

October 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 October 2010:

Primary affiliation: 680 members; Secondary: 2843 members

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1. 2010 Fall AGU Meeting 13-17 December, San Francisco

- 1.1. Near-Surface Geophysics sessions (from Chester Weiss)

A total of 120 NS abstracts were received resulting in 5 oral sessions and 7 poster sessions. Approved Near-Surface Geophysics sessions for the 2010 AGU Fall Meeting (<http://www.agu.org/meetings/fm10/>) are as follows:

NS01: Near-Surface Geophysics General Contributions

Conveners: Chester Weiss, Virginia Tech, cjweiss@vt.edu; Leif Cox, Montana Tech, lcox@mtech.edu

NS02: Inversion II: Uncertainty and Managing the Unknown

Cosponsors: Geomagnetism and Paleomagnetism, Hydrology, Mineral and Rock Physics, Nonlinear Geophysics, Seismology

Conveners: Behnam Jafarpour, Texas A&M University, behnam@pe.tamu.edu

NS03: Biogeophysics: Towards Modeling of Geophysical Signatures of Microbial Processes in the Earth

Cosponsors: Biogeosciences, Cryosphere, Global Environmental Change, Geomagnetism and Paleomagnetism, Hydrology, Mineral and Rock Physics, Seismology

Conveners: Lee Slater, Rutgers-Newark, lslater@andromeda.rutgers.edu; Estella Atekwana, Oklahoma State University, estella.atekwana@okstate.edu

NS04: Joint Interpretation of Different Geophysical Data for Natural Resources Characterization

Cosponsor: Seismology

Conveners: Tim Seher, Massachusetts Institute of Technology, seher@mit.edu; Michael Commer, Lawrence Berkeley National Laboratory, mcommer@lbl.gov

NS05: Airborne Geophysics for Geohazards and Environmental Problems

Cosponsors: Geodesy, Geomagnetism and Paleomagnetism, Hydrology, Natural Hazards, Seismology, Volcanology, Geochemistry, and Petrology

Conveners: Shigeo Okuma, Geological Survey Japan, AIST, s.okuma@aist.go.jp; Maria Deszcz-Pan, USGS, maryla@usgs.gov

NS06: Inversion I: Back to Basics

Cosponsors: Geomagnetism and Paleomagnetism, Mineral and Rock Physics, Nonlinear Geophysics, Seismology

Conveners: Thomas Lecocq, Royal Observatory of Belgium, Thomas.Lecocq@seismology.be; Rhett Herman, Radford University, rherman@radford.edu

NS07: Beyond the Case History: Novel Seismic Methods and Applications

Cosponsors: Seismology

Conveners: Seth Haines, USGS, shaines@usgs.gov; Juan Lorenzo, Louisiana State University, gllore@lsu.edu; Thomas Blum, Boise State University, thomasblum@u.boisestate.edu; Andy Lamb, Boise State University, andylamb@cgiss.boisestate.edu

1.2. Hydrogeophysics sessions (from Niklas Linde)

Tentative Hydrogeophysics sessions for the 2010 AGU Fall Meeting (<http://www.agu.org/meetings/fm10/>)

H26: Hydrogeophysics: Advances in measurement, monitoring and modeling of hydrological processes

Conveners: Adam Pidlisecky and Baptiste Dafflon

H15: Hydrogeophysical data fusion: methods, scales and information content

Conveners: Andrew Binley, Ty P.A. Ferre, Johan Huisman

H60: Novel High-Resolution Field and Modeling Approaches to Aquifer Connectivity Characterization

Conveners: Chris Graham, Luisa Hopp, Kristopher Kuhlman, Bwalya Malama, Michael Cardiff

H70: Hydrogeophysics for Digital Soil Mapping: Novel Techniques and Applications

Conveners: Sebasti n Lambot, Roelof Versteeg, Jan Van Der Kruk, Johan Huisman, Harry Vereecken

2. SEG 2010, 17-22 October, Denver, Colorado: final announcement (from Jan van der Kruk)

The coming SEG conference in Denver offers a broad spectrum of near surface geophysics presented in 8 sessions. This year, we have three oral sessions: "Methodological developments and case studies" 1 & 2, "Surface waves", two poster sessions "Methodological developments and case studies" 1 & 2, and three special sessions "Geohazards and public safety", "Hydrogeophysics", and "Humanitarian and environmental applications of geophysics at the community scale". In the last session, several project teams of the Geoscientists without Borders are going to present their results. The schedule of all NSGS sessions can be found below.

The annual section's Business Meeting will be held on Monday, October 18, from 4-6 pm (rm 206, Colorado Convention Center). The 2010 annual Near Surface Geophysics Section (NSGS) reception will be held at the Wynkoop Brewing Company, Mercantile Room, 1634 18th St. on Tuesday, October 19. The reception is going to begin with a meeting at 6:30, followed by a dinner/social event at 7:30. During the reception, the Harold Mooney Award is going to be presented to an individual in recognition of long-term, tireless, and enthusiastic support of the near-surface geophysics community.

We are looking forward to seeing you in Denver.

For questions or suggestions please do not hesitate to email Jan van der Kruk (j.van.der.kruk@fz-juelich.de) or Klaus Holliger (klaus.holliger@unil.ch).

Schedule of NSGS Sessions:

NS 1 Methodological Developments and Case Studies 1 (Monday, October 18. Room 205) Session Chairmen: Fred Hilterman and Xianhuai Zhu

SS 4 Geohazards and Public Safety (Tuesday, October 19. Room 203) Session Chairmen: Richard D. Miller and James A. Hunter

NS P1: Poster Session: Methodological Developments and Case Studies 1 (Tuesday, October 19) Session Chairmen: Joe Zhou and Turgut Ozdenvar

SS 6 Humanitarian and Environmental Applications of Geophysics at the Community Level (Tuesday, October 19. Room 203) Session Chairmen: Louise Pellerin and Jan van der Kruk

NS P2: Poster Session: Methodological Developments and Case Studies 2 (Tuesday, October 19) Session Chairmen: Sheng Xu and Adel Ei-Eman

SS 8 Hydrogeophysics (Wednesday, October 20. Room 203) Session Chairmen: Klaus Holliger and André Revil

NS 2 Surface Waves (Wednesday, October 20. Room 111/113) Session Chairmen: Yunqing Shen and Christine Krohn

NS 3 Methodological Developments and Case Studies 2 (Thursday, October 21. Room 401/402) Session Chairmen: Richard Miller and Oz Yilmaz

More details about the schedule can be found at:

<http://abstracts.seg.org/techprog.cfm>

3. Announcement on student activities during the 2010 Fall AGU (from Seth Campbell)

I would like to remind students to check the WIKI for recent updates I've added regarding potential NSFG sponsored functions during the Fall AGU conference.

4. Call for Abstracts: SAGEEP 2011, April 10-14th Charleston, South Carolina

<http://www.eegs.org/sageep/>

Abstract submission deadline November 19th

MR Session at SAGEEP: Nuclear Magnetic Resonance (NMR) has emerged as a promising method for investigating the properties of Earth materials, both in the laboratory and in the field. To highlight current research exploring the application of NMR to near-surface problems we are hosting a special session at SAGEEP 2011, titled "Development and applications of nuclear magnetic

resonance techniques for near-surface investigations". We encourage submission of papers to our session that present novel applications and case studies of NMR, new instrumentation and methodologies for data acquisition, new inversion approaches, and papers that consider the effect of rock properties on the NMR measurement.

For inquiries, feel free to contact the session conveners: Dr Elliot Grunewald (elliottg@stanford.edu[<mailto:elliottg@stanford.edu>](mailto:elliottg@stanford.edu)) or Dr. Kristina Keating (kmkeat@andromeda.rutgers.edu[<mailto:kmkeat@andromeda.rutgers.edu>](mailto:kmkeat@andromeda.rutgers.edu)).

5. NRC Committee on Opportunities in the Earth Sciences seeks input

Input is requested for an important study being conducted by the National Research Council's Committee on New Research Opportunities in the Earth Sciences. The study follows a similar 2001 study and is sponsored by the National Science Foundation, which has charged the committee as follows:

(1) Identify high-priority new and emerging research opportunities in the Earth sciences over the next decade, including surface and deep Earth processes and interdisciplinary research with fields such as ocean and atmospheric sciences, biology, engineering, computer science, and social and behavioral sciences; (2) identify key instrumentation and facilities needed to support these new and emerging research opportunities; (3) describe opportunities for increased cooperation in these new and emerging areas between EAR and other government agency programs, industry, and international programs; (4) suggest new ways that EAR can help train the next generation of Earth scientists, support young investigators, and increase the participation of underrepresented groups in the field.

The committee will not evaluate existing EAR programs or make budgetary recommendations. Further information on this study can be found at www.nationalacademies.org/cp. The NRC staff officer for this study is Dr. Mark Lange.

The committee is requesting comments from the Earth science community at large, including professional societies, government agencies, and university departments. We would, in particular, appreciate your thoughts on the following topics: (1) the 10-year outlook for the Earth sciences, including linkages with other disciplines; (2) the scale of activities suitable for conducting this science, including the roles of individual investigators, major facilities, and "system-level" research; and (3) the facilities and infrastructure needed to support these research activities.

Please submit responses to the letterhead address or via email to mlange@nas.edu by October 8. The committee greatly appreciates your input.

6. Open positions:

6.1. USEPA Geophysicist Job Opening

The National Risk Management Research Laboratory (NRMRL) of the United States Environmental Protection Agency is accepting applications beginning September 1, 2010 through September 30, 2010 for a full-time permanent Geophysicist.

The candidate will have expertise in areas such as: the application of principles, theories, and practices of geophysics (both surface and borehole methodologies) to environmental and ground-water issues; design and operation of geophysical tools (hardware and software) for characterizing and monitoring subsurface environments and ground-water systems; carbon capture and storage with a focus on geological sequestration; and the ability to adapt/modify practices or techniques to solve a variety of problems and accommodate specialized project requirements. The successful candidate will collaborate with a team of hydrologists, geochemists, microbiologists, and engineers to address emerging areas of environmental research and issues to support EPA's mission.

Specific research areas are posted on the NRMRL website at <http://www.epa.gov/ada>. The position includes Full Federal Employment Benefits and a salary range of \$68,809.00 - \$106,369.00 commensurate with qualifications (salary range is subject to increase in January 2011).

Consult the USAJOBS website at <http://www.usajobs.gov> for instructions on how to apply. Vacancy Announcement Number RTP-ORD-DE-2010-0072, RTP-ORD-MP-2010-0116. Note - online applications from journal websites are not accepted. Applicants must be United States citizens. The U.S. EPA is an Equal Opportunity Employer.

6.2. Two Ph.D. Positions at Forschungszentrum Jülich, Germany

With 4400 staff members Forschungszentrum Jülich is the largest interdisciplinary research centre in Germany focusing its research in the fields of health, environment and energy, and information technology. For our Institute of Chemistry and Dynamics of the Geosphere - Agrosphere (ICG-4) and the Central Institute for Electronics (ZEL), we are seeking a:

PhD Student - ref. no. D055/2010 (ZEL) in Electrical Engineering or Physics and a

PhD Student - ref. no. D056/2010 (ICG-4) in Hydrogeophysics for a three-year PhD project.

Tasks: Both students will work on the project "4D Spectral Electrical Impedance Tomography (EIT) - a diagnostic imaging tool for the characterization of subsurface structures and processes" funded within the geotechnologies programme (Sonderprogramm GEOTECHNOLOGIEN) by the Federal Ministry of Education and Research (BMBF). The main task of the PhD student at ZEL will be to develop simulation models and correction procedures for capacitive and inductive coupling effects to further improve EIT measurement accuracy. The task of the PhD student at ICG-4 will be to evaluate and validate the developed data correction and 4D imaging strategies using synthetic model studies and field EIT measurements at a well-studied test site.

Requirements: MSc degree (or equivalent) in geophysics, physics, electrical, civil or environmental engineering with an overall grade of at least "good"; programming skills in MATLAB; working in an interdisciplinary team should be seen as a positive challenge.

For more information, visit these websites: <http://www.fz-juelich.de/icg/icg-iv/index.php?index=3>; <http://www.fz-juelich.de/zell/index.php?index=3> and/or contact: Dr. Sander Huisman, ICG-4 (s.huisman@fz-juelich.de) or Egon Zimmermann, ZEL, (e.zimmermann@fz-juelich.de).

Payment will correspond to salary grade 13/2 of the Collective Agreement for the Civil Service (TVöD). Depending on the candidate's profile and the subject of his/her PhD thesis, an additional allowance may be granted. Equal opportunities is a cornerstone of our staff policy at Forschungszentrum Jülich, for which we have received the "TOTAL E-QUALITY" Award. Applications from women are therefore particularly welcome. We also welcome applications from disabled persons. Please send your application with the relevant documentation (giving the names of referees) quoting the reference number to:

For ref. no. D055/2010 (ZEL):
Zentralinstitut für Elektronik (ZEL)
Ms. Lydia Fuckardt
Forschungszentrum Jülich GmbH
52425 Jülich, Germany
E-Mail: l.fuckardt@fz-juelich.de<<mailto:l.fuckardt@fz-juelich.de>>

For ref. no. D056/2010 (ICG-4):
Institut für Chemie und Dynamik der Geosphäre (ICG)
Mr. K. Beumers
Forschungszentrum Jülich GmbH
52425 Jülich, Germany
E-Mail: k.beumers@fz-juelich.de<<mailto:k.beumers@fz-juelich.de>>

6.3. Three Ph.D. Positions in Stochastic Hydrogeology and Hydrogeophysics

Funded by the Swiss National Science foundation, the Ensemble Project aims at developing integrated methods for ensemble stochastic aquifer modeling with emphasis on alluvial deposits. It includes 5 parallel PhD projects and offers an exceptional international and interdisciplinary environment.

3 positions are currently available on the following topics:

1. Geostatistical modeling of geological heterogeneity in alluvial aquifers. U. of Neuchâtel - www.unine.ch/chyn:<<http://www.unine.ch/chyn>>
Prof. Philippe Renard - philippe.renard@unine.ch<<mailto:philippe.renard@unine.ch>>
2. Joint inversion of hydrogeological and geophysical data in a multiple-point statistics framework. U. of Lausanne - www.unil.ch/ig:<<http://www.unil.ch/ig>> Prof. Niklas Linde - niklas.linde@unil.ch<<mailto:niklas.linde@unil.ch>>
3. The effects of model simplifications on prediction uncertainty in physically complex systems. U. of Lausanne - www.unil.ch/ig:<<http://www.unil.ch/ig>> Prof. Ivan Lunati - ivan.lunati@unil.ch<<mailto:ivan.lunati@unil.ch>>

The positions are funded for 3 years, starting February 1st, 2011. The successful candidates are strongly motivated and hold a MSc degree in geophysics, physics, environmental engineering, statistics, engineering, computational sciences, or applied mathematics. Experience in scientific computing, hydrological or geophysical simulations, or inversion is an asset.

To apply, please send a cover letter clarifying your overall motivation together with your curriculum vitae and the names, telephone numbers, and e-

mail addresses of two referees. The e-mail should be addressed to the contact person of the project that interests you the most. The deadline for submission of applications is November 1, 2010.

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

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