



American Geophysical Union
Near-Surface Geophysics Focus Group (NSFG)
Newsletter: April 2015

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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 website](#).

Early Career Scientists: Check out the [NSFG Early Career website](#).

Follow NSFG on [Facebook](#) and Twitter [@NS_AGU!](#)

1. AGU Updates

1.1 New Near-Surface Geophysics Focus Group Website

The Near-Surface Geophysics Focus Group has a new [website](http://nsg.agu.org/) (<http://nsg.agu.org/>). Change your bookmarks to the new site, and check this page for announcements and information of interest to the NS community.

1.2 2015 Fall Meeting Session Proposals

Session proposals for the 2015 Fall AGU meeting can be made [online](#). The deadline for proposing sessions is 22 April 2015. Prior to submitting a proposal, please use the submission tool to search and view session proposals already submitted by your colleagues.

1.3 Volunteer to be a Coordinator for the Outstanding Student Paper Award Program at Joint Assembly

Volunteer to help with this year's [Outstanding Student Paper Award](#) program at Joint Assembly! OSPA is a wonderful opportunity to directly help students grow in their scientific career by helping secure judges for their poster or oral presentation.

A successful OSPA Coordinator donates an hour a week leading up to Joint Assembly to email and recruit judges for student presentations, and encourage judges to enter their scores by the deadline.

Besides helping emerging student scientists in their careers, OSPA Coordinators also help select the winning presentations at the end of the meeting! I will provide step-by-step instructions and support for all OSPA volunteers.

To volunteer, please [submit an application now](#).

1.4 Request for Photos

Been to the field lately? Send your photos to student representative [Sarah Morton](#) (smorton@kgs.ku.edu) to be displayed on the [NSFG Facebook page](#) and new [focus group webpage](#) with a blurb about your work!

1.5 Request for Research Highlights

To more effectively communicate the crosscutting nature of Near-Surface Geophysics science and our contributions to other [AGU Sections and Focus Groups](#), we are soliciting short (~ 1 page) research highlights. These highlights will be added to the monthly NSFG newsletter, and we will also work with other Sections and Focus Groups to publish relevant highlights in their respective newsletters.

If you are interested in writing or contributing to a summary of the importance of NSFG science to another Section or Focus Group, contact [Burke Minsley](#) (bminsley@usgs.gov).

2. Journal Special Issue Call for Papers

2.1 *Geophysics Special Issue: Nuclear magnetic resonance for near-surface applications*

Deadline for manuscript submission: 1 September 2015

Following the 2015 International Workshop on Magnetic Resonance of the Subsurface (MRS), SEG Near Surface is soliciting manuscripts for a special section in Geophysics focused on Nuclear magnetic resonance characterization of near-surface materials.

Nuclear magnetic resonance (NMR) is a promising method for investigating the properties of Earth materials, providing direct sensitivity to hydrogen bearing fluids and their interactions with the pore space. In near-surface geophysics, NMR is most commonly used to determine water content and to estimate hydrogeologic properties such as pore size and hydraulic conductivity.

The special section will highlight the recent advances in the NMR method as applied to the characterization of the near surface. We seek papers that address the state of NMR as a geophysical measurement for near-surface applications in the field (using surface, borehole, or direct push NMR) and in the laboratory, as well as papers that address integrating NMR datasets into hydrogeological models. We welcome the submission of papers that present novel applications and case studies of NMR, technical advances in the instrumentation, new data interpretation, advancements in data acquisition and signal processing, and new forward modeling and inversion approaches. Authors who did not present at the 2015 MRS workshop but whose research fits the theme of this call are also encouraged to submit papers.

Authors should first register their interest and prospective title with the special section editors by sending an email to MRS2015@au.dk with "Special Issue: <paper title>" in the subject. Please also indicate when the manuscript will be submitted. The deadline for submitting manuscripts to the special issue is 1 September 2015. All submissions will be made using the [Geophysics online submission system](#). Please indicate that the manuscript is intended for the MRS special section in the online submission system and in a cover letter to the editor. Manuscripts that are submitted to this special section will undergo the standard Geophysics review process. Authors will also be asked to contribute to the review process.

The submissions will be processed according to the following timeline:

Submission deadline: 1 September 2015

Peer review complete: 15 March 2016

All files submitted for production: 1 May 2016

Publication of issue: July-August 2016

Special section editors: [Kristina Keating](#), [Lin Jun](#), [Mike Müller-Petke](#), [Ahmad Behroozmand](#), [Jean-Francois Girard](#).

3. Tech-Transfer Courses & Training

3.1 Multichannel Analysis of Surface Waves (MASW) Workshop

Dates: 21 - 22 May 2015 and 25 – 26 June 2015 [two workshops]

Registration cost: free

Location: [Kansas Geological Survey](#), Lawrence, Kansas

[Website](#)

This free two-day [MASW](#) workshop will provide opportunity for geo-professionals, geoscientists, and graduate students to gain knowledge about acquisition, analysis, and interpretation of the seismic Rayleigh surface waves. The learning process will be facilitated by the use of [SurfSeis](#) software. The workshop is designed to address the current approaches for analyzing seismic data from both active and passive sources for obtaining shear-wave velocity (V_s) estimates for the near-surface.

On Day 1 a theoretical overview of the MASW method (active and passive) will be presented, participants will be familiarized with the SurfSeis software package, and field data acquisition from both active and passive sources is scheduled take place (weather permitting).

Day 2 will continue with the theoretical MASW overview covering surface-wave inversion, multi-mode interpretation and inversion, inversion sensitivity, use of a-priori information and quality of inversion results, latest advancements for dispersion-curve imaging—such as the high-resolution linear Radon transform (HRLRT), challenging dispersion-curve patterns, and more. Day-1 acquired seismic data will be analyzed. Participants are encouraged to bring samples of their own data for discussion as time permits.

Attendees are expected to bring their own laptops.

4. Upcoming Conferences and Workshops

4.1 EarthCube Workshop: Numerical Model Metadata for Solid Earth Sciences

Meeting Dates: 30 April – 1 May 2015

Meeting Location: Portland, Oregon

[Visit the Workshop Website](#)



We have teamed up with several other modeling communities across geosciences to work on interoperability of numerical models across modeling frameworks, scales and disciplines. Based on the climate community benchmarking experience, we are now creating new metadata standards to fully and unambiguously describe numerical modeling codes, including the physics and the assumptions involved, grids, and the input and output variables. One of the uses of such metadata would be to enable multidisciplinary model coupling.

Our initial efforts in this multidisciplinary initiative are focused on describing numerical models in solid Earth sciences with comprehensive numerical model metadata that would potentially be suitable for model coupling.

The task of creating metadata for numerical models for solid Earth sciences involves development of the geodynamic, seismic, electromagnetic and petrologic controlled vocabularies for describing these models. It also involves development of the metadata standard, and of user-friendly tools that would be both flexible and non-prescriptive, while streamlined and attractive enough to be adopted by the scientist community.

Fortunately, we are not entirely starting from scratch on these efforts; instead, due to collaborative nature of our project, we learn from and (where possible) adopt the best practices of climate, water, and surface dynamics communities. Nevertheless we would like to emphasize that this is intended as the initial step in the direction of numerical model metadata and model coupling capabilities for solid Earth sciences. At this early stage in the development, we primarily seek the input from modeling professionals; once the metadata tools reach maturity, broader community input will be solicited.

The goal of the workshop is to gather community feedback on our activities, using hands-on demonstrations of our controlled vocabularies and tools. We invite numerical model developers and users in the solid Earth sciences communities to a meeting that should help us shape the basic concepts of the interdisciplinary Model Coupling Metadata (MCM) format. Your input will correct and steer any further work on this project.

4.2 NovCare 2015 International Conference

Submission Deadline: *closed*

Meeting Dates: 19-21 May 2015

Meeting Location: Lawrence, Kansas

[Visit the Conference Website](#)



The **NovCare 2015** International Conference (Novel Methods for Subsurface Characterization and Monitoring: From Theory to Practice) will take place 19-21 May 2015 at the University of Kansas in Lawrence, Kansas, a delightful college town in the central United States. This conference, organized by the University of Kansas, Michigan State University, the Helmholtz Centre for Environmental Research, and the University of Tübingen, is the fourth conference in a series that has proven to be an excellent forum for exchanging ideas and experiences related to the challenges of subsurface characterization and monitoring. Previous conferences in the series were in Leipzig in 2009, Cape Cod in 2011, and Leipzig again in 2013.

NovCare 2015 will again provide an outstanding platform for researchers and practitioners from all over the world to share research on innovative methods for characterization and monitoring of aquifers, soils, and watersheds. The six thematic categories of **NovCare 2015** are **(1)** integrated characterization of the unsaturated and saturated zones, **(2)** characterization at the interface (stream-aquifer interactions, coastal settings, etc.), **(3)** opportunistic characterization (natural/anthropogenic stimuli and tracers of opportunity), **(4)** new tools for watershed characterization, **(5)** geotechnical site characterization, and **(6)** long-term monitoring.

Invited speakers for NovCare 2015 from the geophysics community include Rick Miller, Rosemary Knight, Esben Auken, and Jens Tronicke.

We cordially invite you to participate in the conference and present your work. [Further information is available online.](#)

4.3 77th EAGE Conference & Exhibition

Submission Deadline: *closed*

Meeting Dates: 1-4 June 2015

Meeting Location: Madrid, Spain

[Visit the Conference Website](#)



Near surface focus-topics for the conference call for abstracts are listed below; see conference website for a full list:

- Environmental and Hydrological Issues Related to Unconventional Resource Exploitation
- Characterization and Monitoring of Hydrocarbon Polluted Sites
- Exploration Applied to Water Resources Estimation and Management
- Geophysical Site Characterization Applied to Climate Change Evaluation
- Geophysical Investigation and Monitoring of Shallow Hazards
- Geophysical Investigation and Monitoring for Induced Seismicity
- Near-surface Characterization for Hydrocarbon Prospecting
- Risk Assessment of Shallow Sub-seabed
- Site Investigation for On- and Off-shore Engineering

Workshop on “Full Waveform Inversion for Near-surface Characterization”

This one-day workshop will be held on 1 June 2015. The workshop will highlight the state of the science and critical future directions in using accurate forward modeling programs in full-waveform inversion algorithms to obtain sub-wavelength resolution images of the near surface. Recently successful field data applications of FWI have been published in the non-destructive material testing using ultrasonics, the prospecting of the near-surface using ground penetrating radar, and the reconstruction of elastic properties from shallow seismic Rayleigh waves. During the workshop recent developments will be discussed and it is expected that the workshop will include presentations about the theoretical background, synthetic examples, and several case histories for ultrasonics, shallow seismics and ground penetrating radar applications. The workshop shall consist of oral and poster presentations depending on the number of submissions. Sufficient time will be given for discussion to allow for the exchange of knowledge and experiences.

[Additional information is available online.](#) For more information please [contact Thomas Bohlen \(thomas.bohlen@kit.edu\)](#) or [Jan van der Kruk \(j.van.der.kruk@fz-juelich.de\)](#)

4.4 6th International Workshop on Magnetic Resonance

Submission Deadline: *closed*

Meeting Dates: 8 – 10 June 2015

Meeting Location: Aarhus, Denmark

[Visit the Workshop Website](#)



We are glad to invite the community to this event Denmark hosted by the HydroGeophysics Group, Aarhus University.

We like to invite newcomers to the world of MRS and therefore we offer a short course on MRS on 6 – 7 June. Here we will cover all aspects of MRS including examples on how these data can be used in hydrological modeling. We have gotten prominent experts from all over the world to give the lectures.

The workshop will focus on the recent advances in nuclear magnetic resonance (NMR) measurements for near-surface characterization. The most important findings will be presented in the areas of:

- Magnetic Resonance Sounding (MRS) / Surface NMR
- Borehole NMR
- Laboratory NMR
- Integration of NMR with hydrologic modeling
- Instrumentation
- Case studies

Look forward to see geophysicist, geologists and hydrologist in Aarhus in June!

4.5 MARELEC 2015

Submission Deadline: *closed*

Meeting Dates: 16 - 19 June 2015

Meeting Location: Philadelphia, PA

[Visit the Conference Website](#)



The conference technical committee invites paper and poster proposals in the broad areas of marine electromagnetics concerned with theoretical development and modeling, measurement and analysis, together with case studies where appropriate.

The topics of interest are: Electromagnetic Surveillance & Communication Systems, Vessel Electromagnetic Signature Prediction and Control, Seafloor & Sub-Bottom Electromagnetic Exploration and Oceanographic Electromagnetics.

Marelec 2015, the 9th international conference on marine electromagnetics will be held at the Bossone Research Enterprise Center, Philadelphia, USA from 16 – 19 June 2015.

Presentations are supported by an exhibition of the leading manufacturers and service providers. There are only 3 exhibit booths remaining and limited sponsorship opportunities available.

4.6 Near-Surface Asia Pacific Conference

Submission Deadline: *closed*

Meeting Dates: 7-10 July 2015

Meeting Location: Waikoloa, Hawaii

[Visit the Conference Website](#)



The 2015 Near-Surface Asia Pacific Conference will focus on near-surface issues within the entire Pan-Pacific region and will provide a world-class forum for new technical advances, developments, and applications in near-surface geophysics.

We welcome the submission of papers covering theoretical developments and case histories in the broad topic of near-surface geophysics, including:

- Shallow Seismology
- Engineering Geophysics
- Borehole Geophysics
- Rock and Soil Properties
- Ground-penetrating Radar
- Hydrogeophysics
- Modeling and Inversion
- Remote Sensing and Lidar Applications
- Electric, EM, and NMR Methods
- Mining and Geothermal Exploration
- Geophysical Instruments

As a new component to this year's conference, we invite proposals for additional special sessions and one-day post-conference workshops. In your proposal, please include the workshop or session organizers, potential invited speakers, and a brief description of the topic and its relevance to the conference.

In addition, given that this year's venue is located on the Hawaiian volcanic chain, we will highlight geophysical applications to natural hazards focusing on volcanoes. Special sessions are planned for volcano characterization; monitoring, imaging, and stratigraphy of pyroclastic flows; geophysical applications to tsunamis; and passive/microseismic methods for near-surface applications.

4.7 Near Surface Geoscience 2015

Submission Deadline: 15 April 2015

Meeting Dates: 6 – 10 September 2015

Meeting Location: Turin, Italy

[Visit the Conference Website](#)



Near Surface Geoscience 2015 is actually three conferences in one! Participants can attend the [21st European Meeting of Environmental and Engineering Geophysics](#), the [1st Conference on Proximal Sensing Supporting Precision Agriculture](#), or the [1st European Airborne Electromagnetics Conference](#). In addition, there will be several workshops available on 6 September.

4.8 South African Geophysical Association 14th Biennial Conference and Exhibition

Submission Deadline: *closed*

Meeting Dates: 6 – 9 September 2015

Meeting Location: Drakensberg, South Africa

[Visit the Conference Website](#)



The Conference's Organizing Committee takes pleasure in extending an invitation to submit a paper for presentation at the South African Geophysical Association's 14th Biennial Conference and Exhibition, to be hosted at the Champagne Sports Resort in the majestic Drakensberg Mountains, South Africa.

Any queries regarding the paper submission process can be addressed via [email](#) to the SAGA 2015 Technical Committee.

For any queries regarding registration, please contact [Kathy \(kathy@saga2015.co.za\)](mailto:kathy@saga2015.co.za).

4.9 Society of Exploration Geophysicists 85th Annual Meeting

Submission Deadline: *closed*

Meeting Dates: 18 - 23 October 2015

Meeting Location: New Orleans, LA

[Visit the Conference Website](#)



The [2015 Annual Meeting](#) Technical Program Committee invites you to submit papers for consideration for the 2015 New Orleans Technical Program. Abstract submission begins 4 March, and the deadline for submissions is 1 April. Start preparing your papers for submission by reading the updated [2015 Abstract Kit](#).

4.10 3rd International Conference on Engineering Geophysics

Submission Deadline: 1st week of May 2015

Meeting Dates: 15 – 18 November 2015

Meeting Location: Al Ain, United Arab Emirates

[Visit the Conference Website](#)



The United Arab Emirates University (UAEU) and Al Ain City Municipality (AAM) in partnership with the Society of Exploration Geophysicists (SEG) are proud to announce the third edition of the International Conference on Engineering Geophysics (ICEG). This third edition will take place 15-18 November 2015 on the grounds of the UAEU in the Conference Auditorium of the Crescent Building.

The success of the first and second ICEGs is reflected by the number of participants and the great interest shown by and feedback from both local authorities and the international geo-community working with geophysical methods applied to engineering, environmental, archaeological, geotechnical, and forensic problems. Overwhelming encouragement from this community has led to the third in the series and decision to extend the fields of interest to a wider range of near surface related specialties including groundwater, time-lapse, security, seismicity, and geothermal to name a few options. Beyond this 2015 event, this world class series will be broadened to allow sharing of the event with other regional partners with equivalent enthusiasm for the application of geophysics to near-surface problems.

In addition to the regular conference program, [Oz Yilmaz](#), the 2015 SEG DISC, will deliver a full day course on *Engineering Seismology: With Applications to Geotechnical Engineering* on 14 November 2015. [Learn more about the DISC at ICEG 2015](#).

4.11 3rd International Workshop on Geoelectrical Monitoring (GELMON 2015)

Submission Deadline: 20 September 2015

Meeting Dates: 24 - 26 November 2015

Meeting Location: Vienna, Austria

[Visit the Workshop Website](#)



To foster scientific discussion and to support cooperation among the scientific groups, the Geological Survey of Austria invites to the “Third International Workshop on Geoelectrical Monitoring. The scope of this workshop should not only be the presentation of state-of-the-art results but significant time will

also be reserved for the discussion of special topics of data acquisition, processing, inversion and interpretation. Special topics include:

- Monitoring case studies in general (CO₂, landslides, embankments, permafrost, ...)
- Inversion and Modeling
- Data Quality Assessment
- Infrastructure Monitoring
- New fields of application
- ... other topics are welcome

We would also kindly ask you to forward this invitation to any other colleague who might be interested in this event.

To facilitate an unobstructed organization of the event, we ask you to state your intention to participate in the "GELMON 2015" workshop in a short e-mail to [Stefanie Gruber \(stefanie.gruber@geologie.ac.at\)](mailto:stefanie.gruber@geologie.ac.at). Please inform us, if you are also planning to give an oral/poster presentation and specify the topic (full title is not necessary).

For companies and institutes there will be the opportunity to present their products and research in the form of a company booth (400 €), which will be on display during the conference in a special room adjacent to the main conference room. Sponsorship of a certain conference event (icebreaker party, conference dinner) is also welcome. For further information, please contact [Stefanie Gruber](#). Registration by bank transfer will be open from 22 June 2015 to 16 November 2015.

5. Position Announcements

5.1 Postdoctoral Fellow at Lawrence Berkeley National Laboratory

The Earth Sciences Division of Lawrence Berkeley National Laboratory is seeking applications for a Postdoctoral Fellow to develop and implement methodologies for monitoring and investigating complex near-surface and surface processes using remote sensing (primarily using unmanned aerial systems), hydrological and geophysical techniques, and point-scale energy and flux measurements.

The Postdoctoral Fellow will work with a multi-disciplinary group of scientists to improve predictive understanding of coupled hydrological-geomechanical-biogeochemical processes that are manifested at the pore to the watershed scales and that are relevant to hydrological and biogeochemical functioning of terrestrial ecosystems. The position focuses on the development of advanced acquisition, processing, and change detection approaches for monitoring complex terrestrial environments in the Colorado River Basin (CO) and in the Arctic (AK).

Essential for this position is expertise in near-surface earth or environmental sciences with a particular emphasis on at least one of the following domains: airborne-based multi/hyperspectral and/or geophysical data acquisition and processing, soil physics and hydrology at the field scale, and surface-subsurface water-heat-gas fluxes.

The position requires an outstanding record of original and high-quality research, and demonstrated experience and enthusiasm for subsurface and surface processes characterization and monitoring. Essential for the position is a Ph.D. in earth sciences, environmental sciences or engineering and experience with field data integration and assimilation. Desired is a familiarity with hydrogeophysical techniques, soil physics, remote sensing approaches, statistical methods for data analyses and an interest in working with a multi-disciplinary team to understand complex near-surface processes.

The Earth Sciences Division in Lawrence Berkeley National Laboratory takes advantage of multi-disciplinary research expertise to tackle many critical and challenging environmental questions, including quantification of terrestrial environments and their dynamics. Berkeley Lab is located in an environment recognized for offering a high quality of life, having both abundant natural beauty and exciting urban surrounds.

For more information about the LBNL Environmental Geophysics Group, please visit http://esd.lbl.gov/departments/geophysics/core_capabilities/environmental_geophysics.html. For more information about the relevant projects, please visit <http://ngee.ornl.gov/> and http://esd.lbl.gov/research/projects/sustainable_systems/

To apply, please visit <http://jobs.lbl.gov> and reference Geological Postdoc Fellow posting #80701



TO CONTRIBUTE MATERIAL TO THE NSFG NEWSLETTER SEND AN E-MAIL TO:

[Burke Minsley \(bminsley@usgs.gov\)](mailto:bminsley@usgs.gov)

DEADLINE: Material must be received 5 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.

GET YOUR MESSAGE OUT NS MEMBERS FASTER:

You will no longer need to wait until the end of the month to share an important or time-sensitive contribution to the newsletter. Appropriate contributions to the newsletter will also be shared ASAP via Twitter. Please note that only NSFG members that follow [@NS_AGU](https://twitter.com/NS_AGU) will receive Twitter announcements; so make sure that you sign up!