.
Erasmus Exchange Programme grant: Háskóli Íslands, Reykjavík, Iceland, 2005.

Active Funding

- NASA-ESI (03/2019-02/2021, $280k, PI): Instantaneous GNSS Velocities for Rapid Ground Motion Characterization
- NASA New Investigator Program (06/2018-04/2021, $250k, PI): Joining InSAR with GRACE: Geofluid Dynamics Analysis for New Mexico
- NSF-OPP Antarctic Sciences (04/2017-04/2019, $151k, PI): Collaborative Research: Multi-Parameter Geophysical Constraints on Volcano Dynamics of Mt. Erebus and Ross Island, Antarctica
- NSF-EAR Hydrology (04/2018-08/2020, $480k + $49k supplement, co-PI): Collaborative Research: Geophysical characterization of a karst aquifer using dynamic recharge events
- City of Santa Fe (2018/19, $15k, co-PI): GPS-based soil moisture/snow pack monitoring system prototyping.
- NM Bureau of Geology and NMT Research Foundation (2018/19, $6k, PI): Hydrogeodesy for Southern New Mexico Pilot Project (seed funding).

Past Funding

- NSF-EAR Geophysics (12/2014-11/2015, $49,981, PI): RAPID: Bárðarbunga Eruption Response: Monitoring of post-rifting deformation and activity at Askja Volcano with continuous GPS

Pending Funding

- NSF-OPP (07/2019-07/2023, $497k for NMT, PI): Collaborative Research: The Magmatic and Eruptive System of Mount Erebus Volcano, Antarctica
- NSF-PREEVENTS (08/2019-08/2023, NMT portion $150k, co-I, UAF lead): From hindcasting to forecasting: Reanalysis & synthesis of 20+ years of multidisciplinary data from the Alaska Volcano Observatory to develop and test event-tree forecasts and volcanic eruption models

Teaching Experience (NMT)

Computational Methods in the Geosciences (ERTH 401, GEOL,GEOP 501) (Fall 2017)
Modern computational tools to organize, manipulate, analyze and plot data of various origins in the Geosciences.

Time Series Analysis (GEOP 505) (Spring 2018)
An introductory overview of methods for analyzing temporal and spatial series with an emphasis on scientific applications.

Geophysical Inverse Methods (GEOP 529) (Spring 2015, 2017, 2019)
Theory and practice of various techniques of inverting geophysical data to obtain model parameters. Emphasis is on the understanding and use of linear inverse techniques.

Geodetic Methods (ERTH 455 & GEOP 555) (Fall 2015, 2017)
Theory and application of modern geodetic tools to measure Earth's surface deformation with emphasis on GPS and InSAR. Data processing from raw data to kinematic products. Evaluation of signals and modeling of their sources.

Volcanology (ERTH 456 & GEOL 556) (Fall 2016, 2018)
Volcanic systems from storage to plume and deposits combined with monitoring and analysis techniques.

Geophysics Journal Club (GEOP 572) (every semester 2015-2017)
Discussion of recent papers of significant relevance to the field or current geologic events.

Complex Systems Seminar (GEOP 572) (Spring 2018)
Exploration of current trends and applications in complexity theory through discussions of general theory and a review of current literature. Offered by Earth Science, Biology, Social Science, Computer Science faculty.

Florida Karst (GEOP 572) (Fall 2018, Spring 2019)
Discussion of papers in environmental geophysics, subsurface flow, karst systems.

Department Seminar (ERTH 493, GEOC,GEOL,GEOP,HYD 593) (Fall 2017, Spring 2018)
Seminar presentations by faculty, students, and outside speakers. Provides a broad overview of current Earth Science research and directions.

The Earth's Crust (ERTH 203) (Spring 2016)
Basic structural geology and dynamic processes for earth science majors and petroleum engineers.

Earth Science Practicum (ERTH 205) (Spring 2015)
Instruction and practice in computational methods used to solve Earth science problems. Simple ways to describe physical processes mathematically, then approximate them numerically. Introduction to spreadsheets, Matlab, graphics programs. Review of math and statistics.

Teaching Experience (UAF)

Beyond the Mouse – Programming Skills for Geoscientists (GEOS 692) (Fall 2009, 2010, 2011)
I created a new 2 credit course (2009: 1 credit) together with faculty supervisor Jeff Freymueller aimed at geoscience students with little or no programming experience. General introduction to programming and fundamental concepts, Matlab, Shell Scripting, Unix Tools, Generic Mapping Tools, HTML/CSS.

International Volcanological Fieldschool – Lectures on Volcano Deformation (Summer 2009)
Lectures on volcano deformation focusing on data acquisition and source modeling. Aimed at undergraduate and graduate students of volcanology and related fields.

Supervised/Funded Students

- Emily Snyder, MS expected 2019, supported on 1/2 time RA
- Jacob Gouchenour, Ph.D. (start Fall 2018), supported on 1/4 time TA, 1/4 time RA
- Sergio Barbosa, Ph.D. (start Fall 2018), supported on 1/4 time TA, 1/4 time RA
- Logan Fusso, M.S. (start Fall 2018), supported on 1/4 time TA, otherwise self-funded
- Emily Graves, Ph.D. (starts in Spring 2019), supported on 1/2 time RA
- Jared Ciarico, undergraduate researcher, unsupported

Graduate Student Committees

- Emily Graves, Ph.D. (chair, spring 2019)
- Jacob Gouchenour, Ph.D. (co-chair)
- Sergio Barbosa, Ph.D. (co-chair)
- Emily Snyder, M.S. (chair)
- Logan Fusso, M.S. (chair)
- Emily Morton, Ph.D. (member)
- Yipeng Zhang, Ph.D. (member)
- Christine Burrill, Ph.D. (member)
- Jonathan Schmidt, M.S. (member) - to graduate fall 2018
- Kimberley Haar, M.S. (member)

Past Student Advisees

- Shyla Kupis, undergraduate Math, 2015, now PhD student at Clemson University; NSF-Graduate Research Fellowship recipient in 2017.

Academic Advisor – Graduate Students

- Jeremy McComas, M.S. Geology; start Fall 2018
- Morgan Nasholds, M.S. Geology; start Fall 2018

Advising – Undergraduate Students

- Cheyenne Gant (since Spring 2017)
- Jared Ciarico (since Fall 2017, works on undergraduate research project with me)
- Alyssa Roanhorse (start Fall 2018)

Fieldwork

2014-now	New Mexico	campaign GPS (SMB, Valles), cont. GPS maintenance
2018	Florida	seismometer & (borehole) tiltmeter installations
2016	Antarctica, Erebus	campaign GPS
2014	Antarctica, Erebus	campaign GPS
2014	Iceland	continuous GPS installations
2011	Katmai, Alaska	GPS campaign, International Volcanological Field School
2009-2012	Alaska	Differential GPS campaigns in coastal towns
2009	Kamchatka, Russia	Field school at Mutnovsky and Gorely volcanoes
2008-2010	Kamchatka, Russia	GPS work for volcano deformation (Bezymianny, Karymsky 2008)
2008	Iceland	field assistant, examination of the Skerin ridge, Eyafjallajökull
2007-2012	Alaska	GPS campaigns
2006	Iceland	field assistant, GPS campaigns: Highlands and Skeiðarárjökull

Continuous GPS/GNSS Networks

2014-now	Iceland	installation, open data, maintenance of 8 stations around Holuhraun eruption (with Icelandic Meteorological Office)
2014-now	New Mexico	open data, maintenance of 4 stations on Socorro Magma Body (2 NMT, 2 Georgia Tech)
2018-now	New Mexico	installation, & maintenance of 7 temporary continuous GPS stations in Mesilla and Rincorn Basins, NM (open data likely Spring 2019)

Popular Recognition

March 11, 2011 Tohoku-oki Earthquake Response

- $>$ 80,000 YouTube views of animations of Japan's continuous GPS data showing the evolution

of permanent and dynamic displacements generated by the earthquake
- > 37,000 unique visitors of my response website: http://www.grapenthin.org/notes/2011_03_11-tohoku-oki/
- > 5,000 views of invited presentation on slideshare.net: http://www.slideshare.net/rgrapenthin/visualization-of-the-seismic-waves-and-permanent-displacements
- Animations featured in National Geographic video: "Rare Video: Japan Tsunami" http://video.nationalgeographic.com/video/news/japan-tsunami-2011-vin
- Figure showing dynamic features of the event reproduced in Global – The International Briefing, Issue 6, second quarter 2011
- Paper (see Publication 4) covered by OurAmazingPlanet and syndicated outlets: http://www.ouramazingplanet.com/1960-3d-japan-quake-animation.html

Kamchatka PIRE Project

- Project was featured in one episode of the 4 part documentary "The Pacific Ring of Fire" for French/German TV station ARTE

Other Research News Coverage

- Paper 11 *The 2014 Mw 6.0 Napa earthquake, California: Observations from real-time GPS-enhanced earthquake early warning* was Science Editor's Choice (Science, Vol. 346, Issue 6214, page 1197) and covered by KQED Science.
- Paper 9 *Volcanic plume height correlated with magma pressure change at Grímsvötn volcano, Iceland* gained significant traction and was covered by Nature News, phys.org, Ars Technica, Live Science and others

Community Service

- BSSA Associate Editor (2018-present, 12 papers handled/in progress since May 2018)
- UNAVCO Geodetic Data Services Advisory Committee (GDSAC) (2015-present)
- UNAVCO GNSS Data Products Subcommittee (liaison to GDSAC) (2017-present)
- USGS ShakeAlert Geodesy Committee (2016-2018)
- AGU Outstanding Student Presentation Judge: 2012, 2013, 2016, 2017
- Reviewer for BSSA, Earth and Planetary Science Letters, Earth Planets Space, Geografiska Annaler, Geophysical Research Letters, Geoscience Letters, International Association of Geodesy Symposia, Journal of Asian Earth Sciences, Journal of Atmospheric and Oceanic Technology, Journal of Geodesy, Journal of Geophysical Research, Journal of Seismology, Journal of Volcanology and Geothermal Research, PLOSOne, Proceedings of the National Academy of Sciences, Seismological Research Letters, Scientific Reports, Tectonics, Transactions on Geoscience and Remote Sensing,
- proposal reviews for NSF, NASA, BSF (US-Israeli Bi-national Science Foundation), NZ Earthquake Commission, FONDECYT (Chilean National Science and Technology Commission)

Department & University Service

- Geology, Geophysics & Geochemistry Grad Student Admissions Chair
- Geology, Geophysics & Geochemistry Grad Student Coordinator
- Department Computing Committee
- 2017/18: E&ES Department Seminar co-organizer, established distinguished lecture series & distinguished alumni lecture
- Several faculty search committees (member, co-chair)

Publications (* student author, + postdoc author)

Under Review

1. [+]Ruhl, C., D. Melgar, A. Chung, **R. Grapenthin**, and R.M. Allen, Quantifying the Value of Real-time Geodetic Constraints on Earthquake Early Warning using a Global Seismic and Geodetic Dataset, *under review at JGR.*
2. **Grapenthin, R.**, S. Kelly, M. Person, and M. Folsom, Decadal-scale aquifer dynamics and structural complexities at a municipal wellfield revealed by 25 years of InSAR and recent groundwater temperature observations. *under review at Water Resources Research*
3. Sigmundsson, F., V. Pinel, **R. Grapenthin**, A. Hooper, S. Halldórsson, P. Einarsson, B. Ófeigsson, E. Heimisson, K. Jónsóttir, M.T. Gudmundsson, K. Vogfjord, M. Parks, S. Li, V. Drouin, H. Geirsson, S. Dumont, H.M. Fridriksdóttir, G. Gudmundsson, T. Wright, and T. Yamasaki, Magma accumulation and extraction from buoyant magma bodies in viscoelastic crust. *under review at Nature*

In Preparation

1. **Grapenthin, R.**, A. Komjathy, R. Bürgmann, Precursor or No? Review of Earthquake Precursors seen with GNSS in the Ionosphere, *in prep. for SRL*
2. **Grapenthin, R.**, E. D'Anastasio, and S. Hreinsdóttír, GNSS Clips: Cycle slip during the 2016 M_w7.8 Kaikōura Earthquake, New Zealand. *in prep. for GRL*
3. **Grapenthin, R.** et al., Post-rifting deformation following the 2014 Holuhraun eruption, Iceland, *in prep. for JGR.*

Published

18. **Grapenthin, R.**, S. Hreinsdóttir, and A. van Eaton, *Volcanic Hail Detected With GPS: The 2011 Eruption of GrÃ¡msvÃ¶tn Volcano, Iceland*, 2018, GRL, 45(22), 12,236-12,243, doi:10.1029/2018GL080317.
17. Murray, J.R., B.W. Crowell, **R. Grapenthin**, K. Hodgekinson, J.O. Langbein, T. Melbourne, D. Melgar, S.E. Minson, and D.A. Schmidt, *Development of a Geodetic Component for the U. S. West Coast Earthquake Early Warning System*, 2018, SRL, 89(6), 2322-2336, doi:10.1785/0220180162.
16. [*]Zhang, Y., M. Person, V. Voller, D. Cohen, J. McIntosh, and **R. Grapenthin**, *Hydromechanical Impacts of Pleistocene Glaciations on Pore Fluid Pressure Evolution, Rock Failure, and Brine Migration within Sedimentary Basins and the Crystalline Basement*, 2018, Water Resources Research, doi:10.1029/2017WR022464.
15. Sigmundsson, F., M. Parks, R. Pedersen, K. Jónsdóttir, B.G. Ófeigsson, **R. Grapenthin**, S. Dumont, P. Einarsson, V. Drouin, A.R. Hjartardóttir, M.T. Gudmundsson, H. Geirsson, S. Hreinsdóttir, E. Sturkell, E.R. Heimisson, Ãð. Högnadóttir, A. Hooper, K. VogfjörÃř, T. Barnie, M. Roberts, 2018, *Magma movements in volcano plumbing systems and their associated ground deformation*, In "Volcanic and Igneous Plumbing Systems", edited by Steffi Burchardt. doi:10.1016/B978-0-12-809749-6.00011-X.
14. **Grapenthin, R.**, M. West, C. Tape, M. Gardine, J. T. Freymueller, *Single-frequency instantaneous GNSS velocities resolve dynamic ground motion and basin resonance of the 2016 M_w7.1 Iniskin Earthquake, Alaska.* SRL, doi:10.1785/0220170235.
13. [+]Ruhl, C., D. Melgar, **R. Grapenthin**, and R.M. Allen, 2017, *The Value of Real-Time GNSS to Earthquake Early Warning*, Geophys. Res. Lett., 44(16), 8311-8319, doi:110.1002/2017GL074502.
12. **Grapenthin, R.**, M. West, and J. T. Freymueller, 2017, *The Utility of GNSS for Earthquake Early Warning in Regions with Sparse Seismic Networks*, BSSA, doi:10.1785/0120160317 (UNAVCO science snapshot on this: unavco.org/science/snapshots/technology/2017/grapenthin.html).
11. **Grapenthin, R.**, I.A. Johanson, R.M. Allen, 2014, *The 2014 M_w 6.0 Napa earthquake, California: Observations from real-time GPS-enhanced earthquake early warning*, Geophys. Res. Lett., doi:10.1002/2014GL061923, Science Editor's Choice: Science, Vol. 346, Issue 6214, page 1197.
10. **Grapenthin, R.**, I.A. Johanson, R.M. Allen, 2014, *Operational real-time GPS-enhanced earthquake early warning*, J. Geophys. Res., 119(10), 7944-7965, doi:10.1002/2014JB011400

9. Hreinsdóttir, S., F. Sigmundsson, M. Roberts, H. Björnsson, **R. Grapenthin**, P. Arason, Th. Árnadóttir, J. Hólmjárn, H. Geirsson, R.A. Bennett, M.T. Gudmundsson, B. Oddsson, B.G. Ófeigsson, T. Villemin, T. Jónsson, E. Sturkell, Á. Höskuldsson, G. Larsen, T. Thordarson, B.A. Óladóttir, 2014, *Volcanic plume height correlated with magma pressure change at Grímsvötn volcano, Iceland* Nature Geoscience, doi:10.1038/ngeo2044 (News & Views on this: doi:10.1038/ngeo2064, Nature News coverage: doi:10.1038/nature.2014.14498)
8. **Grapenthin, R.**, 2014, CrusDe*: A plug-in based simulation framework for composable* Crus*tal* De*formation simulations*, Computers & Geosciences, 62, 168-177, doi:10.1016/j.cageo.2013.07.005
7. **Grapenthin, R.**, J. T. Freymueller, S. S. Serovetnikov, 2013, *Surface Deformation of Bezymianny Volcano, Kamchatka, Recorded by GPS: The Eruptions from 2005-2010 and Long-term, Long-wavelength Subsidence*, JVGR, 263, 58-74, doi:10.1016/j.jvolgeores.2012.11.012
6. **Grapenthin, R.**, J. T. Freymueller, A. M. Kaufman, 2013, *Geodetic Observations during the 2009 eruption of Redoubt Volcano, Alaska*, JVGR, 259, 115-132, doi:10.1016/j.jvolgeores.2012.04.021
5. **Grapenthin, R.**, 2011, *Computer Programing for Geosciences: Teach Your Students How to Make Tools*, EOS, Vol. 92, Issue 50, pp. 469–470, doi:10.1029/2011EO500010
4. **Grapenthin, R.** and J. T. Freymueller, 2011, *The dynamics of a seismic wave field: Animation and analysis of kinematic GPS data recorded during the 2011 Tohoku-oki earthquake, Japan*, Geophys. Res. Lett., 38, L18308, doi:10.1029/2011GL048405 – **GRL Editors' Highlight**
3. Ófeigsson, B.G., A. Hooper, F. Sigmundsson, E. Sturkell, and **R. Grapenthin**, 2011, *Deep magma storage at Hekla volcano, Iceland, revealed by InSAR time series analysis*, J. Geophys. Res., 116, B05401, doi:10.1029/2010JB007576
2. **Grapenthin, R.**, B. G. Ófeigsson, F. Sigmundsson, E. Sturkell, and A. Hooper, 2010, *Pressure sources versus surface loads: Analyzing volcano deformation signal composition with an application to Hekla volcano, Iceland*, Geophys. Res. Lett., 37, L20310, doi:10.1029/2010GL044590
1. **Grapenthin, R.**, F. Sigmundsson, H. Geirsson, Th. Árnadóttir, V. Pinel, 2006, *Icelandic rhythmics: Annual modulation of land elevation and plate spreading by snow load*, Geophys. Res. Lett., 33, L24305, doi:10.1029/2006GL028081

Significant Reports & White Papers

4. Holt, B., **R. Grapenthin**, A. Borsa, J. Haase, George Hajj, B. Hammond, T. Herring, and H. Martens, 2018. UNAVCO GNSS Data Products Subcommittee Report, prepared for UNAVCO Geodetic Data Services Advisory Committee and UNAVCO Management, 16 pp.
3. **Grapenthin, R.**, T. Fischer, Rick Aster, Jessica Larsen, Craig Cary, and Nelia Dunbar, 2016. A Vision for a Facility Supporting Antarctic Volcano Studies, submitted to NSF & Mount Erebus Research Community.
2. 3 contributions to *The Benefits of Enhanced Earthquake Monitoring and Potential Earthquake Early Warning in Alaska – A Stakeholder Survey*, 2016. Developed by the Alaska Seismic Hazards Safety Commission for the Office of Alaska Governor Bill Walker; http://seismic.alaska.gov/presentations_reports.php
1. **Grapenthin, R.**, and F. Sigmundsson, 2006. Green's Functions and Crustal Deformation - Manual and Examples - Institute of Earth Sciences, University of Iceland, Nordic Volcanological Center, Report 0602, 30 pp.

Invited Presentations

11/2018 Re-examining our Grand Challenges in Geodesy Workshop, East Lansing, USA.
08/2018 University of Alaska Fairbanks, Alaska Earthquake Center Seminar
02/2018 University of Oregon, Geology Seminar
03/2016 Department of Earth and Planetary Science, University of New Mexico, Department Seminar
03/2016 ShakeAlert Research Meeting, Caltech, California, USA.
11/2015 Earthquake Early Warning in Subduction Zones, UC Berkeley, California, USA.
06/2015 EarthScope National Meeting, Stowe, Vermont, USA.

04/2015 School of Earth Sci. and Env. Sustainability, Northern Arizona University, Department Seminar
03/2014 Department of Terrestrial Magnetism, Carnegie Institution Washington, Department Seminar
02/2014 South Dakota School of Mines and Technology, Department Seminar
01/2014 New Mexico Tech, Department Seminar
10/2013 Cornell University, Department Seminar and Active Tectonics lecture
04/2013 University of Oregon, Geology Seminar
03/2013 University of Alaska, Seismology Brown Bag Seminar
01/2013 Central Washington University, Geology Seminar
12/2012 Northern California GPS User Group Meeting
07/2012 USGS, Earthquake Science Center Seminar, Menlo Park, CA (video)
05/2012 University of Iceland, Nordvulk Seminar, Reykjavik, Iceland
05/2012 Humboldt-University, METRIK Seminar, Berlin, Germany
03/2012 UC Berkeley, Seismological Laboratory Seminar, Berkeley, CA
05/2011 Real-time GPS for Seismology and other Applications Workshop, Austin, TX.

Conference Presentations

* – presented for first author ° – invited # – student first author + – post-doc first author

2017–now

93. Y. Kaneko, Y. Ito, B. Chow, L.M. Wallace, C. Tape, E. D'Anastasio, **R. Grapenthin**, R. Hino, *Extremely long duration of ground motion in the source areas of slow slip*, AGU Fall Meeting, 10-14 Dec. 2018, Washington D.C., USA.
92. E. Snyder#, **R. Grapenthin**, P.R. Kyle, *Mechanisms of deformation at Erebus volcano, Antarctica using 20 years of GPS Observations*, AGU Fall Meeting, 10-14 Dec. 2018, Washington D.C., USA.
91. A. Chung, C.J. Ruhl, **R. Grapenthin**, R.M. Allen, D. Melgar, *Ground Motion Estimates in Earthquake Early Warning: Performance with Global Seismic and Geodetic Data Set*, AGU Fall Meeting, 10-14 Dec. 2018, Washington D.C., USA.
90. A.J. Luhmann, S. Bilek, **R. Grapenthin**, *Seismic Monitoring of Artificial and Natural Recharge Events in Karst Aquifers*, AGU Fall Meeting, 10-14 Dec. 2018, Washington D.C., USA.
89. **R. Grapenthin**, M. Folsom, S. Kelley, M.A. Person, *Land Surface Rebound and Groundwater Temperature Fluctuations During AquiferRecovery at The Buckman Municipal Wellfield, Santa Fe New Mexico (USA)*, AGU Fall Meeting, 10-14 Dec. 2018, Washington D.C., USA.
88. **R. Grapenthin**, and A. Rinehart, *A Space-based Geofluids Observatory for New Mexico*, New Mexico Water Resources Research Institute, 63rd Annual Water Research Conference, 17-18 October 2018, Las Cruces, NM, USA.
87. F. Sigmundsson, S. Li, V. Drouin, M. T. Gudmundsson, S. A. Halldorsson, A. Hooper, V. Pinel, P. Einarsson, M. Parks, B. G. Ofeigsson, K. Jonsdottir, K. Vogfjord, **R. Grapenthin**, E. R. Heimisson, H. Geirsson, S. Dumont, *Constraints on magma accumulation, storage and extraction in gravitational viscoelastic Earth: Understanding the Bardarbunga 2014-2015 caldera collapse*, Cities on Volcanoes 10, 2-7 September 2018, Napoli, Italy.
86. S. Kelley, M. Folsom, **R. Grapenthin**, M. Person, *Groundwater Temperature Rise During Aquifer Recovery at the Buckman Municipal Well Field, Santa Fe, New Mexico*, NM Geological Society Annual Spring Meeting, 13 April 2018, Socorro, USA.
85. Sigmundsson, F., M.T. Gudmundsson, S.A. Halldorsson, A. Hooper, V. Pinel, P. Einarsson, M. Parks, B.G. Ófeigsson, K. Jónsdóttir, K. Vogfjörd, **R. Grapenthin**, S. Li, V. Drouin, E.R. Heimisson, H. Geirsson, S. Dumont, *Physical modeling constraints on thickness and geometry of the melt body feeding the 2014-2015 diking and eruption, and the triggering of caldera collapse, in the Bardarbunga volcanic system*, Geoscience Society of Iceland Meeting, March 9, 2018, Reykjavik, Iceland.
84. C. Ruhl+, D. Melgar, **R. Grapenthin**, R.M. Allen, *Evaluating Geodetic Alarm System Alert Accuracy and Timeliness using Synthetic Earthquakes in Cascadia and California*, UNAVCO Science Workshop, March 27-29, 2018, Broomfield, CO, USA.

83. Sigmundsson, F., M.T. Gudmundsson, S.A. Halldorsson, A. Hooper, V. Pinel, P. Einarsson, M. Parks, B.G. Ófeigsson, K. Jónsdóttir, K. Vogfjörd, **R. Grapenthin**, S. Li, V. Drouin, E.R. Heimisson, H. Geirsson, S. Dumont, *Physical modeling constraints on thickness and geometry of the melt body feeding the 2014-2015 diking and eruption, and the triggering of caldera collapse, in the BÃąrÃřarbunga volcanic system*, UNAVCO Science Workshop, March 27-29, 2018, Broomfield, CO, USA.
82. **R. Grapenthin**, S. Li, B. Ofeigsson, F. Sigmundsson, V. Drouin, S. Hreinsdottir, M. Parks, H. M. Fridriksdottir, *Post-eruptive Deformation following the 2014 Holuhraun Rift, Iceland*, UNAVCO Science Workshop, March 27-29, 2018, Broomfield, CO, USA.
81. **R. Grapenthin**, S. Li, B. Ofeigsson, F. Sigmundsson, V. Drouin, S. Hreinsdottir, M. Parks, H. M. Fridriksdottir, *Post-eruptive Deformation following the 2014 Holuhraun Rift, Iceland*, AGU, 11-15 Dec 2017, New Orleans, USA.
80. C. Ruhl^{+}, D. Melgar, **R. Grapenthin**, R.M. Allen, *Geodetic Finite-Fault-based Earthquake Early Warning Performance for Great Earthquakes Worldwide*, AGU, 11-15 Dec 2017, New Orleans, USA.
79.* S. Bilek, A. Luhmann, **R. Grapenthin**, *Karst aquifer characterization using geophysical remote sensing and modeling of dynamic recharge events*, AGU, 11-15 Dec 2017, New Orleans, USA.
78. A. Luhmann, S. Bilek, **R. Grapenthin**, J. B. Martin, *Geophysical characterization of karst aquifers using dynamic recharge events*, GSA, 22-25 Oct 2017, Seattle, USA.
77.* M. Folsom$^{\#}$, S. Kelley, **R. Grapenthin**, M. Person, *Surface Rebound and Groundwater Temperature Rise during Aquifer Recovery at the Buckman Municipal Well Field, Santa Fe, New Mexico*, EarthScope Synthesis Workshop: Hydrological Applications of Geodetic Techniques, 25-27 Oct 2017, San Diego, USA.
76.* A. Luhmann, S. Bilek, **R. Grapenthin**, J. B. Martin, *Geophysical characterization of karst aquifers using dynamic recharge events*, EarthScope Synthesis Workshop: Hydrological Applications of Geodetic Techniques, 25-27 Oct 2017, San Diego, USA.
75. S. Bilek, A. Luhmann, **R. Grapenthin**, R. Diniakos, E. Morton, E. Alexander, S. Alexander, M. Larsen, J. Green, *Seismic monitoring of karst recharge events âĂŞ results from a pilot experiment*, GSA, 22-25 Oct 2017, Seattle, USA.
74. M. Folsom$^{\#}$, S. Kelley, **R. Grapenthin**, M. Person, *Surface Rebound and Groundwater Temperature Rise during Aquifer Recovery at the Buckman Municipal Well Field, Santa Fe, New Mexico*, Espanola Basin Technical Advisory Group Workshop, 12-13 October 2017, Santa Fe, USA.
73. D. Melgar, C. Ruhl, **R. Grapenthin**, R.M. Allen, *The value and role of GNSS in earthquake and tsunami early warning*, JpGU-AGU, 20-25 May 2017, Makuhari, Japan.
72. C. Ruhl^{+}, D. Melgar, **R. Grapenthin**, M. Aranha, R.M. Allen, *Testing a real-time GNSS-based earthquake and tsunami early warning system*, JpGU-AGU, 20-25 May 2017, Makuhari, Japan.
71. C. Ruhl^{+}, D. Melgar, **R. Grapenthin** M. Aranha, R.M. Allen, *Evaluating the Geodetic Alarm System (G-larmS) Performance using Synthetic Earthquakes*, SSA, 18-20 April 2017, Denver, USA.
70. C. J. Ruhl^{+}, D. Melgar, R. Grapenthin, M. Aranha, and R. M. Allen, *Evaluating the Geodetic Alarm System (G-larmS) Performance using Synthetic Earthquakes*, Offshore Geophysical Monitoring of Cascadia for Early Warning and Hazards Research, April 3-5, 2017, Seattle, USA.
69. C. Ruhl^{+}, **R. Grapenthin**, D. Melgar, M. Aranha, R.M. Allen, *West-Coast Wide Expansion and Testing of the Geodetic Alarm System (G-larmS)*, AGU Fall Meeting, 12-16. Dec 2016, San Francisco, CA, USA.
68. J. Freymueller, J. Elliott, **R. Grapenthin**, *GPS/GNSS for Earthquake, Tsunami and Volcano Hazards: Examples of Assessments, Response, and Real-time Monitoring in Alaska*, AGU Fall Meeting, 12-16. Dec 2016, San Francisco, CA, USA.
67.$^{\circ}$ Murray, J.R., B. Crowell, **R. Grapenthin**, K. Hodgkinson, T. Melbourne, D. Melgar, S. Minson, D. Schmidt, *Toward incorporation of real-time GNSS data in the West Coast Earthquake Early Warning system*, 11th Joint Meeting U.S.-Japan Natural Resources Panel on Earthquake Research, 16-18. November 2016, Napa, CA, USA.

66. A.J. Luhmann, S.L. Bilek, R.S. Diniakos, E.A. Morton, A. Rinehart, E.C. Alexander, Jr., S.C. Alexander, M. Larsen, J.A. Green, **R. Grapenthin**, G.A. Spinelli, *Delineating karst conduit location using geophysical signals generated during recharge events*, GSA Annual Meeting, 25-28. September 2016, Denver, CO, USA.
65. C. Ruhl[+], D. Melgar, **R. Grapenthin** M. Aranha, R.M. Allen, *Fakequakes: Earthquake Rupture Scenarios for California and Cascadia*, SCEC Annual Meeting, 11-14 September 2016, Palm Springs, USA.
64.° Melgar, D., R. M. Allen, S. Barrientos, **R. Grapenthin**, M. Aranha, *Local Tsunami Warnings and the role of high-rate GNSS in Earthquake Early Warning*, Japan Geoscience Union Annual Meeting 2016, 22-26th May 2016.
63. **Grapenthin, R.**, M. Aranha, D. Melgar, R.M. Allen, *Rapid Finite Faults with Real-Time GPS: The Geodetic Alarm System*, SSA Annual Meeting, 20-22. April 2016, Reno, NV, USA.
62. **Grapenthin, R.**, J.T. Freymueller, *The 2016 M_w 7.1 Iniskin, Alaska, Earthquake as seen by High-rate GPS and Early Warning Potential*, SSA Annual Meeting, 20-22. April 2016, Reno, NV, USA.
61. **Grapenthin, R.**, S. Hreinsdóttir, *GPS phase-residual and SNR analysis of the 2010 Eyafjallajökull and 2011 Grímsvötn ash plumes*, UNAVCO Science Workshop, 29-31. March 2016, Broomfield, CO, USA.
60.° **Grapenthin, R.**, M. Aranha, D. Melgar, R. M. Allen, *G-larmS: Overview and Updates*, ShakeAlert Research Meeting, 14-15th March 2016.

2011–2015

59. **Grapenthin, R.**, S. Hreinsdóttir, M. T. Gudmundsson, *The 2010 Eyjafjallajökull and 2011 Grímsvötn ash plumes as seen by GPS*, AGU Fall Meeting, 14-18. December 2015, San Francisco, USA, #G32A-03 (talk).
58.* Aranha, M., **R. Grapenthin**, D. Melgar, R.M. Allen, *Investigations on Real-time GPS for Earthquake Early Warning*, AGU Fall Meeting, 14-18. December 2015, San Francisco, USA, #S33B-2763 (poster).
57. Ófeigsson, B. and 19 others, *Deformation derived from GPS geodesy associated with Bárðabunga 2014 rifting event in Iceland*, AGU Fall Meeting, 14-18. December 2015, San Francisco, USA, #T51G-2998 (poster).
56. Frídriksdóttir[#], H. and 20 others, *Real-time GPS Monitoring of the 2014-2015 Bárðarbunga Rifting Event in Iceland*, AGU Fall Meeting, 14-18. December 2015, San Francisco, USA, #G41A-1005 (poster).
55.° **R. Grapenthin**, I. A. Johanson, and R. M. Allen *Operational Real-time GPS in Earthquake Early Warning*, EarthScope National Meeting, 14-17 June 2015, Stowe, Vermont, USA (talk).
54. Hellweg, M., R.M. Allen, I. Henson, I. Johanson, D. Neuhauser, **R. Grapenthin**, *ElarmS & GlarmS, UC Berkeley's Earthquake Early Warning Algorithms in CISN ShakeAlert*, SSA Annual Meeting, 21-23. April 2015, Pasadena, USA.
53. Hellweg, M., R.M. Allen, I. Henson, I. Johanson, D. Neuhauser, **R. Grapenthin**, *Earthquake Early Performance in the M 6.0 South Napa earthquake: UCB's algorithms ElarmS and GlarmS*, SSA Annual Meeting, 21-23. April 2015, Pasadena, USA.
52. **Grapenthin, R.**, I.A. Johanson, R.M. Allen, *G-larmS: An Infrastructure for Geodetic Earthquake Early Warning, applied to Northern California*, AGU Fall Meeting, San Francisco, Abstract: S32C-06 (talk).
51. **Grapenthin, R.**, I.A. Johanson, R.M. Allen, *The 2014 Mw 6.0 Napa Earthquake, California: Observations from Real-time GPS-enhanced Earthquake Early Warning*, AGU Fall Meeting, San Francisco, Abstract: S33F-4938 (poster).
50. Sigmundsson, F., S. Hreinsdottir, A. Hooper, **Ronni Grapenthin**, E. Heimisson, B. Ofeigsson, E. Sturkell, M. Roberts, M. T. Gudmundsson, A. Hoskuldsson, H. Bjornsson, P. Arason, M. Parks, S. Dumont, and V. Drouin, *Magma flow, eruption column and magma pressure change during 2010 Eyjafjallajökull and 2011 Grimsvötn eruptions, Iceland: Constraints from volcano geodesy on physical models of eruptive processes*, AGU Fall Meeting, San Francisco, Abstract: V34B-02 (talk).

49. Hudnut, K. W., S. Minson, M. Boese, C. Felizardo, I. Johanson, **R. Grapenthin**, B. Crowell, D. Schmidt, J. Murray, M. Lisowski, J. Langbein, D. Smith, D. Determan, V. Thomas, T. Melbourne, *The West Coast Earthquake Early Warning Global Navigation Satellite System Working Group*, AGU Fall Meeting, San Francisco, Abstract: S32C-03 (talk).
48. **Grapenthin, R.**, I.A. Johanson, R.M. Allen, *Operational Real-time GPS-enhanced Earthquake Early Warning*, 3rd International Conference on Earthquake Early Warning, Berkeley, California (talk).
47. **Grapenthin, R.**, I.A. Johanson, R.M. Allen, *Real-time GPS enhanced Earthquake Early Warning: The Northern California Setup*, The Future of PBO in the GAGE Facility (2013-2018) and After EarthScope Community Workshop, Breckenridge, Colorado (poster).
46. Allen, R., **R. Grapenthin**, L. Meng, et al., Designing a network-based earthquake early warning system for California AGU Fall Meeting, 2013, talk.
45. **Grapenthin, R.**, I. Johanson, R. Allen, G-larmS: Integrating Real-Time GPS into Earthquake Early Warning AGU Fall Meeting, 2013, poster.
44.° Werner, C., M.P. Poland, J.A. Power, A.J. Sutton, T. Elias, **Grapenthin, R.**, W.A. Thelen, Detecting deep crustal magma movement: Exploring linkages between increased gas emission, deep seismicity, and deformation AGU Fall Meeting, 2013, talk.
43. **Grapenthin, R.**, J.T. Freymueller, A.M. Kaufman, The 2009 Redoubt Eruption Observed with GPS: Aseismic Inflation, Mid-crustal Remobilization and Net-Deflation, GeoPrisms Aleutian Mini-Workshop, 2013, poster.
42. **Grapenthin, R.**, I. Johanson, R. Allen, Integrating Real-Time GPS into Earthquake Early Warning for Northern California, EarthScope National Meeting, Raleigh, NC, 2013, poster.
41. Hellweg, M., R.M. Allen, S. Colombelli, **R. Grapenthin**, I. Henson, I. Johanson, H.S. Kuyuk, D. Neuhauser, Operating and Improving Earthquake Early Warning for Northern California and tghe US West Coast, Seismological Society of America Annual Meeting, Salt Lake City, UT, 2013, talk.
40. Johanson, I., D. Dreger, **R. Grapenthin**, P. Lombard, Rapid Fault Determination from Real-Time GPS for ShakeMap, Seismological Society of America Annual Meeting, Salt Lake City, UT, 2013, poster.
39. **Grapenthin, R.**, I. Johanson, R. Allen, Integrating Real-Time GPS into Earthquake Early Warning for Northern California, Seismological Society of America Annual Meeting, Salt Lake City, UT, 2013, talk.
38.° **Grapenthin, R.** Volcano Deformation and Subdaily GPS Products, University of Oregon, 2013, talk.
37.° **Grapenthin, R.**, I. Johanson, R. Allen, Integrating Real-Time GPS into California's Earthquake Early Warning System, University of Alaska, Geophysical Institute, 2013, talk.
36.° **Grapenthin, R.** GPS – A Multi-Tool: Plumbing, Plumes, and Early Warning Central Washington University, 2013, talk.
35. **Grapenthin, R.**, J.T. Freymueller, Volcanic plumes monitored with GPS: The eruptions of Okmok 2008, and Redoubt 2009, Alaska, presented at 2012 Fall Meeting (NH14A-04), AGU, San Francisco, Calif., 03-07 Dec, talk.
34.° **Grapenthin, R.** Towards Real-time GPS in Earthquake Early Warning and Applications for Volcano Monitoring Northern California GPS User Group Meeting, 2012, talk.
33.° **Grapenthin, R.** Volcano Deformation and Subdaily GPS Products, Earthquake Science Center Seminar, USGS, 2012, talk.
32.° **Grapenthin, R.**, J.T. Freymueller, A.M. Kaufman, S.S. Serovetnikov, Sources and Plumes: GPS Observations at Redoubt Volcano, Alaska and Bezymianny Volcano, Kamchatka, Nordvulk Seminar, University of Iceland, 2012, talk.
31.° **Grapenthin, R.**, Earth–ComputerScience–Interface, METRIK Seminar, Humboldt-University, Berlin, Germany, 2012, talk.
30. **Grapenthin, R.**, J.T. Freymueller, S.S. Serovetnikov, Geodetic observations at Bezymianny Volcano, Kamchatka: The eruptions from 2005-2010 and long-term, long-wavelength subsidence as seen by the PIRE GPS network, EGU2012-384, 2012, EGU General Assembly 2012, talk.

29.* Hreinsdóttir, S., F. Sigmundsson, M. Roberts, Th. Árnadóttir, B. Ófeigsson, **R. Grapenthin**, E. Sturkell, T. Villemin, R. Bennett, and H. Geirsson, The 2010 Eyjafjallajökull and 2011 Grímsvötn eruptions: Insights from GPS geodesy, EGU2012-13577, EGU General Assembly 2012, talk.

28.° **Grapenthin, R.**, Volcano Geodesy on Gliding Timescales: Sources, Plumes, and Precursors, BSL Seminar, UC Berkeley, 2012, talk.

27. **Grapenthin, R.**, J.T. Freymueller, GPS and Volcanic Ash Plumes: The eruptions of Okmok 2008 and Redoubt 2009, Alaska, presented at 2012 UNAVCO Science Workshop, Boulder, Colorado., 27 Feb.- 01 Mar, poster.

26. **Grapenthin, R.**, J.T. Freymueller, A.M. Kaufman, Plumbing and Plumes: Geodetic Observations during the 2009 eruption of Redoubt Volcano, Alaska, presented at 2011 Fall Meeting (V32A-06), AGU, San Francisco, Calif., 04-09 Dec, talk.

25.* Hreinsdottir, S., **R. Grapenthin**, F. Sigmundsson, M.J. Roberts, J. Holmjarn, H. Geirsson, Th. Árnadottir, R.A. Bennett, T. Villemin, B.G. Ófeigsson, E.C. Sturkell, The 2011 Grímsvötn Eruption From High Rate Geodesy, presented at 2011 Fall Meeting (V34B-02), AGU, San Francisco, Calif., 04-09 Dec, talk.

24. Sigmundsson, F., S. Hreinsdottir, H. Bjornsson, Th. Arason, **R. Grapenthin**, M.J. Roberts, J. Holmjarn, H. Geirsson, Th. Árnadottir, R.A. Bennett, B. Oddsson, M.T. Gudmundsson, B.G. Ófeigsson, T. Villemin, E.C. Sturkell, Grímsvötn 2011 Explosive Eruption, Iceland: Relation between Magma Chamber Pressure Drop inferred from High Rate Geodesy and Plume Strength from Radar Observations From High Rate Geodesy, presented at 2011 Fall Meeting (V41E-08), AGU, San Francisco, Calif., 04-09 Dec, talk.

23. Lopez, T.M., J. Dehn, A. Belousov, D. Fee, H. Buurman, **R. Grapenthin**, S. Ushakov, Use of High Temporal Resolution Thermal Imagery of Karymsky's Volcanic Plume to Constrain Volcanic Activity and Elucidate Vent Processes, presented at 2011 Fall Meeting (V33A-2618), AGU, San Francisco, Calif., 04-09 Dec, poster.

22. Buurman, H., M.E. West, **R. Grapenthin**, Tracking a closing volcanic system using repeating earthquakes, presented at 2011 Fall Meeting (V53C-2634), AGU, San Francisco, Calif., 04-09 Dec, poster.

21. **Grapenthin, R.**, J.T. Freymueller, S.S. Serovetnikov, Surface deformation of Bezymianny Volcano, Kamchatka, recorded by GPS: The Eruptions from 2005–2010 and long-term, long-wavelength subsidence, 2011 JKASP Meeting, Petropavlovsk-Kamchatskii, Russia, August 25-30, talk.

20. Fernandes, R.M.S., J.T. Freymueller, M.S. Bos, **R. Grapenthin**, Evaluating the uncertainties of the estimated vertical velocities of Bezymianny GPS Network, 2011 JKASP Meeting, Petropavlovsk-Kamchatskii, Russia, August 25-30, talk.

19.° **Grapenthin, R.** and J.T. Freymueller, Tracking Earthquakes in 4D: The 2011 Tohoku-oki Event, Japan, Real-time GPS for Seismology and other Applications Workshop, 2011 EarthScope National Meeting, Austin, Texas, May 17-20, talk.

18. **Grapenthin, R.** and J.T. Freymueller, Capturing a seismic wave field: Animation of kinematic GPS data recorded during the 2011 Tohoku-oki Earthquake, Japan, presented at 2011 EarthScope National Meeting, Austin, Texas, May 17-20, poster

2006–2010

17. **Grapenthin, R.**, J.T. Freymueller, S.S. Serovetnikov, The December 2009 and May 2010 eruptions of Bezymianny volcano, Kamchatka: Interpretation of the GPS Record, Abstract V33D-04, presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec, talk

16. Arendt, A., J.T. Freymueller, S.B. Luthke, **R. Grapenthin**, Modeling Elastic Uplift Associated with GRACE Hydrology Solutions for Southeast Alaska, Abstract G51C-0693, presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec, poster

15. **Grapenthin, R.**, J.T. Freymueller, P.F. Cervelli, Analysis of the geodetic record of the 2009 eruption of Redoubt Volcano, Alaska, Geophysical Research Abstracts, Vol. 12, EGU2010-12560, 2010, EGU General Assembly 2010, poster

13. **Grapenthin, R.**, F. Sigmundsson, B.G. Ófgeisson, E. Sturkell, Surface loading affects internal pressure source characteristics derived from volcano deformation signals, Geophysical Research Abstracts, Vol. 12, EGU2010-12520, 2010, EGU General Assembly 2010, poster

12. Freymueller, J.T., **R. Grapenthin**, A.A. Arendt, S. Miura, T. Sato, Y. Ohta, Seasonal Height Variations in Alaska Caused by Cryospheric and Hydrospheric Change, IAG 2009, Buenos Aires, 2009, talk
11. **Grapenthin, R.**, J.T. Freymueller, V. Bakhtiarov, S. Serovetnikov, A Point in a Vulcanian Eruption: Decomposing the Continuous GPS Record of the 2008 Karymsky Eruption using Wavelets, JKASP 2009, Fairbanks, 2009, poster
10. Shipman, J.S., T.M. Kayzar, **R. Grapenthin**, O.V. Kuvikas, T.M. Lopez, O.K. Neill, W.A. Thelen, Partners in International Research and Eduacation: Student Contributions to the Collaborative Investigation of Bezymianny, Shiveluch, and Karymsky Volcanoes, Kamchatka, Russia and Mount St. Helens, WA, USA, Eos Trans. AGU, 89(52), Fall Meet. Suppl., Abstract V43A-2147, 2008, poster
9. **Grapenthin, R.**, CrusDe: A plug-in based simulation framework for composable CRUStal DEformation simulations, Eos Trans. AGU, 89(52), Fall Meet. Suppl., Abstract IN11A-1017, 2008, poster
8. **Grapenthin, R.**, F. Sigmundsson, E. Sturkell, B. Ófeigsson, Pressure sources vs. surface loads: Analyzing deformation signal composition at volcanoes – a case study at Hekla volcano, Iceland, IAVCEI 2008 General Assembly, 17-22 August 2008, Reykjavik, Iceland, talk
7. **Grapenthin, R.**, F. Sigmundsson, R. Pedersen, V. Pinel, Surface Loading Effects Complicate the Derivation of Internal Pressure Source Characteristics from Volcano Deformation Signals, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract V53C-1421, 2007, poster
6. Ófeigsson, B., P. Einarsson, F. Sigmundsson, E. Sturkell, H. Ólafsson, **R. Grapenthin**, H. Geirsson, Crustal response to the formation of the Hálslón reservoir in Iceland, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract T13A-0495, 2007, poster
5. **Grapenthin, R.**, F. Sigmundsson, H. Geirsson, Th. Árnadóttir, V. Pinel, Icelandic rhythmics: Annual modulation of land elevation and plate spreading by snow load, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract G33B-0055, 2006, poster – **AGU Geodesy Section Outstanding Student Paper Award**
4. Ófeigsson, B., P. Einarsson, F. Sigmundsson, E. Sturkell, H. Ólafsson, **R. Grapenthin**, H. Geirsson, Expected Crustal Movements due to the Planned Hálslón Reservoir in Iceland, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract T13A-0495, 2006, poster
3. **Grapenthin, R.**, F. Sigmundsson, H. Geirsson, T. Árnadóttir, V. Pinel, Iceland's annual snow load revised: a plain model, *Nordic Volcanological Center, Fall Seminar Series*, 2006, talk
2. **Grapenthin, R.** and F. Sigmundsson, Crustal subsidence due to the Hálslón reservoir: predicting the Earth's response, *Geoscience Society of Iceland, Spring Meeting 2006*, Abstract Volume, p. 36, 2006, poster
1. Sigmundsson, F., P. Einarsson, E. Sturkell, B. Ófeigsson, **R. Grapenthin**, H. Geirsson, S. Jakobsdóttir, P. Halldórsson, Geologic hazards in the Kárahnjúkar area and their monitoring: Will the Hálslón reservoir trigger deformation, fault slip and fracture opening? *Geoscience Society of Iceland, Spring Meeting 2006*, Abstract Volume, p. 17, 2006, talk

Other Publications

Theses

2. **Grapenthin, R.**, Volcano Deformation and Subdaily GPS Products, *Dissertation, University of Alaska Fairbanks*, 167pp., 2012
1. **Grapenthin, R.**, CrusDe: A plug-in based simulation framework for composable CRUstal DEformation simulations using Green's functions, *Thesis, Humboldt-University Berlin*, 127pp., 2007