



February 2012 Newsletter of the AGU Near-Surface Focus Group

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Recent announcements of interest to the NS community (conferences, academic positions, graduate student opportunities etc.) can be found at the AGU [NS-Focus Group Web Page](#).

AGU NS Membership as of February 2012:  
Primary affiliation: 793 members; Secondary: 2881 members

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1. Announcement: Help the Near Surface Focus Group Fund Make a Bigger Impact! (from Lu Pellerin)

Your support of fellow AGU Near Surface members and the next generation of student scientists is vitally important. With increased donations, we will be able to expand programming and NSFG initiatives to subsidize student tickets and registrations for Fall Meeting events, fund special student travel grants, honor distinguished and early-career NS member achievements, and provide travel support for NSFG award winners.

Help increase our impact by [making your NSFG donation](#) of \$200, \$100, or \$20 today! Any amount will be greatly appreciated. Thank you for your support!

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2. Announcement: SAGEEP 2012 Preliminary Program (from Jackie Jacoby)

Visit the Environmental and Engineering Geophysical Society's (EEGS) Web site to view the [SAGEEP 2012 preliminary program](#).

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3. Announcement: SAGEEP 2012 Short Courses and Workshops (from Jeff Paine)

Three short courses and three workshops are being held in conjunction with SAGEEP 2012 in Tucson, Arizona, 24–29 March. Visit the Environmental and Engineering Geophysical Society's (EEGS) Web site for more information about [SAGEEP 2012 short courses, workshops, and registration](#).

## SAGEEP 2012 Short Courses

Surface Waves Are for Everyone (Active and Passive MASW). Date: Saturday, 24 March 2012, 8 a.m. to 5 p.m.  
Instructor: [Julian Ivanov](#)

Advanced Surface Wave (MASW) Methods. Date: Sunday, 25 March 25 2012, 10 a.m. to 5 p.m. Instructor:  
[Julian Ivanov](#)

Electrical Resistivity/IP/SP for Environmental and Engineering Applications. Date: Sunday, 25 March 2012, 8 a.m. to 5 p.m. Instructor: [Bradley J. Carr](#)

## SAGEEP 2012 Workshops

Hydrofracking 101: What is it, What are the Issues, and How Can Geophysics Help?. Date: Thursday, 29 March 2012, 8 a.m. to 5 p.m. Convenors: Mike Jacobs, Chip Groat, Jeffrey G. Paine; and Bruce Smith. Titles and abstracts (200 words or less) for this workshop are being accepted until 27 February. Contact: [Jeffrey G. Paine](#) or [Bruce Smith](#) if you would like to participate.

Seismic Refraction Methods: Unleashing the Potential and Understanding the Limitations. Date: Thursday, 29 March 2012, 8 a.m. to 5 p.m. Convenors: [Bill Doll](#), Seth Haines, and Colin Zelt. Those who are interested in contributing a presentation should send a title and 200-word abstract to [Seth Haines](#) no later than 27 February 2012.

Trends in Resistivity and IP for Shallow Applications. Date: Thursday, 29 March 2012. Contact [Norman Carlson](#) if you are interested in participating in this workshop.

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4. Reminder: EGU 2012 meeting. 22–27 April Vienna (from Klaus Holliger)

Dear friends and colleagues,

Happy New Year to all of you!

This is a friendly reminder that the 2012 EGU meeting is held in Vienna, 22–27 April. In this context, we would like to draw your attention to session SM3.9 "Imaging the shallow subsurface with seismic and GPR methods". The session focuses on novel near-surface seismic and ground-penetrating radar techniques, innovations with regard to data processing and interpretation as well as pertinent case studies (see also below).

Other relevant information as well as the scientific program may be found on the [EGU General Assembly 2012 home page](#).

We are looking forward to seeing you in Vienna!

Cheers,

Klaus Holliger and co-conveners

### SESSION DESCRIPTION

SM3.9 "Imaging the shallow subsurface with seismic and GPR methods"

Conveners: Lars Nielsen, Klaus Holliger, Matt Yedlin, Hansruedi Maurer

Seismic and ground-penetrating radar (GPR) methods are widely used in high-resolution geophysical

investigations of the shallow subsurface. Technological progress with regard to data acquisition and processing and methodological developments in forward and inverse modelling schemes for interpretation of the seismic and GPR data continuously increase the degree of fine-scale heterogeneity that the methods can resolve. We invite both methodological studies, presentations demonstrating the applicability of the methods, and studies aimed at developing new instrumentation to contribute to this session.

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5. Reminder: SEG-AGU Hydrogeophysics Workshop (from Jan van der Kruk)

SEG-AGU Hydrogeophysics Workshop, 8-11 July 2012, Boise State University, Boise, Idaho, U.S.A.; Abstract submission deadline: 21 March 2012; Advanced registration deadline: 7 June 2012

This workshop addresses current hydrogeophysical approaches for determining, predicting, and studying hydrologic properties and processes in both the saturated and unsaturated zones, at scales ranging from centimeters to watersheds. Through presentations of original research in our "General Sessions", and analysis and interpretation using shared datasets in our "Homework Sessions", the workshop will highlight the state of the science and critical future directions. In order to promote discussion, all accepted abstracts (for General and Homework Sessions) will be presented as posters, with a 3-5 minute oral presentation as an introduction. After viewing of posters, all sessions will reconvene for a panel-led discussion. General Sessions: 1) Characterizing Near-Surface Structure and Properties, 2) Advances in Monitoring and Time-Lapse Imaging of Subsurface Processes, 3) Thinking About Scaling Up: Geophysical Methods at the Watershed Scale. Homework Sessions: 1) Quantifying Noise and Uncertainty in ERT Data, 2) Tomography Bakeoff Using Borehole Seismic and GPR Datasets, 3) Designing the Perfect Field Experiment.

The Hydrogeophysics 2012 Workshop offers downloadable [homework datasets](#).

For more information, visit the [SEG-AGU Hydrogeophysics 2012 Workshop Web site](#).

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6. Reminder: Association for Women Geoscientists: 35<sup>th</sup> Anniversary Convention, Hartford, 16–17 March 2012

AWG 35th Anniversary Convention: A Lifetime of Leadership: Friday, 16 March & Saturday, 17 March 2012; Hartford Marriott Downtown, Hartford, CT

For further details, please visit the [AWG Web site](#).

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7. Call for Papers: EAGE Workshop on Dead Sea Sinkholes, 23–26 September 2012, Amman, Jordan

Call for papers is now open for the EAGE Workshop on Dead Sea Sinkholes: Causes, Effects & Solutions (23–26 September 2012, Amman, Jordan). The deadline is 15 March 2012

For further details, please visit the [EAGE Web site](#).

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8. Open positions:

8.1. Opening for an EM faculty position: Colorado School of Mines (from Yaoguo Li)

Dear Colleagues,  
Colorado School of Mines Department of Geophysics invites applications for an anticipated tenure-track

position at the rank of Assistant Professor. The department is seeking a faculty member with expertise in geophysical methods based on EM induction and GPR.

For details, please visit the [Colorado School of Mines job opening Web page](#) (search number 12-061400). The same ad will also appear soon in EOS, The Leading Edge, First Break, Preview, and Recorder.

Sincerely,  
Yaoguo Li

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## 8.2. Junior Faculty Position in Applied and Exploration Seismology, University of Lausanne

The Faculty of Geosciences and Environment at the University of Lausanne has an opening for a position at the junior lecturer level in the field of applied and exploration seismology. This position is geared towards recent PhD graduates with some postdoctoral experience. The new faculty member will be expected to: (i) teach a variety of courses covering the full breadth of applied and exploration seismic methods to undergraduate- and graduate-level students in the earth and environmental sciences, (ii) supervise undergraduate- and graduate-level students, and (iii) develop an externally funded and internationally recognized research program.

Applications from any domain of applied and exploration seismology that will reinforce and/or complement current research activities in applied and environmental geophysics are welcome. Interest and experience in other applied geophysical methods as well as in rock physics would be an asset. The successful candidate will have a well documented track record of independent research in her/his domain of specialization.

Prior knowledge of French is an advantage, but not a requirement for this position. An adequate command of this language for teaching purposes is, however, expected at the latest two years after the beginning of the appointment. This is a great opportunity for a highly motivated and dynamic young scientist with a dedication to excellence in both research and teaching to join one of the leading applied and environmental geophysics groups and to benefit from its dynamic atmosphere and very good infrastructure ([UNIL Web site](#)). The campus of the University of Lausanne is scenically located on the shores of Lake Geneva, a region of outstanding natural beauty offering a vibrant cosmopolitan atmosphere and an exceptionally high quality of life. For further information regarding the details of this position please contact Professor [Klaus Holliger](#). The University of Lausanne wishes to promote the access of women to academic careers and hence strongly encourages applications from qualified female candidates.

Application deadline: 20 January 2012

Starting date: September 1, 2012, or at some later date to agree upon.

Applications are to be submitted both by [e-mail](#) and by paper copy (Faculty of Geosciences and Environment, University of Lausanne, to the attention of the Dean, Amphipole Building, CH-1015 Lausanne, Switzerland). The application material must include a cover letter, a curriculum vitae, a publication list, a statement of research and teaching goals, and the names and contact information of three referees.

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## 8.3. USGS post-doctoral fellowship - Electrical and Electromagnetic Monitoring of Volcanic Processes

We seek a postdoctoral fellow to develop and implement electrical and electromagnetic approaches to monitoring magmatic and hydrothermal activity at Kīlauea Volcano, which is unique in terms of its accessibility, utilizing the comprehensive suite of existing monitoring networks, and knowledge of its dynamics. This work has the potential to complement existing monitoring tools and improve our understanding of volcanic processes as well as build our predictive and response capabilities. The specific course of the research program will be determined by the applicant. Potential questions that may be addressed include:

Can detected changes in the hydrothermal system be related to surface deformation?

Can reliable real-time estimates of flux through lava tubes be determined with electric and (or) electromagnetic methods?

Can changes in the shallow hydrothermal system be distinguished from changes in the deeper magmatic system?

How do EEM measurements relate to and supplement seismic observations? What combination of geophysical methods and auxiliary information is ideally suited to provide information about the volcanic processes of interest?

The postdoctoral fellow will have access to a range of geophysical, geochemical, and geologic data collected by the Hawaiian Volcano Observatory, much of it in near real-time. Opportunities exist to evaluate various methodologies through the collection of data at multiple sites where subsurface properties are well characterized.

Candidates should have a broad working knowledge of inverse geophysical methods and preferably familiarity with electrical and electromagnetic methods and (or) volcano monitoring techniques (GPS, tilt- and strain-meters, seismic, gas geochemistry), numerical modeling or inverse methods, and a basic understanding of volcanology.

Further details can be found on the [USGS Web site](#) or by contacting the research advisors below. Non-US citizens may apply, but face a stiffer challenge in submitting a successful application.

Application deadline is 21 February 2012

Research Advisors: [Paul Bedrosian](#), (303) 236-4834; [Jim Kauahikaua](#), (808) 967-8824; [Burke Minsley](#), (303) 236-5718; [Shaul Hurwitz](#), (650) 329-4441; [Matt Haney](#), (907) 786-7111

Duty station - Denver, Colorado

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#### 8.4. USGS Mendenhall Research Fellowship Opportunity

Title: Integrating hydrologic and geophysical data for groundwater characterization: method development and application to airborne electromagnetic surveys

Applicants to this Research Opportunity are invited to propose innovative methods for integrating geophysical and hydrogeologic datasets to inform hydrogeologic models. The applicant is encouraged to incorporate one or more airborne electromagnetic datasets recently acquired by the USGS in eastern Nebraska, western Nebraska, San Luis Valley of Colorado, Paradox valley of Colorado, and/or Fort Yukon Alaska in their proposal. Potential topics of interest might include: integration of multi-disciplinary data to hypothesize and test alternative hydrogeologic models, examine and possibly extend sensitivity analysis methods for groundwater models informed by geophysical data, quantify the uncertainty for joint interpretation of hydrogeophysical datasets, develop relationships between hydrologic and geophysical properties, develop algorithms for integrated hydrogeophysical analysis, identify/address gaps in existing datasets, or other related topics. The successful candidate will develop a fully integrated research plan that leverages multi-disciplinary data to better inform groundwater models

Research Advisors: [Burke J. Minsley](#), (303) 236-5718; [Ty Ferré](#); [Mary C. Hill](#); [Jared D. Abraham](#)

The U.S. Geological Survey (USGS) began the Mendenhall Postdoctoral Research Fellowship Program (now called Mendenhall Research Fellowship Program) in 2001 in honor of Walter C. Mendenhall, the fifth Director of the USGS. The Mendenhall Program provides an opportunity for recent PhD graduates (within five years since completion of the doctoral degree) to conduct concentrated research in association with selected members of the USGS professional staff. The Program is intended to provide research fellows with experiences that

enhance their personal scientific skills and accomplishments. Through the Mendenhall Program the USGS acquires current expertise to assist in the advancement of its scientific goals.

Mendenhall Fellowships are 2-year appointments with competitive salary and benefits. Mendenhall Fellows are typically granted project expense funds appropriate to the scope of research to be conducted. Postdoctoral research projects under this program have spanned a wide range of scientific topics of interest and relevance to the mission of the USGS. For additional information, please consult the Project Profiles section of the [Mendenhall Program web site](#).

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8.5. [Senior Interpretation Geophysicist \(EM\)](#): Geotech Airborne Ltd - Midrand , Johannesburg, South Africa

Geotech Airborne in South Africa is looking to employ a Senior Interpretation Geophysicist, preferably with previous exposure to EM processing and interpretation. This person will head up the interpretation of data consisting of electromagnetic, magnetic and radiometric data. Interpretation is done with a view to defining ground follow up or drill targets for gold, base metals, diamonds and other minerals for our clients. Client liaison is a significant part of this role, and the successful candidate will at times be required to represent the Company in presenting technical papers at trade exhibitions or conferences.

For more details, visit the [Senior Interpretation Geophysicist \(EM\)](#) job posting.

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To contribute material to the NS-letter send an e-mail to:

[Xavier Comas](#)

DEADLINE: Material must be received 2 full business days prior to the first of each month.

GUIDELINES FOR SUBMISSIONS: All members are welcome to submit content of interest to the NS community. Please keep messages brief and provide contact information and (if available) a web address for additional information. AGU requests formatting of e-mail messages to be as simple as possible (no bold characters (use ALL CAPS instead), no color font, or other special formatting of text and paragraphs). E-mail attachments cannot be distributed