

January 2009 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>
<<https://owa.ku.edu/exchweb/bin/redir.asp?URL=http://nsg.agu.org>>

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1. AGU 2009 Joint Assembly

The 2009 AGU Joint Assembly will be held May 24-27 in Toronto, Canada. Information about the meeting and planned NS sessions can be found at <http://www.agu.org/meetings/ja09>. This year will include a special session on Inversion of Resistivity Data that will introduce a new workshop format to be adopted at JA meetings.

Abstract submissions are now open, until the submission deadline of March 4 (http://www.agu.org/meetings/ja09/program/abstract_submissions.php).

1.1 Joint Assembly Special Session on Inversion of Resistivity Data, Rosemary Knight and Chet Weiss

We are doing something new at the 2009 AGU Joint Assembly in Toronto: A "Back to Basics" (B2B) special session focused on inversion of resistivity data. The motivation for starting B2B sessions at AGU meetings - with increasing use of near-surface geophysical data for a wide range of applications, it is important to keep returning to the basics - talking about, and thinking about, the critical

steps in the acquisition and interpretation of our data. We are delighted to have two invited speakers, Andrew Binley and Doug Oldenburg, who will launch the B2B session by discussing their approach to the inversion of resistivity data and their thoughts about the need for, and challenges in, sharing of software and data.

The focus of this session: field and synthetic data sets posted on the NS website. All those presenting in the sessions are required to complete this "homework". The sessions will thus become an opportunity to compare and contrast various approaches to the inversion of the data sets. All submitted presentations will be poster presentations, preceded by an oral session where all participants have 3-minutes to introduce their work and summarize key points.

Electrical Resistivity Field Data Sets: Two 2D surface electrical resistivity field data sets will be available as of January 16th. One, referred to as Mohave data, was provided by Kamini Singha and was acquired to monitor an infiltration test in the Mohave Desert. The other, referred to as HJA data, was provided by Nigel Crook and was obtained in the H.J. Andrews Experimental Forest (Oregon) to determine substream structure. To download these data, go to the NS website http://www.agu.org/focus_group/nsg/ and follow the link to the JA data sets in the top left corner. A synthetic data set will be posted by 30 January. If you have trouble accessing the data, please contact Rhett Herman (rherman@radford.edu). Any other questions about the data or the session, please contact Rosemary Knight (rknight@stanford.edu).

2. Update of NS activities at the Fall AGU 2008 meeting

2.1 NS Focus Group Luncheon at Fall AGU

The annual Near Surface focus group luncheon was held on Tuesday, December 16 at the San Francisco Marriott Hotel. Sixty five NS members attended this event. It was a great opportunity to visit with friends and colleagues and get an update on the activities of the focus group.

Lee Slater (Chair) acknowledged Rosemary Knight (Past-Chair) for her tireless contributions to the focus group and the near surface geophysics community. He then gave an overview of the current state of the focus group (596 primary members; 1939 secondary members; 2535 members total) and he encouraged the involvement of members for the continued success of AGU NS (e.g. by proposing special sessions for the AGU meetings, volunteering for officer positions in the focus group).

Elliot Grunewald (student representative) talked about his new role in organizing the student members and helping NS serve the interests of its student body.

Rosemary Knight introduced a new session format "Back to Basics" that will be implemented at the 2009 Joint Assembly in Toronto.

Louise Pellerin (Vice-Chair) talked about the broader near surface geophysical community and inter-society relations (AGU-NS, EAGE NSGD, EEGS, SEG NSGS). She also launched the design competition for an NS logo that aims to capture the diverse methods and applications of near-surface geophysics.

2.2 Update of NS Student activities, from Elliot Grunewald

The Fall AGU meeting provided a great opportunity to discuss how the NS group can best serve its

student membership. In addition to addressing student-related issues at the executive committee meeting, the focus group sponsored a casual student luncheon that was attended by 14 students from 8 universities. Brainstorming at the luncheon was productive and demonstrated that students are eager to play an active role in the NS group.

A few ideas that came out of these meetings are summarized below:

Student Webpage -- The NS website is already an excellent resource for the group and the addition of a "For Students" page would allow information relevant to students to be easily accessed and posted. In addition to job listings and graduate program opportunities, we hope that this page can advertise broader opportunities including fieldwork experience, grants and funding, session organization/co-chairing, professional development, and social gatherings at future meetings.

Members can submit content to the page by emailing me at elliottg@stanford.edu.

Student Forum -- Another idea discussed at the student luncheon was the creation of an online forum to enhance communication and interaction among NS students. The forum would allow participating students to list their name, email, and area of expertise and may also link to a threaded discussion board. If students have any ideas for how best to implement such a system, please send me your suggestions.

Session Organization -- Both students and non-student members expressed a desire to see more active involvement of students in the organization and chairing of conference sessions. Although students are not permitted to independently propose AGU sessions, they are allowed to co-chair sessions. I strongly encourage students interested in organizing sessions to seek out senior members with similar interests, and likewise, for potential session chairs to invite students to help organize and co-chair.

I really enjoyed the opportunity to meet and chat with so many students during AGU week. I hope you will not hesitate to send your ideas and comments (elliottg@stanford.edu) in the future.

2.3 NS at the first AGU "Exploration Station", Fall AGU Meeting, from Lee Slater
AGU hosted its second family science event at the 2008 Fall Meeting. The "Exploration Station" was held on Sunday 14 December from 12-4 pm and was organized with the help of Rochester Institute of Technology (RIT) and NASA Solar Dynamics Observatory's Education and Public Outreach department. It built on the pilot Exploration Station, held during the 2008 Joint Assembly meeting in Fort Lauderdale (see 5 August 2008 issue of Eos, volume 89, number 32). The NS Focus Group was well represented by two exhibits on display. Andrew Parsekian (PhD student, Rutgers-Newark) had two demonstrations on display [1] a mock 'leaky landfill' showing how electrical resistivity methods can be used to detect and monitor leaks from landfill liners [2] exploration with induced polarization showing how the IP effect manifest as voltage decay curves can be used to detect ore bodies. The University of Kansas Center for Remote Sensing of Ice Sheets (CRISIS) had an exhibit on the study of polar ice sheets and their contribution to sea level change, and a demonstration of ice flow processes. The exploration station

included a Scavenger Hunt activity encouraging children to visit the various stations and participate in each activity. The event was attended by approximately 150 members of the public and is likely to be repeated at future meetings.

3. Seth Haines has accepted the role of NS Focus Group representative to the EOS Advisory Board. From Seth:

Hello all. I look forward to serving in this new role, and anticipate that it will facilitate increased NS-related content and greater NS Focus Group visibility in EOS. I am also hopeful that we can use this position to enhance the relationship between the NS community and the AGU as a whole.

My responsibilities include all aspects of communication between the EOS editors and the NS Focus Group; ideally this communication occurs in both directions. If you have ideas for any sort of EOS content (feature articles, columns, news items, members who ought to be recognized in the Geophysicists column, etc.) please contact me. In addition, I will help the EOS editors to identify topics and/or authors for invited feature articles and I will assist with various aspects of evaluating NS- and non-NS-related content. The global importance of near-surface geophysics is steadily growing and EOS is an easily accessible medium for highlighting the contributions that we as a community make to the AGU and to society as a whole. Let's use it.

For those I haven't met yet, I'm a research geophysicist with the USGS in Denver. My research interests primarily involve the application of seismic methods to various problems in the near surface. My current work focuses on subjects such as aquifer characterization and the assessment of natural gas hydrates. My other interests include skiing, hiking and fly fishing.

Please contact me (shaines@usgs.gov) with any EOS-related ideas, comments or questions. Thanks.

4. Search for an NS Representative on the 2010 Joint Assembly, from Lee Slater

The NS Focus Group is currently looking for a volunteer to serve as the NS Focus Group representative on the Technical Program Committee for the 2010 Joint Assembly (08-13 August 2010, Iguassu Falls, Brazil). Program committee representatives play a critical role in promoting representation of the NS Focus Group at AGU meetings. NS has a history of a strong presence at the joint assemblies and we hope to maintain this tradition. We are looking for an enthusiastic individual to serve in this role and help generate novel ideas on how to use the flexibility offered in the Joint Assembly schedule, along with the South American venue, to promote NS activities and events at this meeting. Basic duties of a Technical Program representative include attending two 1.5-2 day meetings at AGU headquarters and soliciting/encouraging input from the community on session proposals and other activities. Interested individuals should contact Lee Slater for further details (lslater@andromeda.rutgers.edu).

5. Environmental and Engineering Geophysical Society News

5.1 The December issue of FastTIMES is published online and available for download from www.eegs.org/fasttimes/latest.html

5.2 Online registration for SAGEEP 2009 begins on January 15, 2009 at www.eegs.org/sageep/. Sageep 2009 will be held in Fort Worth, Texas, March 29-April 2.

6. European Geosciences Union (EGU), General Assembly 2009, 19-24 April, Vienna

The EGU General Assembly 2009 will bring together geoscientists from all over Europe and the rest of the world into one meeting covering all disciplines of the Earth, Planetary and Space Sciences. Especially for young scientists the EGU appeals to provide a forum to present their work and discuss their ideas with experts in all fields of geosciences.

The EGU is looking forward to cordially welcome you in Vienna!

<http://meetings.copernicus.org/egu2009/>

Sessions of interest include:

SM5.2: Seismic inversion and imaging: New theoretical developments and applications

Convener: V. Sallarès | Co-Convener: S. Buske

SM5.3: Seismic tomography - state of the art: algorithms and results

Convener: I.Yu. Koulakov | Co-Conveners: E. Kissling , A. Morelli

SM5.4: Imaging the shallow subsurface with seismic and ground-penetrating radar methods

Convener: L. Nielsen | Co-Conveners: K. Holliger , H. Maurer

SM5.6/MPRG24: New approaches to the analysis and interpretation of Magnetotelluric data

Convener: W. Heise | Co-Convener: M. Jegen

HS3.6: Hydrogeophysics in subsurface hydrology

Convener: H. Vereecken | Co-Conveners: T. Ferre , U. Yaramanci

MPRG4: Heterogeneity and anisotropy in geomaterials: a scaling issue?

Convener: A.J. Maineult | Co-Conveners: L. Louis , R. Toussaint

MPRG7: The transport properties of geomaterials: Theory, modeling, measurement, application and integration

Convener: P. Glover | Co-Convener: F. Ferri

7. MARELEC 2009, International Marine Electromagnetics conference MARELEC 2009 is the 6th International Marine Electromagnetics conference. It combines a world class conference with an exhibition and poster session. MARELEC provides an

exciting opportunity for professional scientists and engineers from many disciplines to share their understanding and experience in electromagnetic phenomena in the marine environment. Today this sphere of science and technology is relevant to an ever-increasing number of applications and questions, from the oil and mineral exploration industries to military equipment, and from influences on marine life and materials to sophisticated measurement and modeling tools. As we continue to understand and exploit the marine environment, electromagnetic effects are becoming ever more widely applied.

MARELEC uniquely attracts delegates from academic, industrial, theoretical, experimental and military backgrounds. We aim to and succeed in bringing together international experts from these many different areas to examine the status of both fundamental issues and applications of marine electromagnetic phenomena. Previous conferences in the series have demonstrated clearly the value of providing a style and forum within which these boundaries can be easily crossed and valuable new contacts forged.

MARELEC 2009 will be held at the Scandic Hotel Hasselbacken in Stockholm, Sweden from 7 - 9 July 2009.

The deadline for receipt of abstracts is 9th February 2009. Further information on <http://www.marelec.co.uk/> <<https://owa.ku.edu/exchweb/bin/redirect.asp?URL=http://www.marelec.co.uk/>> .

8. Positions:

8.1 Multiple Employment Opportunities at the U.S. Army Engineer Research and Development Center The Geotechnical Engineering and Geosciences Branch (GEGB) of the Geotechnical and Structures Laboratory (GSL) at the U.S. Army Engineer Research and Development Center (ERDC) is announcing the need for additional geophysicists, geologists and geotechnical engineers. The ERDC is a consortium of seven laboratories headquartered in Vicksburg, Mississippi composed of approximately 2500 scientists and engineers. The ERDC is the research arm of the Army Corps of Engineers and performs science and engineering research and development for all of the Department of Defense as well as most other government agencies. We are looking to hire at all levels (BS, MS, PhD). If you are interested in potential employment, please respond with a resume and any questions that you may have. Additional information about the ERDC can be found at www.erdcl.usace.army.mil <<http://www.erdcl.usace.army.mil/>> and by contacting Dr. Monte Pearson (monte.l.pearson@usace.army.mil) or Ryan North (ryan.e.north@usace.army.mil)

8.2 Faculty position, EM methods, Department of Geophysics, Colorado School of Mines The Department of Geophysics invites applications for an anticipated tenure-track position, likely to be filled at the rank of Assistant Professor. Candidates for Associate Professor will be considered. The department wants to expand its research and teaching in electromagnetic (EM) methods by adding a faculty member with expertise applying EM methods to one or more areas such as mineral and petroleum exploration, geothermal exploration, groundwater hydrology, environmental and geotechnical problems, permafrost, hydrates, glaciology, infrastructure monitoring, or biological monitoring.

"Mines" is a unique institution of applied science and engineering with a global reputation for excellence in Geophysics, focusing on natural resources, environment, energy, and economics.

Responsibilities: The successful candidate will conduct a vigorous research program that includes raising research funding and supervising graduate students. The successful candidate will also teach at both the undergraduate and graduate levels, and participate actively in the local and international geophysics communities.

Qualifications: Candidates must possess a doctoral degree in geophysics or a related field. Applicants for the Assistant Professor level must demonstrate potential for successful teaching and research. For the Associate Professor level, additional qualifications include a proven record in teaching, publishing and securing research grants. Candidates must also possess superb interpersonal and communication skills and a collaborative style of research and teaching. Preference will be given to candidates whose research interests hold potential for multidisciplinary collaboration.

How to Apply: Send a letter of interest specifying interest at Assistant or Associate rank and addressing each of the qualifications, resume, list of publications, record of successful research funding, and 3 professional letters of reference to: Colorado School of Mines, Human Resources Office, Search #08-061050, 1500 Illinois Street, Golden, CO 80401, Fax: (303) 384-2025. Electronic applications are encouraged and will be accepted at faculty.search@is.mines.edu. If using this method of application, please put the search number as indicated above (in bold) in the subject line to ensure that your materials are properly forwarded to the search committee. Review of applications will begin by February 15, 2009. Applications will be accepted after this date until suitable candidates are identified.

Questions about this position may be addressed to Dr. Terry Young tkyoung@mines.edu, Head, Department of Geophysics.
<http://geophysics.mines.edu>
<<https://owa.ku.edu/exchweb/bin/redir.asp?URL=http://geophysics.mines.edu>>.

8.3 Tenure track positions, Evolution of Sedimentary Systems, McGill University
The Department of Earth and Planetary Sciences at McGill University invites applications for up to two tenure-track positions in evolution of sedimentary systems. One of the hires will be appointed the T.H. Clark Chair in Sedimentary and Petroleum Geology. Our preference is to make the appointment at the Assistant Professor level; however, outstanding candidates at higher ranks are encouraged to apply.
Applicants with interdisciplinary research interests, including but not limited to sedimentology, geophysics, tectonics, landscape processes, earth surface dynamics, basin architecture and evolution, quantitative geomorphology, and paleoenvironments, are encouraged to apply. We particularly seek individuals who employ integrative approaches to sedimentary systems through fieldwork, laboratory experiments, and/or numerical modeling, as well as individuals who address the complex interactions and feedbacks among physical, chemical, and biological processes of sedimentary systems.

The appointees will establish an externally funded research program, mentor graduate students, and teach undergraduate and graduate courses in their respective fields. A Ph.D. is required at the time of appointment and post-doctoral experience is desirable. Salary will be commensurate with experience and standing in the community. Applicants should submit a letter of application, curriculum vitae, and a statement of research interests and teaching philosophy. Candidates also should arrange for three confidential letters of recommendation to be sent under separate cover by the candidate's referees.

Applications and letters should be sent to: Professor John Stix, Chair, Department of Earth and Planetary Sciences, McGill University, 3450 University Street, Montreal, Quebec H3A 2A7, Canada.

The anticipated start date for the position is July 1st, 2009. Review of the applications will begin on January 15th, 2009, and continue until the position is filled. Information about the department can be found at <http://www.eps.mcgill.ca> <<https://owa.ku.edu/exchweb/bin/redirect.asp?URL=http://www.eps.mcgill.ca>>.

McGill University is committed to equity in employment and diversity. It welcomes applications from indigenous peoples, visible minorities, ethnic minorities, persons with disabilities, women, persons of minority sexual orientations and gender identities and others who may contribute to further diversification. All qualified applicants are encouraged to apply; however, in accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

8.4 Postdoctoral Research Fellow in Geophysics, Lancaster University, UK, 3 year contract available from 1 April 2009 The Lancaster Environment Centre has an opening for a Postdoctoral Research Fellow on the recently funded FP7 EU research project ModelPROBE (Model-driven soil probing, site assessment and evaluation), led by UFZ Leipzig and involving 19 partners from 9 European countries. For more information on the ModelPROBE project see <http://www.ufz.de/index.php?en=16925> <<https://owa.ku.edu/exchweb/bin/redirect.asp?URL=http://www.ufz.de/index.php?en=16925>>.

The project aims to develop tools and techniques for soil contamination assessment, site characterization and sustainable remediation. The ModelPROBE approach relies on the combination of advanced geophysical site characterization techniques and new direct push probing systems integrated with geophysical, hydrogeological and biogeochemical methods for source localization and identification. The approaches will be applied to well characterized reference sites across Europe.

The Research Fellow at Lancaster will work in Andrew Binley's hydrogeophysics research group and assist in the development of methods for integration (fusion) of multiple data types in geophysical data inversion, providing improved site and process characterization. It is anticipated that use will be made of results from electrical (including induced polarization), electromagnetic and radar surveys, in addition to localized high resolution logs from the direct push technology. The appointment at Lancaster will be for a period of three years. The ideal candidate should have some expertise in numerical methods and ideally have experience of potential field modeling, inverse methods. The candidate should

have programming experience. Contributing to postgraduate and undergraduate teaching is possible, but not mandatory.

Research will be conducted in close collaboration with project partners Andreas Kemna (University of Bonn) and Giorgio Cassiani (University of Padova). It is expected that the candidate has a PhD in geophysics, engineering or applied mathematics and is familiar with some areas of environmental geophysics.

For more detailed information and details of the application procedure contact Andrew Binley at:

Lancaster Environment Centre, Lancaster University, Lancaster, LA1 4YQ, UK. Tel: +44 1524 593927, Email: a.binley@lancaster.ac.uk.

Closing date: 13 February 2009. Interviews in March 2009.

8.5 Postdoctoral Position - Hydrogeophysics, Department of Earth Sciences, Aarhus University, Denmark The HydroGeophysics Group (HGG) at the Department of Earth Sciences, Aarhus University, Denmark, has an opening for a gifted young geophysicist at the postdoctoral level. The appointment will be for an initial period of two years. Subject to good performance and funding, the position might be extended. We seek an excellent scientist with expertise and interests in theoretical and/or practical aspects of electric and electromagnetic methods with special focus on hydrological problems. The position requires a PhD degree in geophysics or engineering with a strong background in the use and application of inverse theory and numerical methods for subsurface characterization.

A demonstrated ability to work successfully within multidisciplinary research teams is required. We expect excellent communication skills in English, both verbally and in writing, and willingness to travel. The successful candidate will be expected to initiate and conduct his/her own research projects, continue already existing research projects, co-supervise undergraduate and graduate level thesis projects and give lectures at applied geophysics courses.

The candidate shall initially work with airborne geophysics within the CLIWAT project (www.cliwat.eu), however, if he/she has a strong interest in working with IP/resistivity methods and/or MRS, it is definitely a possibility.

The full advertisement can be seen on

www.hgg.geo.au.dk/div/PostdoctoralPosition.pdf

<<https://owa.ku.edu/exchweb/bin/redirect.asp?URL=http://www.hgg.geo.au.dk/div/PostdoctoralPosition.pdf>>.

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

George Tsoflias tsoflias@ku.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 hyperlink 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). Do not submit e-mail attachments for distribution.