



# AGU 2017

EARTHSCOPE-RELATED PRESENTATIONS  
AND POSTERS

*Explore the variety of research fueled by  
EarthScope data*

**Join us for the EarthScope Town Hall Meeting**  
**Wednesday, 12:30 - 13:30**  
**New Orleans Ernest N. Morial Convention Center - 225-227**  
[TH33D EarthScope Science and Synthesis](#)

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**MONDAY, 11 DECEMBER 2017**

**POSTERS**

**08:00 - 12:20 | Poster Hall D-F**

[ED11C-0136 SeismoDome: Sonic and visual representation of earthquakes and seismic waves in the planetarium](#)

**Benjamin K Holtzman**, Lamont-Doherty Earth Observatory; **Jason Candler**, New York University; **Douglas Repetto**, Lamont Doherty Earth Observatory, Columbia Univ.; **Martin J Pratt**, Washington University in St Louis; **Arthur Paté**, Lamont Doherty Earth Observatory, Columbia Univ.; **Matthew Turk**, University of Illinois at Urbana Champaign; **Lucia Gualtieri**, Princeton University; **Daniel B Peter**, ETH Swiss Federal Institute of Technology Zurich; **Vivian Trakinski**, American Museum of Natural History; **Denton S. S. Ebel**, American Museum of Natural History; **Joachim Gossmann**, Staatliche Hochschule für Musik; **Nolan Lem**, Stanford University

[G11C-0717 Preparing the Plate Boundary Observatory GNSS Network for the Future](#)

**Kenneth Emil Austin**, UNAVCO, Inc. Boulder; **Christian P Walls**, UNAVCO, Inc. Forestville; **Timothy Dittman**, UNAVCO, Inc. Boulder; **Doerte Mann**, UNAVCO; **Eleanor S Boyce**, UNAVCO, Inc. Anchorage; **Andre Basset**, Unavco Inc.; **Adam C Woolace**, UNAVCO, Inc. Boulder; **Ryan Turner**, Unavco Inc.; **Shawn Lawrence**, Unavco Inc.; **Summer Rhoades**, UNAVCO, Inc. Boulder;

Chad Pyatt, UNAVCO, Inc.; Heidi Willoughby, UNAVCO, Inc. Anchorage; Karl Feaux, UNAVCO, Inc.; Glen S Mattioli, UNAVCO

[S11C-0597 Filling the monitoring gaps across the US Arctic by permanently adopting USArray stations](#)

**Helena Buurman**, University of Alaska Fairbanks, Alaska Earthquake Center; Michael Edwin West, University of Alaska Fairbanks

[S11C-0616 Monitoring Instrument Performance in Regional Broadband Seismic Network Using Ambient Seismic Noise](#)

**Fang Ye**, Jilin University; Shixue Lyu, Jilin University; Jun Lin, Jilin University

[T11A-0430 Crustal Structure and Seismic Anisotropy in the St-Lawrence/Charlevoix Region, Eastern Canada](#)

**Fiona Ann Darbyshire**, University of Quebec at Montreal UQAM; Mélanie Mathieu, GEOTOP-UQAM; Vanessa Sanchez, GEOTOP-UQAM; Allison L. Bent, Geological Survey of Canada; Yajing Liu, McGill University

[T11A-0431 Earthquake Source Parameter Estimates for the Charlevoix and Western Quebec Seismic Zones in Eastern Canada](#)

**John Onwuemeka**, McGill University; Yajing Liu, McGill University; Rebecca M Harrington, McGill University, Ruhr-Universität Bochum; Andres Felipe Peña-Castro, Ruhr-Universität Bochum, McGill University; Alba Mar Rodriguez Padilla, College of the Atlantic; Fiona Ann Darbyshire, University of Quebec at Montreal UQAM

[T11A-0432 Earthquake source parameter and focal mechanism estimates for the Western Quebec Seismic Zone in eastern Canada](#)

**Alba Mar Rodriguez Padilla**, College of the Atlantic and McGill University; John Onwuemeka, McGill University; Yajing Liu, McGill University; Rebecca M Harrington, McGill University, Ruhr University Bochum

[T11A-0434 Lithospheric Structure of the Eastern North American Margin Resolved by Teleseismic Receiver Function Analysis](#)

**Cong Li** and Haiying Gao, University of Massachusetts Amherst

[T11A-0435 Local Upper Mantle Upwelling beneath New England: Evidence from Seismic Anisotropy.](#)

**Vadim L Levin**, Rutgers University; Maureen D Long, Yale University; Ivette Lopez, Yale University; Yiran Li, Rutgers University; Peter Alexander Skryzalin, Rutgers University New Brunswick

SESSION POSTER:

[T11A-0437 Shear Wave Velocity Structure Beneath Eastern North America from Rayleigh Wave Tomography](#)

**Zhongmin Tao**, Aibing Li, and Yao Yao, University of Houston

[T11A-0442 Lithospheric structure and relationship to seismicity beneath the Southeastern US using receiver functions](#)

**Erin Cunningham**, University of Maryland College Park; Vedran Lekic, University of Maryland

[T11C Something Borrowed, Something New: Integrating EarthScope and Geologic Results to Better Constrain the 4-D Evolution of North America Posters](#)

**Primary Convener:** Heather A Ford, University of California Riverside

[T11C-0471 Tomotectonic constraints on the assembly of Jura-cretaceous western North America, and a southwest Pacific analogue](#)

**Mitchell G Mihalynuk**, British Columbia Geological Survey; Karin Sigloch, University of Oxford

[T11C-0472 Petrologic Constraints on the Exhumation of the Sierra Blanca Metamorphic Core Complex \(AZ\)](#)

**Kohl M Koppens** and Raphael Gottardi, University of Louisiana at Lafayette

[T11C-0473 The significance of the Medicine Hat Block \(southern Alberta, northern Montana\) in the assembly of Laurentia: New interpretations from recent single grain zircon geochronological and geochemical data](#)

**Blake Oswell LaDouceur**, University of Mississippi Main Campus; Jennifer Gifford, University of Mississippi; Shawn Malone, Ball State University; Bill Davis, Section Head, Ottawa, ON, Canada

[T11C-0474 Crustal Structure and Subsidence of the Williston Basin: Evidence from Receiver Function Stacking and Gravity Modeling](#)

**Jianguo Song**, China University of Petroleum; Kelly Hong Liu, Missouri University of Science and Technology; Youqiang Yu, Tongji University; Kevin Lee Mickus, Missouri State University; Stephen S Gao, Missouri University of Science and Technology

[T11C-0475 Magnetotelluric imaging of the crustal structure of the Great Slave Lake shear zone in Northwest Alberta](#)

**Enci WANG**, Martyn Jonathan Unsworth, and Tom Chacko, University of Alberta

[T11C-0476 New Constraints on Upper Mantle Structure Underlying the Diamondiferous Central Slave Craton, Canada, from Teleseismic Body Wave Tomography](#)

**Clément Esteve**, Andrew J Schaeffer, and Pascal Audet, University of Ottawa

[T11C-0477 Looking for the Edge: Does Lateral Change in Azimuthal Anisotropy Mark the Limit of the North American Craton?](#)

*Xiaoran Chen, Rutgers University New Brunswick; Vadim L Levin, Rutgers University; Yiran Li, Rutgers University; and Huaiyu Yuan, ARC Centre of Excellence for Core to Crust Fluid Systems*

[T11C-0478 Improved Seismic Images of the Pacific Northwest Interior, With a Focus on the Region of the Columbia River Flood Basalts and Central Idaho](#)

*A. Christian Stanciu, Eugene Humphreys, University of Oregon; and Robert W Clayton, California Institute of Technology*

[H11B-1178 A Comparison of Vertical Deformations Derived from Space-based Gravimetry, Ground-based Sensors, and Model-based Hydrologic Loading over the Western United States](#)

*Gaohong Yin, University of Maryland College Park; Barton A Forman, University of Maryland College Park; Bryant D Loomis, SGT Inc. at NASA Goddard Space Flight Center; Scott B Luthcke, NASA Goddard Space Flight Center*

**Monday, 13:40 - 18:00 | Poster Hall D-F**

[DI13A-0288 Seismic Migration Imaging of the Mantle Transition Zone Beneath Continental US with Receiver Functions](#)

*Han Zhang, University of New Mexico Main Campus; Brandon Schmandt, University of New Mexico Main Campus*

## **PRESENTATIONS**

**Monday, 10:50 - 11:05 | Location: 211-213**

[T12B-03 Observing and modeling the spectrum of a slow slip event: Constraints on the scaling of slow slip and tremor](#)

*Jessica C Hawthorne, University of Oxford; Noel M Bartlow, University of Missouri; Abhijit Ghosh, University of California Riverside*

**Monday, 12:06 - 12:20 | Location: 252-254**

[SA12B-08 Calculating realistic voltages across the US power grid utilizing measured impedances and magnetic fields](#)

*Greg Lucas, USGS Geologic Hazards Science Center; Jeffrey J Love, USGS Geologic Hazards Science Center; Anna Kelbert, Geologic Hazards Science Center Denver; Paul Bedrosian, USGS; Erin Joshua Rigler, USGS*

**Monday, SESSION 13:40 - 15:40 | Location: 215-216**

[T13G Something Borrowed, Something New: Integrating EarthScope and Geologic Results to Better Constrain the 4-D Evolution of North America](#)

**Monday, 13:40 T13G-01** [Should the "Grenville Front" in the Central U.S. be Erased from Geologic Maps?](#)

*Carol A Stein, University of Illinois at Chicago; Seth Stein, Northwestern University; Reece Phillip Elling, Northwestern University; G. Randy Keller, University of Oklahoma Norman Campus; Jonas Kley, Georg-August-Universitaet Goettingen*

**Monday, 13:55 T13G-02** [The changing face of the lithosphere-asthenosphere boundary: Imaging continental-scale patterns in upper mantle structure across the contiguous U.S. with Sp converted waves \(Invited\)](#)

*Emily Hopper, Brown University, Lamont -Doherty Earth Observatory and Karen M. Fischer, Brown University*

**Monday, 14:10 T13G-03** [Magmatism and underplating, a broadband seismic perspective on the Proterozoic tectonics of the Great Falls and Snowbird Tectonic Zones](#)

*Yu Jeffrey Gu, Yunfeng Chen, Ramin Dokht, and Ruijia Wang, University of Alberta*

**Monday, 14:25 T13G-04** [Possible origin of the Bighorn uplift, WY, by lithospheric buckling during the Laramide orogeny \(Invited\)](#)

*Basil Tikoff, Univ Wisconsin; Christine S Siddoway, Colorado College; Lindsay Lowe Worthington, University of New Mexico; and Megan L Anderson, Colorado College*

**Monday, 14:40 T13G-05** [POST-METAMORPHIC THERMAL ANOMALY ACROSS THE NACIMIENTO BLOCK, CENTRAL CALIFORNIA: A HYDROTHERMAL OVERPRINT?](#)

*Brice Lacroix, Jacob Hughes, Kansas State University; Abdeltif Lahfid and Sylvain Delchini, BRGM/ISTO/Université d'Orléans*

**Monday, 14:55 T13G-06** [Crustal layering and gravity highs in the Midcontinent of North America – implications for the formation of the Illinois Basin](#)

*Hersh J Gilbert, University of Calgary; Joshua Boschelli, Purdue University; Gary L Pavlis, Indiana University Bloomington; Michael W Hamburger, Indiana University Bloomington; Stephen Marshak, University of Illinois; Chen Chen, Purdue University; Xiaotao Yang, University of Massachusetts Amherst; Michael Sanderson DeLucia, Illinois State Geological Survey; Timothy H Larson, Illinois State Geological Survey; and John Rupp, Indiana Geological Survey*

**Monday, 15:10 T13G-07** [Distributions of high-velocity lower crust and seismic anisotropy across the continental U.S.: Integration of seismic, xenolith, and surface geologic data to address lithospheric dynamics and history](#)

*Kevin H Mahan, University of Colorado at Boulder; Vera Schulte-Pelkum, University of Colorado Boulder; Weisen Shen, Washington University; Josh Stachnik, Lehigh University; Jonathan Saul Caine, US Geological Survey, and Ray Russo, University of Florida*

**Monday, 15:25 T13G-08** [Integrating EarthScope Data to Constrain the Long-Term Effects of Tectonism on Continental Lithosphere](#)

*Ryan C Porter, Northern Arizona University; Suzan van der Lee, Northwestern University*

**Monday, 13:55 - 13:58 | Location: 252-254**

[U13B-06 Quantifying uncertainties of seismic Bayesian inversion of Northern Great Plains \(Invited\)](#)

*Chao Gao, University of Maryland College Park; Vedran Lekic, University of Maryland*

**Monday, 13:55 - 14:10 | Location: 217-219**

[S13D-02 Unraveling earthquake stresses: Insights from dynamically triggered and induced earthquakes](#)

*Aaron A Velasco and Richard Alexander Alfaro-Diaz, University of Texas at El Paso*

**Monday, 16:00 - 16:15 | Location: 215-216**

[T14A-01 Inheritance vs ongoing evolution of the passive margin lithosphere in the southeastern United States: A comparison of <50Ma tectonism with tomographically imaged lithospheric structures.](#)

*Lara S Wagner, Carnegie Institution for Science Washington; Karen M. Fischer, Brown University; Robert B Hawman, University of Georgia; Emily Hopper, Lamont-Doherty Earth Observatory; Dorrin Howell, ETH Zurich*

**Monday, 16:15 - 16:30 | Location: 222**

[G14A-02 Stability of GNSS Monumentation: Analysis of Co-Located Monuments in the UNAVCO Plate Boundary Observatory](#)

*Frederick Blume, UNAVCO; Thomas Herring, MIT; Glen S Mattioli, Karl Feaux, Christian P Walls, Kenneth Emil Austin and Stephen T Dittmann, UNAVCO*

**Monday, 16:30 - 16:45 | Location: 215-216**

[T14A-03 Seismological Constraints on Lithospheric Evolution in the Appalachian Orogen](#)

*Karen M. Fischer, Brown University; Emily Hopper, Lamont-Doherty Earth Observatory; Robert B Hawman, University of Georgia; and Lara S Wagner, Carnegie Institution for Science*



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**TUESDAY, 12 DECEMBER 2017**

**POSTERS**

**08:00 - 12:20 | Poster Hall D-F**

[S21C-0733 Backprojection of tropical cyclones in the Atlantic](#)

*Annie Valovcin and Toshiro Tanimoto, University of California Santa Barbara*

[T21B-0563 Rayleigh and Love Wave Phase Velocities in the Northern Gulf Coast of the United States](#)

*Yao Yao and Aibing Li, University of Houston*

[T21B-0564 Geophysical Data Define Boundaries and Sub-Regions of the Northern Gulf of Mexico Basin: Structural Histories and Causes are Hypothesized.](#)

*Gary L Kinsland, University of Louisiana at Lafayette*

[A21F-2220 TLALOCNet continuous GPS-Met Array in Mexico supporting the 2017 NAM GPS Hydrometeorological Network.](#)

*Enrique Cabral-Cano, Universidad Nacional Autónoma de México; Luis Salazar-Tlaczani, Universidad Nacional Autónoma de México; David K Adams, Universidad Nacional Autónoma de México; Enrique R Vivoni, Arizona State University; Michel Grutter, Universidad Nacional Autónoma de México; Yolande L Serra, University of Washington; Charles DeMets, University of*



Wisconsin Madison; John Galetzka, Karl Feaux, Glen S Mattioli, and M Meghan Miller, UNAVCO

[T21A-0541 Frictional strengths of fault gouge from a creeping segment of the Bartlett Springs Fault, northern California](#)

**Jerlyn L Swiatlowski**, University of California Riverside; Diane E Moore and David A Lockner, U.S. Geological Survey, Earthquake Science Center

**13:40 - 18:00 | Poster Hall D-F**

[DI23A-0403 Lithospheric Layering beneath the Contiguous United States Constrained by S-to-P Receiver Functions](#)

**Lin Liu**, Kelly Hong Liu, Fansheng Kong, and Stephen S Gao, Missouri University of Science and Technology

[SA23A-2541 Subgrid geoelectric field specification for GIC modeling](#)

**Mark Butala**<sup>1</sup>, Matthew Grawe, University of Illinois at Urbana Champaign; Farzad Kamalabadi and Jonathan J Makela, University of Illinois

[SA23A-2542 Mapping Earth's electromagnetic dimensionality](#)

**Jeffrey J Love**, USGS Central Region Offices Denver; Anna Kelbert, Geologic Hazards Science Center Denver and Paul Bedrosian, USGS

[SA23A-2546 Geoelectric field estimation and power-line integration using a 3D electrical conductivity model of the United States](#)

**Anna Kelbert**, USGS Central Region Offices Denver; Christopher C Balch, NOAA Boulder; Greg Lucas, USGS Geologic Hazards Science Center; Erin Joshua Rigler, USGS

[S23A-0774 Accessing the uncertainties of seismic velocity and anisotropy structure of Northern Great Plains using a transdimensional Bayesian approach](#)

**Chao Gao**, University of Maryland College Park and Vedran Lekic, University of Maryland

[S23B-0802 Towards a Systematic Search for Triggered Seismic Events in the USA](#)

**Vivian Tang**, Kevin Chao, and Suzan Van der Lee, Northwestern University

[S23C-0826 Seismicity in Oklahoma Before Prague](#)

**Andrew A Delorey** and Paul A Johnson, Los Alamos National Laboratory

[T23F-0682 PBO Borehole Strainmeters: 2017 Episodic Tremor and Slip Event for Southern Vancouver Island, BC, Canada through Olympia, WA, USA](#)

**Elizabeth J Van Boskirk**, Kathleen Marian Hodgkinson, Michael H Gottlieb, Wade Johnson, David B Henderson, David Mencin and Glen S Mattioli, UNAVCO



[G23A-0879 Exploring cloud and big data components for SAR archiving and analysis](#)

*Scott Baker, Christopher J Crosby, Charles Meertens and David Phillips, UNAVCO*

## PRESENTATIONS

**Tuesday, 09:00 - 09:15 | Location: 215-216**

[T21D-05 Tomotectonic constraints on deformation of Cordilleran North America since Late Jurassic \(Invited\)](#)

*Mitchell G Mihalynuk, British Columbia Geological Survey; Karin Sigloch, University of Oxford*

**Tuesday, 10:20 - 10:35 | Location: 203-205**

[DI22A-01 Rifting the continental lithosphere: case studies of the lithosphere-asthenosphere system in rifted settings across the western U.S. and in the southern East African Rift \(Invited\)](#)

*Emily Hopper, James B Gaherty, and Donna J Shillington, Columbia University of New York*

**Tuesday, 10:35 - 10:50 | Location: 252-254**

[SA22A-02 Induction Hazard Assessment: The Variability of Geoelectric Responses During Geomagnetic Storms Within Common Hazard Zones](#)

*Stephen W. Cuttler, Colorado School of Mines; Jeffrey J Love, USGS Geologic Hazards Science Center; and Andrei Swidinsky, Colorado School of Mines*

**Tuesday, 13:40 - 13:55 | Location: 220-221**

[S23E-01 One to Large N Gradiometry \(Invited\)](#)

*Charles A Langston, University of Memphis*

**Tuesday, 14:40 - 14:55 | Location: 210**

[T23G-05 Investigation of the lithosphere of the Texas Gulf Coast using phase-specific Ps receiver functions produced by wavefield iterative deconvolution](#)

*Harold Gurrola, Andrew Berdine, Texas Tech University and Jay Pulliam, Baylor University*

**Tuesday, 14:40 - 14:55 | Location: 211-213**

[V24D-01 Seismic perspectives from the western U.S. on the evolution of magma reservoirs underlying major silicic eruptions \(Invited\)](#)

*Brandon Schmandt, University of New Mexico Main Campus; Hsin-Hua Huang, Academia Sinica; Jamie Farrell, Univ Utah-Geology & Geophysics; Steve M Hansen, CIRES; Chengxin Jiang, Macquarie University*





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**WEDNESDAY, 13 DECEMBER 2017**

**POSTERS**

**08:00 - 12:20 | Poster Hall D-F**

[NH31B-0218 PBO Borehole Strainmeters and Pore Pressure Sensors: Recording Hydrological Strain Signals](#)

*Michael H Gottlieb, Kathleen Marian Hodgkinson, David Mencin, David B Henderson, Wade Johnson, Elizabeth Van Boskirk, Chad Pyatt, and Glen S Mattioli, UNAVCO*

[DI31A-0379 3-D S-velocity structure in the lowermost mantle beneath the Northern Pacific](#)

*Yuki Suzuki, Kenji Kawai, Robert J Geller, Anselme F E Borgeaud, The University of Tokyo; and Kensuke Konishi, Academia Sinica*

**13:40 - 18:00 | Poster Hall D-F**

[DI33B-0404 Three Types of Earth's Inner Core Boundary](#)

*Dongdong Tian, University of Science and Technology of China; Lianxing Wen, Stony Brook University, University of Science and Technology of China*

[DI33B-0408 A two-pronged approach to detecting ICB Stoneley modes](#)

*Hope Abigail Jaspersen, Jingchen Ye, Jia Shi and Maarten V De Hoop, Rice University*

[S33B-0864 Full wave field recording of the vertical strain at SAFOD from local, regional and teleseismic earthquakes](#)

**William L Ellsworth**, Stanford University; **Martin Horst Karrenbach**, OptaSense, Inc; and **Mark A Zumberge**, Univ California San Diego

[S33C-0875 Crustal Structure beneath Alaska from Receiver Functions](#)

**Ying Zhang** and **Aibing Li**, University of Houston

[S33C-0876 Adapting Controlled-source Coherence Analysis to Dense Array Data in Earthquake Seismology](#)

**Benjamin Schwarz**, **Karin Sigloch** and **Tarje Nissen-Meyer**, University of Oxford

[S33C-0881 Long-period Rayleigh wave phase velocity tomography of the U.S.](#)

**Jordyn Cloud** and **Colleen A Dalton**, Brown University

[S33C-0884 Moho Depth and Geometry in the Illinois Basin Region Based on Gravity and Seismic Data from an EarthScope FlexArray Experiment](#)

**Dante Dominick Curcio**, **Gary L Pavlis**, Indiana University Bloomington; **Xiaotao Yang**, CAS Chinese Academy of Sciences; **Michael W Hamburger**, Indiana University Bloomington; **Henglei Zhang**, China University of Geosciences Wuhan; and **Dhananjay Ravat**, University of Kentucky

[S33C-0886 Geophysical character of the intraplate Wabash Fault System from the Wabash EarthScope FlexArray](#)

**James Andrew Conder**, Southern Illinois University Carbondale; **Lupei Zhu**, Saint Louis University; and **Justin D Wood**, Southern Illinois University

[T33B-0701 Using thermal and compositional modeling to assess the role of water in Alaskan flat slab subduction](#)

**Sarah Elizabeth Robinson**, **Ryan C Porter** and **Thomas D Hoisch**, Northern Arizona University

[S33A-0849 Imaging Stress Transients and Fault Zone Processes with Crosswell Continuous Active-Source Seismic Monitoring at the San Andreas Fault Observatory at Depth](#)

**Taka'aki Taira**, University of California Berkeley; **Thomas M Daley**, **Pierpaolo Marchesini**, **Michelle Robertson**, **Todd Wood**, Lawrence Berkeley National Lab; and **Fenglin Niu**, Rice University

## PRESENTATIONS

Wednesday, 08:15 - 08:30 | Location: 225-227

[GP31A-02 Controls on Magmatic and Hydrothermal Processes at Yellowstone Supervolcano: The Wideband Magnetotelluric Component of an Integrated MT/Seismic Investigation](#)

*Adam Schultz, Oregon State University; Ninfa L Bennington, University of Wisconsin Madison; Esteban Bowles-Martinez, Oregon State University; Naoto Imamura, Kyoto University; Reagan Alexis Cronin, David James Miller, Laney Hart, University of Wisconsin; Rebeca Margarita Gurrola, St. Mary's University; Bryce Alan Neal, University of Maine at Farmington; Kathryn Scholz, Brown University; Brady Fry, Oregon State University; and Rolando Carbonari, University Frederico II*

**Wednesday, 08:36 - 08:50 | Location: 243-244**

[SH31D-03 Mitigating Space Weather Impacts on the Power Grid in Real-Time: Applying 3-D EarthScope Magnetotelluric Data to Forecasting Reactive Power Loss in Power Transformers](#)

*L Roy Bonner IV and Adam Schultz, Oregon State University*

**Wednesday, 09:15 - 09:30 | Location: 225-227**

[GP31A-06 Source Biases in Magnetotelluric Transfer Functions due to Pc3/Pc4 \(~10-100s\) Geomagnetic Activity at Mid-Latitudes](#)

*Benjamin S Murphy and Gary D Egbert, Oregon State University*

**Wednesday, 10:20 - 10:35 | Location: 252-254**

[NH32A-01 Combined cGPS and InSAR time series for observing subsidence in the southern Central Valley due to groundwater exploitation \(Invited\)](#)

*Wesley Neely, Adrian A Borsa and Francesca Silverii, Scripps Institution of Oceanography*

**Wednesday, 10:50 - 11:05 | Location: 343**

[S32D-03 Nucleation and kinematic rupture of the 2017 Mw 8.2 Chiapas Mexico earthquake](#)

*Lingsen Meng, Hui Huang, Yuqing Xie, Tian Feng, University of California Los Angeles; Luis A Dominguez, National Autonomous University of Mexico; Jiayuan Han, ITAG Institute of Theoretical and Applied Geophysics; and Paul Mcewan Davis, University of California Los Angeles*

**Wednesday, 11:20 - 11:35 | Location: 225-227**

[GP32A-05 Structural Mapping Along the Central San Andreas Fault-zone Using Airborne Electromagnetics](#)

*Katrina Danielle Zamudio, USGS Crustal Geophysics and Geochemistry Science Center Denver; Paul Bedrosian, USGS and Lyndsay B Ball, U.S. Geological Survey, Lakewood*

**Wednesday, 12:30 - 13:30 EarthScope Town Hall Meeting | Location: 225-227**

[TH33D EarthScope Science and Synthesis](#)

*Jeffrey Todd Freymueller, University of Alaska Fairbanks and Maggie Benoit, National Science Foundation*

**Wednesday, 14:22 - 14:29 | Location: 238-239**

[ED33B-07 Face Time: Meaningful Public Engagement Through Interactive, In-Person Outreach Efforts](#)

*Beth A Bartel, UNAVCO and Maite Agopian, University of Alaska Fairbanks*

**Wednesday, 14:25 - 14:40 | Location: 220-221**

[S33D-04 Time-frequency domain phase weighted stacking and its application to phase velocity extraction from ambient noise's empirical Green's functions](#)

*Fenglin Niu, Rice University; Guoliang Li, China University of Petroleum and Yingjie Yang, ARC Centre of Excellence for Core to Crust Fluid Systems and GEMOC*



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## THURSDAY, 14 DECEMBER 2017

### POSTERS

08:00 - 12:20 | Poster Hall D-F

[S41C-0790 Exploring Low-Amplitude, Long-Duration Deformational Transients on the Cascadia Subduction Zone](#)

*Carolyn Nuyen and David A Schmidt, University of Washington*

[MR41A-0394 Experimental and Theoretical Equation of State of GeO<sub>2</sub> to 1.2 Mbars](#)

*Rajkrishna Dutta, Claire White, Princeton University; Eran Greenberg, Vitali B Prakapenka, University of Chicago; and Thomas S Duffy, Princeton University*

13:40 - 18:00 | Poster Hall D-F

[DI43B-0365 Shear Wave Splitting and Mantle Flow in Alaska \(Invited\)](#)

*Amanda McPherson, Douglas H Christensen, University of Alaska Fairbanks; Geoffrey A Abers, Cornell University; Carl Tape, University of Alaska Fairbanks; and Melissa M Moore-Driskell, University of North Alabama*

[G43A-0900 New constraints on slip rates and locking depths of the San Andreas Fault System from Sentinel-1A InSAR and GAGE GPS observations](#)

*Bridget R Smith-Konter, **Lauren Ann Ward**, Justin Takeshi Higa, University of Hawaii at Manoa; Xiaohua Xu, Scripps Institution of Oceanography; Xiaopeng Tong, Land Information New Zealand; and David T Sandwell, Scripps Institution of Oceanography*

[G43B-0946 Decadal GPS Time Series and Velocity Fields Spanning the North American Continent and Beyond: New Data Products, Cyberinfrastructure and Case Studies from the EarthScope Plate Boundary Observatory \(PBO\) and Other Regional Networks](#)

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**David A Phillips**, UNAVCO; **Thomas Herring**, MIT; **Timothy Ian Melbourne**, Central Washington University; **Mark H Murray**, New Mexico Institute of Mining and Technology; **Walter Michael Szeliga**, Central Washington University; **Michael Floyd**, MIT; **Christine Maria Puskas**, UNAVCO; **Robert W King**, MIT; **Frances M Boler**, **Charles M Meertens** and **Glen S Mattioli**, UNAVCO

**[S43A-0830 Clustering P-Wave Receiver Functions To Constrain Subsurface Seismic Structure](#)**

**Chengping Chai**, University of Tennessee; **Carene S Larmat**, Los Alamos National Laboratory; **Monica Maceira**, University of Tennessee, Oak Ridge National Laboratory; **Charles J Ammon**, Pennsylvania State University Main Campus; **Rizheng He**, Chinese Academy of Geological Sciences; and **Haijiang Zhang**, University of Science and Technology of China

**[DI43B-0359 Seismic Anisotropy beneath Alaska Constrained by Shear Wave Splitting Analysis](#)**

**Juan Pablo Acevedo**, Texas A&M University College Station; **Kelly Hong Liu**, **Fansheng Kong**, **Haider Hassan Dahm**, **Jilai Zhang** and **Stephen S Gao**, Missouri University of Science and Technology

## PRESENTATIONS

**Thursday, 08:00 - 08:15 | Location: 220-221**

**[S41E-01 Imaging the Alaskan subduction zone with joint inversion of ambient noise and teleseismic surface waves](#)**

**Robert Martin-Short**, University of California Berkeley; **Richard M Allen**, UC Berkeley Seismology Lab; and **Robert Porritt**, University of Arizona

**Thursday, 08: 15 - 08:30 | Location: 220-221**

**[S41E-02 Alaskan crustal thickness variations from P receiver functions provide insight into both inherited and active plate boundary structures \(Invited\)](#)**

**Meghan Samantha Miller**, Australian National University; **Leland O'Driscoll**, University of Oregon; **Robert Porritt**, University of Texas at Austin; and **Sarah Roeske**, University of California Davis

**Thursday, 08:30 - 08:45 | Location: 220-221**

**[S41E-03 What CCArray Can Learn from Other Stations Operated in Western Canada and Alaska](#)**

**Andrew Frassetto**, **Kasey Aderhold**, **Robert W Busby** and **Robert Woodward**, Incorporated Research Institutions for Seismology

**Thursday, 08:45 - 09:00 | Location: 220-221**

**[S41E-04 Contributions of USArray to Earthquake Monitoring in Alaska](#)**

**Natalia A Ruppert**, University of Alaska Fairbanks



**Thursday, 09:00 - 09:15 | Location: 220-221**

[S41E-05 Seismic evidence for mantle suture and a collisional origin for the Canadian Cordillera](#)  
*Yunfeng Chen, Yu Jeffrey Gu, Claire A Currie, Stephen T Johnston, University of Alberta; Shu-Huei Hung, National Taiwan University; Andrew J Schaeffer and Pascal Audet, University of Ottawa*

**Thursday, 09:00 - 09:15 | Location: 203-205**

[DI41B-05 Estimates of the seismic properties of subducted eclogite in the lower mantle from observations of S-to-P wave conversions](#)  
*Samuel McRae Haugland, Jeroen Ritsema, University of Michigan, Ann Arbor; Satoshi Kaneshima, Kyushu University; and Michael Scott Thorne, University of Utah*

**Thursday, 09:15 - 09:30 | Location: 220-221**

[S41E-06 EarthScope's Transportable Array: Status of the Alaska Deployment and Guide to Resources for Lower48 Deployment](#)  
*Robert W Busby, Robert Woodward, Kasey Aderhold, and Andrew Frassetto, IRIS Consortium*

**Thursday, 09:30 - 09:45 | Location: 220-221**

[S41E-07 Multi-Mode 3D Kirchhoff Migration of Receiver Functions at Continental Scale With Applications to USArray](#)  
*Florian Millet, LGLTPE Laboratoire de Géologie de Lyon: Terre, Planètes et Environnement; Thomas Bodin, LGLTPE and CNRS; and Stephane Rondenay, University of Bergen*

**Thursday, 09:30 - 09:45 | Location: 215-216**

[T41E-07 A Surface Wave's View of the Mid-Continent Rift](#)  
*Anna E Foster, GEOTOP-UQAM; Fiona Ann Darbyshire, University of Quebec at Montreal UQAM; and Andrew J Schaeffer, University of Ottawa*

**Thursday, 09:30 - 09:45 | Location: 222**

[G41A-07 Joint Inversion of Borehole Strainmeter and GPS Time Series for Slip and Stress Distribution during Cascadian ETS](#)  
*Nicholas Benz and Noel M Bartlow, University of Missouri*

**Thursday, 09:45 - 10:00 | Location: 220-221**

[S41E-08 Lithospheric Structure across the Alaskan Cordillera from Surface Waves and Receiver Functions](#)  
*Fan-Chi Lin and Kevin Michael Ward, University of Utah*

**Thursday, 10:20 - 10:35 | Location: 220-221**

[S42A-01 Macro-scale Tectonics of the Eastern North American Shield: Insights from a new Absolute P-wave Tomographic Model for North America.](#)

*Alistair Boyce, Ian D Bastow, Imperial College London; Eva Marie Golos, Massachusetts Institute of Technology; Scott Burdick, Wayne State University; Robert D van der Hilst, Massachusetts Institute of Technology; Stephane Rondenay, University of Bergen*

**Thursday, 10:35 - 10:50 | Location: 220-221**

[S42A-02 Multi-scale mantle structure underneath the Americas from a new tomographic model of seismic shear velocity](#)

*Robert W Porritt, Thorsten W Becker, University of Texas at Austin; Ludwig Auer, ETH Swiss Federal Institute of Technology Zurich; Lapo Boschi, Institut des Sciences de la Terre Paris (iSTeP)*

**Thursday, 10:50 - 11:05 | Location: 220-221**

[S42A-03 The Influence of Geography and Geology on Seismic Background Noise Levels Across the United States as Revealed by the Transportable Array](#)

*Robert E Anthony, Adam T Ringler, Austin A Holland, and David C Wilson, USGS Geologic Hazards Science Center*

**Thursday, 11:05 - 11:20 | Location: 220-221**

[S42A-04 Surprises from the Magnetotelluric Component of the USArray in the Eastern United States: Perplexing Anticorrelations with Seismic Images and Puzzling Insights into Continental Dynamics \(Invited\)](#)

*Benjamin S Murphy and Gary D Egbert, Oregon State University*

**Thursday, 11:20 - 11:35 | Location: 220-221**

[S42A-05 Imaging Strong Lateral Heterogeneities with USArray using Body-to-Surface Wave Scattering](#)

*Chunquan Yu, California Institute of Technology, Seismological Lab; Zhongwen Zhan, CalTech Seismological Laboratory; Egill Hauksson, Caltech Seismo Lab; and Elizabeth S Cochran, Earthquake Science Center*

**Thursday, 11:20 - 11:35 | Location: 210**

[T42C-05 Three-Dimensional Magnetotelluric Imaging of the Cascadia Subduction Zone with an Amphibious Array](#)

*Gary D Egbert, Oregon State University; Bo Yang, China University of Geosciences Wuhan; Paul Bedrosian, USGS; Anna Kelbert, Geologic Hazards Science Center Denver; Kerry Key, Institute of Geophysics and Planetary Physics La Jolla; Dean Livelybrooks, University of Oregon; Blake Anthony Parris, University of Oregon; and Adam Schultz, Oregon State University*

**Thursday, 11:35 - 11:50 | Location: 220-221**

[S42A-06 Upside-Down Subduction of the Farallon Slab and the Origin of Yellowstone Volcanism from Finite-Frequency Tomography of USArray Receiver Functions](#)

**Ying Zhou**, Virginia Tech

**Thursday, 11:50 - 11:55 | Location: 255-257**

[PA42A-19 How Collecting and Freely Sharing Geophysical Data Broadly Benefits Society](#)

*Andrew Frassetto, Robert Woodward and Robert S Detrick, Incorporated Research Institutions for Seismology*

**Thursday, 12:05 - 12:20 | Location: 220-221**

[S42A-08 Mapping the upper mantle beneath North American continent with joint inversion of surface-wave phase and amplitude](#)

*Kazunori Yoshizawa, Hokkaido University; Kouta Hamada, Hokkaido University, Japan Meteorological Agency*

**Thursday, 13:55 - 14:10 | Location: 210**

[T43F-02 Augmenting Onshore GPS Displacements with Offshore Observations to Improve Slip Characterization for Cascadia Subduction Earthquakes](#)

*Jessie K Saunders and Jennifer Susan Haase, Scripps Institution of Oceanography*

**Thursday, 14:10 - 14:25 | Location: 222**

[S43G-03 Azimuthally Anisotropic Global Adjoint Tomography](#)

*Ebru Bozdog, Colorado School of Mines; Ridvan Orsvuran, University of Côte d'Azur; Matthieu Philippe Lefebvre, Wenjie Lei, Princeton University; Daniel B Peter, ETH Swiss Federal Institute of Technology Zurich; Youyi Ruan, James A Smith, Princeton University; Dimitri Komatitsch, CNRS, Laboratory of Mechanics and Acoustics; and Jeroen Tromp, Princeton University*

**Thursday, 14:40 - 14:55 | Location: 242**

[ED43A-05 UNAVCO's Education and Community Engagement Program: Evaluating Five years of Geoscience Education and Community Outreach](#)

*Donna J Charlevoix, UNAVCO and Erik Dutilly, Boulder, CO*

**Thursday, 16:00 - 16:15 | Location: 203-205**

[DI44A-01 Heterogeneous distribution of water in the mantle transition zone beneath United States inferred from seismic observations](#)

*Yinzhi Wang, Gary L Pavlis, Indiana University Bloomington; and Mingming Li, Arizona State University*

**Thursday, 17:30 - 17:45 | Location: 203-205**

[DI44A-07 Global Adjoint Tomography -- Hotspots and Slabs](#)

*Youyi Ruan, Wenjie Lei, Matthieu Philippe Lefebvre, Ryan T Modrak, James A Smith, Princeton University; Ridvan Orsvuran, University of Nice Sophia Antipolis; Ebru Bozdog, Colorado School of Mines; and Jeroen Tromp, Princeton University*



# AGU 2017

EARTHSCOPE-RELATED PRESENTATIONS  
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**FRIDAY, 15 DECEMBER 2017**

**POSTERS**

**08:00 - 12:20 | Poster Hall D-F**

[G51B-0751 Seasonal and Surface Hydrologic Loading Signals at GPS Stations Processed by the GAGE Facility](#)

**Christine Maria Puskas**, Charles M Meertens, and David Phillips, UNAVCO

[DI51C-0321 Hunting Mid-Mantle Scatterers Beneath South America](#)

**Luis Velez** and Elizabeth Vanacore, Universidad de Puerto Rico

[DI51C-0322 Mapping the influence of the deep Nazca slab on the geometry of the 660-km discontinuity beneath stable South America](#)

**Marcelo Belentani de Bianchi**, Marcelo Assumpcao, IAG Institute of Astronomy, Geophysics and Atmospheric Sciences; and Jordi Julià, UFRN Federal University of Rio Grande do Norte

[DI51C-0332 Upper mantle low velocity heterogeneities beneath NE China revealed by source- and receiver-side converted waves](#)

**Zhe Guan** and Fenglin Niu, Rice University

[G51B-0749 Long-Period Signals Observed in the Plate Boundary Observatory Borehole Strainmeters](#)

**Zhou Lu**, University of Science and Technology of China; Lianxing Wen, University of Science and Technology of China, Stony Brook University

[IN51A-0002 Development of the AuScope Australian Earth Observing System](#)

**Tim Rawling**, Parkville, VIC, Australia

[SA51A-2377 Using GPS TEC measurements to probe ionospheric spatial spectra at mid-latitudes](#)

*Erin H Lay, Peter A Parker, Max E Light, Los Alamos National Laboratory; Charles Salvatore Carrano, Boston College; Shantanab Debchoudhury, Virginia Polytechnic Institute and State University; Robert A Haaser, Los Alamos National Laboratory*

[S51D-0621 Double-Difference Global Adjoint Tomography](#)

*Ridvan Orsvuran, University of Cote d'Azur; Ebru Bozdog, Colorado School of Mines; Wenjie Lei, Princeton University; and Jeroen Tromp, Princeton University*

[S51D-0642 Multi-mode phase speed measurements with array-based analysis: Application to the North American continent](#)

*Hitoshi Matsuzawa and Kazunori Yoshizawa, Hokkaido University*

**13:40 - 18:00 | Poster Hall D-F**

[PP53A-1112 Synchronizing Greenland ice-core records and the Meerfelder maar sediment record via the global cosmogenic radionuclide signature and insights on climate around 11,230 years BP](#)

*Florian Mekhaldi, Lund University; Markus Czymzik, Lund University; Achim Brauer, GFZ German Research Centre for Geosciences; Celia Martin-Puertas, Royal Holloway University of London; Ala Aldahan, United Arab Emirates University, Göran Possnert, Uppsala University; Raimund Muscheler, Lund University*

[S53B-0667 Short-Period Surface Wave Based Seismic Event Relocation](#)

*Austin White-Gaynor, Pennsylvania State University Main Campus; Michael Cleveland, Los Alamos National Laboratory; Andrew Nyblade, Jonas A. Kintner, Kyle Homman and Charles J Ammon, Pennsylvania State University*

## **PRESENTATIONS**

**Friday, 08:45 - 09:00 | Location: 203-205**

[DI51D-04 Crust and Mantle Deformation Revealed from High-Resolution Radially Anisotropic Velocity Models](#)

*Aibing Li, Riddhi Dave and Yao Yao, University of Houston*

**Friday, 15:10 - 15:25 | Location: 211-213**

[T53B-07 One billion year-old Mid-continent Rift leaves virtually no clues in the mantle](#)

*Andrew W Frederiksen, University of Manitoba; Trevor A Bollmann, Chevron Corporation Covington; Suzan van der Lee, Northwestern University; Emily Wolin, Northwestern University; Justin Revenaugh, University of Minnesota; Douglas Wiens, Washington University in St Louis; Fiona Ann Darbyshire, University of Quebec at Montreal UQAM; Ghassan I Aleqabi,*

*Washington University in St Louis; Michael Edward Wyssession, Washington Univ; Seth Stein, Northwestern University; Donna M Jurdy, Northwestern University*

**Friday, 16:30 - 16:45 | Location: 208-209**

[V54A-03 Intraplate mafic magmatism: New insights from Africa and N. America \(Invited\)](#)

*Cynthia J Ebinger, Tulane University of Louisiana; Suzan van der Lee, Northwestern University; Gabrielle Tepp, Alaska Volcano Observatory Anchorage; and Sidney Pierre, New Orleans Center for Science and Math High School*

**Friday, 16:45 - 17:00 | Location: 222**

[S54B-04 Lg Attenuation Anisotropy Across the Western US](#)

*W. Scott Phillips, Charlotte A Rowe, Richard J Stead, and Michael L Begnaud, Los Alamos National Laboratory*

**Friday, 17:00 - 17:15 | Location: 210**

[T54A-05 Stress concentration on Intraplate Seismicity: Numerical Modeling of Slab-released Fluids in the New Madrid Seismic Zone](#)

*Arushi Saxena, Eunseo Choi and Christine Ann Powell, University of Memphis*

**Friday, 17:45 - 18:00 | Location: 210**

[T54A-08 Lithospheric buckling and far-foreland deformation during the Laramide and Appalachian orogenies \(Invited\)](#)

*Basil Tikoff, University of Wisconsin and Christine S Siddoway, Colorado College*