

May 2010 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: <http://nsg.agu.org>

AGU NS Membership as of May 2010:

Primary affiliation: 691 members; Secondary: 2316 members

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1. Call for 2010 Fall AGU Meeting Session Proposals: Submission Deadline May 27 (from Chester Weiss)

The May 27 deadline for proposing sessions at the 2010 Fall Meeting (December 13-17, San Francisco) is fast approaching. Please consider proposing a Near Surface (NS) session. A strong set of sessions will help NS maintain a significant presence at the Fall Meeting! It is also the perfect meeting to organize co-sponsored sessions with other disciplines that are well-attended at Fall AGU: Tectonophysics, Seismology, Volcanology, Mineral & Rock Physics, Biogeosciences, Cryosphere, Geodesy, Geomag & Paleomag, Education, Hydrology, etc.

Submitting a session proposal is easy - just requiring a short abstract and the contact details of a minimum of two conveners. The web site is

[http://www.agu.org/meetings/fm10/program/session\\_proposals.php](http://www.agu.org/meetings/fm10/program/session_proposals.php)

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2. Joint Assembly Meeting of the Americas, 08-13 August 2010, Foz do Iguassu, Brazil (from Juan Lorenzo)

Countless thanks to all who have contributed thought and time to creating the Near Surface Geophysics Sessions at the Joint Assembly Meeting of the Americas, 08-13 August 2010, Foz do Iguassu, Brazil. Your efforts have paid off. We are now expecting a total of 4 oral sessions, 3 poster sessions representing 70 abstracts, with 9 invited speakers. Most important, we see definite growth in relevance and interest in the Near Surface Geophysics Section.

Regards,

Juan Lorenzo; Jandyr Travassos (Program Committee for NS at JA)

Near Surface Geophysics sessions:

NS01: Near Surface Geophysics General Contributions - Poster (Conveners: Jandyr De Menezes Travassos and Juan Manuel Lorenzo)

NS05: Open Reference Data sets, Software and Control Test Sites - Oral (Conveners: Juan Manuel Lorenzo and Jorge Porsani)

NS06: Radioactivity in the Near Earth Surface Environment – Oral and Poster (Conveners: Joselene Oliveira and Fernando Brenha Ribeiro; Cosponsors: Volcanology, Geochemistry and Petrology; Paleoceanography and Paleoclimatology; Biogeosciences; Natural Hazards; Hydrology)

NS07: Technological Developments in Near-surface Geophysics I - Oral (Conveners: Sergio Luiz Fontes and Louise Pellerin)

NS08: Mapping and Monitoring the Near-surface – Oral and Poster (Conveners: Evert C. Slob, Sebastien Lambot; Cosponsors: Natural Hazards )

The Meeting of the Americas (<http://www.agu.org/meetings/ja10/>) will be held 08-13 August 2010 in Foz do Iguacu, Brazil. The Iguazu World Natural Heritage Park will provide a spectacular backdrop to this Assembly which is sponsored by the most important Earth Science and Space Community Organizations of the Americas.

NS Program Committee for JA 2010 :

Jandyr Travassos, Brazil [<mailto:jandyr@on.br>](mailto:jandyr@on.br)

Juan Lorenzo, [<mailto:gllore@lsu.edu>](mailto:gllore@lsu.edu)

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3. European Meeting of Environmental and Engineering Geophysics, Zurich, Switzerland (from Niklas Linde)

6 - 8 September 2010

16th European Meeting of Environmental and Engineering Geophysics

Zurich, Switzerland

The deadline has passed for submitting extended abstracts

More information: [http://www.eage.org/events/index.php?evp=3149&ActiveMenu=2\\*](http://www.eage.org/events/index.php?evp=3149&ActiveMenu=2*)

Invitation

On behalf of Swiss applied geophysicists, I am pleased to invite you to Near Surface 2010, the 16th European Meeting of Environmental and Engineering Geophysics to take place in Zurich on 6 – 8 September 2010.

The conference will be held in the main building of ETH, which was built in the 1860's based on a design by the famous ETH Professor of Architecture, Gottfried Semper. This classic building overlooks the fashionable city of Zurich with its breathtaking views of the Swiss Alps.

Numerous high quality bars, cafés, restaurants, discos and nightclubs can be found throughout the city. The pleasant ambience of central Zurich is enhanced by pedestrian-only streets and cobblestone alleys on either side of the picturesque Limmat River. For those conference participants and spouses who are interested in hiking and mountaineering, it is possible to travel by rail or road from Zurich to the high mountains in less than 35 minutes; September is often the optimum month (great weather and few tourists) to visit the Alps. For those who wish to experience diverse cultures, Switzerland's borders with Germany, France, Austria, Italy and the tiny Principality of Lichtenstein are all within a short distance of Zurich.

ETH has a well deserved academic reputation. In recent global assessments, it has been consistently ranked as the top university in continental Europe. The most famous graduate of ETH was none other than Albert Einstein! He is one of twenty-one Nobel Prize Winners to have been associated with ETH during their student and/or professional careers. Although not a Nobel Prize winner, the contribution of former ETH Professor of Geophysics Fritz Gassmann (Gassmann theory and equation) to our understanding of wave propagation through porous media was a landmark in applied geophysics. The current ETH group of environmental and engineering geophysics dates from 1992. Two of its former employees are now professors at the University of Lausanne, the other major centre of Swiss geophysics. Research activities at the two Swiss centers of applied geophysics range from theoretical and algorithmic developments to applications of state-of-the-art geophysical methods in archeological, geological, hydrological, engineering, environmental and hazard-related investigations.

In addition to the feast of lectures and posters that will cover many areas of environmental and engineering geosciences, conference participants will also have the opportunity to attend a hydrogeophysics workshop that will be given by a world-class group of environmental and engineering geophysicists. It will also be possible to visit an active hydrogeophysics test site or a spectacular Alpine underground rock laboratory in which a wide variety of geoscientific experiments are being conducted as components of numerous national and international radioactive waste disposal programs.

Near Surface 2010 will be an ideal venue for you to learn about the latest developments in environmental and engineering geosciences, to network with new and existing colleagues and to experience a vibrant European city and the nearby Swiss Alps.

Alan Green

Chairman of the Local Advisory Committee, Near Surface 2010

\*Hydrogeophysics workshop on 5 September, 2010

\*More information:

<http://www.eage.org/events/index.php?evp=3168&ActiveMenu=15&Opendivs=s3,s15>

Convenor: Niklas Linde (University of Lausanne)

Many geophysical data types are sensitive to a combination of hydrological properties and state variables and may therefore provide useful independent information in hydrological studies. How to quantitatively link different geophysical and hydrological data types is still an open question. A world-class group of invited speakers will provide their views on the links between

geophysical and hydrological properties, robust hydrogeophysical parameter estimation and data integration and fully-coupled hydrogeophysical inversion. Results from ongoing hydrogeophysical research aimed at investigating river-groundwater interactions will serve as a basis for discussions on how field-based hydrogeophysical research can be achieved.

\*Invited speakers with tentative titles of talks: \*

Thomas Günther

Leibniz Institute for Applied Geophysics

Multi-method geophysical inversion methods applied to hydrology

Esben Auken

Aarhus University

Airborne electromagnetic methods applied to hydrology

Andreas Kemna

University of Bonn

Spectral induced polarization methods applied to hydrology

Andrew Binley

Lancaster University

Constraining hydrological models with geophysical data

Klaus Holliger

University of Lausanne

Integration of high-resolution geophysical data for the characterization of alluvial aquifers

Frederick Day-Lewis

U.S. Geological Survey

Multi-method geophysical investigations of groundwater/surface-water interaction

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#### 4. SEG-NSGS news (from Jan van der Kruk)

##### 4.1. SEG 2010 Denver Colorado, 17-22 October

The 80<sup>th</sup> SEG Annual Meeting, Colorado, takes place in Denver from 17-22 October and over 60 near surface geophysics abstracts were submitted. Xianhuai Zhu and Klaus Holliger are the Technical Chairmen this year for the Near Surface Geophysics part of the SEG annual meeting. They are looking forward to organizing high quality sessions. This year we will have in addition to the regular sessions three special sessions: 1) Hydrogeophysics, 2) Geohazards and Public Safety and 3) Geophysics at the Community Scale (see below). Students are encouraged to apply for one of the multiple NSGS \$500 travel grants to attend SEG 2010. See <http://nsgs.org/student-travel-grants.htm> for details. If you are not a member of the SEG-NSG Section, please consider joining (<http://nsgs.org/join.htm> or contact [seg.nsgs@gmail.com](mailto:seg.nsgs@gmail.com)).

Special sessions:

Hydrogeophysics

Klaus Holliger, [klaus.holliger@unil.ch](mailto:klaus.holliger@unil.ch) & Andre Revil, [arevil@mines.edu](mailto:arevil@mines.edu)

Traditionally, aquifer characterization is based on the analysis of drill cores and geophysical borehole logs as well as the results of tracer and pumping experiments. Core and logging studies can provide detailed local information, but are inherently 1D in nature, whereas tracer and pumping tests tend to capture the gross average properties of a probed region. Without complementary information, these techniques may thus be inadequate for reliably characterizing laterally heterogeneous aquifers. The inherent gap in resolution and coverage between core/logging studies and pumping/tracer tests can be bridged by high-resolution geophysical techniques. The corresponding rapidly growing and dynamically evolving interdisciplinary field of research is now commonly referred to as hydrogeophysics. The proposed special session will focus on the latest developments and emerging trends in the use of the of geophysical methods for the characterization of aquifers and the long-term management of water resources. Given the inherent conceptual similarities of geophysical approaches to aquifer and reservoir characterization, particular attention will attributed to geophysical approaches from the petroleum industry that can be adapted and transferred to applications in water resources.

Geohazards and Public Safety

Rick Miller, [rmiller@kgs.ku.edu](mailto:rmiller@kgs.ku.edu)

Geohazards are found across a wide range of geologic settings, with varying degrees and types of risk to life and property. The number and type of geohazards are as vast and diverse as the different geologic provinces that span the globe. As our ability to conquer some of the most challenging of these frontier areas for economic development, habitation, recreation, and transportation, so comes the need to characterize the risks and ensure controls put in place that properly influence these environments. Near-surface geoscientists have been developing and using geophysics as a frontline tool for many years to both evaluate potential surface instabilities and threats in the presence of subsurface hazards as well as monitor the effectiveness of structures designed to harness and constrain natural forces. This area of study and practice includes an enormous range of applications and geophysical tools, which are continuously changing and evolving through time. Papers, both invited and submitted under the standard SEG technical meeting open announcement, will be presented. Topics will include everything from slope stability in alpine regions to overpressured zones associated with gas hydrates. This will be a session with potentially broad society interest.

NOTE: Deadline for submitting expanded abstracts to the SEG annual meeting in Denver is consistent with the deadline for papers submitted to the TLE for consideration in a special section on Geohazards. This coincident call for papers will benefit both venues and allow annual meeting attendees to view at least a few of the papers to be presented at the conference in advance on the pages of the August TLE.

Geophysics at the Community Scale

Louise Pellerin, [pellerin@ak.net](mailto:pellerin@ak.net) & Jan van der Kruk, [j.van.der.kruk@fz-juelich.de](mailto:j.van.der.kruk@fz-juelich.de)

Geophysics has been used to deepen our fundamental understanding of the Earth's structure and processes. The predominant use of geophysics is the exploration of natural resources including oil and gas, minerals, and water. Near surface geophysical methods are used to investigate

environmental, natural hazards and engineered structures. Applied geophysics can be a powerful tool to deal with the current challenges of limited resources and environmental problems, and should be more connected with communities in need to benefit people and the environment around the world. Here, an interdisciplinary approach plays an important role. Challenges are the local conditions, the ease of implementation and the sustainability of the approach. Already, a number of initiatives within the geoscience community are bringing geophysics to the community scale. In this session, we wish to explore technical and non-technical advances that have been used to support communities in the developing world, and exchange ideas and experiences of students, universities, corporate entities and non-governmental organizations. In addition, we highlight work in progress in SEG Geoscience Without Borders and promote programs and processes that encourage geophysicists to partake in humanitarian activities.

#### 4.2. Call for NSGS Executive Committee Nominations

The NSGS Nominations Committee is soliciting nominations for President-Elect and Treasurer for the 2010/2011 NSGS Executive Committee. The duties of the officers can be found at [http://nsgs.seg.org/Bylaws\\_October2008.pdf](http://nsgs.seg.org/Bylaws_October2008.pdf). If you would like to be nominated or you would like to nominate someone, please let us know by emailing us at [nsgs@seg.org](mailto:nsgs@seg.org). We encourage any member with interest in strengthening the NSG community to become more involved in the NSGS.

#### 4.3. Call for Awards Nominations

##### Harold Mooney Award

The Harold Mooney Award is presented by the NSG Section during its reception and dinner at the SEG annual meeting. The honoree is chosen by his or her peers through nominations from the membership and recommendation to the NSG Section Executive Committee. The award is presented to an individual in recognition of long-term, tireless, and enthusiastic support of the near-surface geophysics community through education, outreach efforts, professional service, or development of opportunities with other professional disciplines that employ geophysics.

##### Frishknecht Leadership Award

The Frank Frischknecht Leadership Award is jointly presented by the NSG Section and the Environmental and Engineering Geophysical Society (EEGS). The award alternates (on an approximately 18-month interval) between the SAGEEP meeting and the NSG Section's banquet at the SEG annual meeting. This year it will be presented by the EEGS, but the NSGS can send nominations to the EEGS for consideration. The Frank Frischknecht Leadership Award is established to recognize an individual who shows extraordinary leadership in advancing the cause of near-surface geophysics.

For more information see <http://nsgs.seg.org/section-awards.htm>

Send nominations to Larry Bentley (Treasurer NSGS) by email ([lbentley@ucalgary.ca](mailto:lbentley@ucalgary.ca)) or snail mail (Department of Geoscience, University of Calgary, Calgary, Alberta T2N 1N4, Canada). The nomination should contain the name, title and affiliation of the candidate along with a statement describing the reasons for the nomination.

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5. XIII International conference on Ground Penetrating Radar, Lecce, 21-25 June 2010

The Institute for Archaeological and Monumental Heritage IBAM-CNR, the Department of Innovation Engineering and the Department of Science of Materials of the University of Salento are pleased to invite you in Italy for the XIII issue of the GPR conference

For further information regarding registration, organizing committee and scientific program please visit: <http://www.ibam.cnr.it/gpr2010/>

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6. 72<sup>nd</sup> EAGE Conference & Exhibition incorporating SPE EUROTEC 2010, 14-17 June 2010

The 72<sup>nd</sup> EAGE Conference & Exhibition incorporating SPE EUROPEC 2010 will be held at CCIB, Barcelona, Spain.

For further information regarding registration, technical program or conference highlights please visit: <http://www.eage.org/events/index.php?evp=2954&ActiveMenu=2&Opendivs=s3>

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7. SAGEEP 2011, Charleston SC, April 11-14 2011

In order to meet the evolving need of our membership—and to attract new members—the Environmental and Engineering Geophysical Society (EEGS) will be launching a new approach for technical session development, abstract preparation, and submission for the Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP). These procedures will be in place for SAGEEP 2011, which will be held in Charleston, SC.

- A call for session proposals will be released in May 2010. Sessions may be proposed through September 6, 2010, via the EEGS website, and will require a brief description and list of potential speakers. Once accepted, session proposers will be responsible for developing the session by soliciting papers from individuals in the subject area. Also new this year will be that each session may have one “invited” paper, which may be longer in duration than the others.

- Expanded multi-page abstracts for the proceedings will no longer be required, but will instead be optional based on the desires of the participant.

- The abstract deadline for SAGEEP 2011 will be November 19, 2010. Abstracts will be short (300 words max), and a format template will be prescribed. Submission of an abstract will constitute a commitment to attend the conference, and a \$50 fee will be charged upon submission. Abstracts will be reviewed for both scientific relevance and absence of commercialism, and notices of acceptance or rejection will be sent in late 2010.

- Authors will then have the option of submitting an expanded abstract, if they choose. These optional expanded abstracts may range in length from a few pages to ten or more pages, and will retain the format of previous SAGEEP proceedings. They must be submitted by January 14, 2011, to be included in the abstract volume that will be distributed at the conference.

Please address any questions regarding these changes to the SAGEEP 2011 Technical Chair, Dr. Gregory Baker ([gbaker@tennessee.edu](mailto:gbaker@tennessee.edu)) or General Chair, Dr. William Doll ([dollw@battelle.org](mailto:dollw@battelle.org)). Consult the EEGS website, [www.eegs.org](http://www.eegs.org) for current information.

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

Xavier Comas [xcomas@fau.edu](mailto:xcomas@fau.edu)

**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