

Dear Judy,  
Following is the December newsletter for distribution to NS.  
Thank you  
George  
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December 2008 Newsletter of the AGU Near-Surface Focus Group

1. 2008 Fall AGU Meeting, 15-19 December, San Francisco, CA
  - 1.1 Near Surface Geophysics Focus Group Lunch at the Fall AGU Meeting
  - 1.2 Joint Near Surface Geophysics Focus Group/Hydrogeophysics Committee Social Event
  - 1.3 NS Sponsored Student Luncheon
  - 1.4 Fall AGU NS Sessions
  - 1.5 Hydrogeophysics and Co-sponsored Fall AGU NS Sessions
2. Society of Exploration Geophysicists News (SEG)
3. European Geosciences Union (EGU), General Assembly 2009, 19-24 April, Vienna, Call for abstracts:
  - 3.1 Imaging the shallow subsurface with seismic and ground-penetrating radar methods
  - 3.2 Heterogeneity and anisotropy in geomaterials: a scaling problem?
4. Positions:
  - 4.1 Assistant Professor, Rutgers, Near Surface Geophysics/Hydrogeology
  - 4.2 Geological Postdoctoral Fellow, Lawrence Berkeley National Laboratory

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>

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1. 2008 Fall AGU Meeting, 15-19 December, San Francisco, CA  
[www.agu.org/meetings/fm08/](http://www.agu.org/meetings/fm08/)

1.1 Near Surface Geophysics Focus Group Lunch at the Fall AGU Meeting:

The 2008 Near Surface Geophysics Lunch is scheduled for Tuesday Dec 16, 12:30-13:30 at the Marriott Hotel (salons 10-12). This is a ticketed event for members that purchased lunch tickets in advance when registering online for the meeting. Tickets will not be available on-site.

1.2 Joint Near Surface Geophysics Focus Group/Hydrogeophysics Committee Social Event at the Fall AGU Meeting:

The NS Focus Group is again holding a joint social event with the Hydrogeophysics Committee at this year's Fall AGU meeting. In keeping with an evolving tradition, the social will be held at The Hotel Utah Saloon (500 4th Street at Bryant - 4 blocks south along 4th Street from the conference center, <http://www.thehotelutahsaloon.com/contact.html#map>). The social is scheduled for Monday Dec 15 at 6:30 pm.

### 1.3 NS Sponsored Student Luncheon:

Our NS Student Representative, Elliot Grunewald, is organizing a student lunch on Wednesday Dec 17 during the Fall AGU meeting. This is the first student event sponsored by NS and is designed to draw together a group of 10-15 students at a local lunch spot in order to actively engage the NS student community. In return for a free (food only) lunch at Buca Di Beppo, Elliot is hoping to get primed with thoughts and ideas on how NS can better serve its student community in the future. If you wish to participate, please contact Elliot ([elliotg@stanford.edu](mailto:elliotg@stanford.edu)) early as space is limited.

### 1.4 Fall 2008 AGU NS Sessions:

(<http://www.agu.org/cgi-bin/sessions5?meeting=fm08&sec=NS>)

NS12A Monday 10:20 to 12:20, MC 3009

Near-Surface Geophysics General Contributions I (joint with H, S)

Presiding: S Kruse, University of South Florida; M Craig, California State University East Bay

NS13A Monday 13:40 to 15:50, MC Hall D

Near-Surface Geophysics General Contributions II, Posters (joint with H, S)

Presiding: C J Weiss, Virginia Polytechnic Institute and State University; M Everett, Texas A&M University, Dept of Geology and Geophysics

NS22A Tuesday 10:20 to 12:20, MC 2003

Geoscientific Data for the Revitalization of Afghanistan (joint with IN, H, PA)  
PRESENTATION AND PANEL DISCUSSION: representatives from USGS and the Ministry of Mines and Geology, Afghanistan

Presiding: T V King, U.S. Geological Survey; R F Kokaly, U.S. Geological Survey; I Verstraeten, U.S. Geological Survey

NS23A Tuesday 13:40 to 15:50, MC Hall D

Stratigraphic Applications of Near-Surface Geophysics, Posters (joint with H, S)

Presiding: M Craig, California State University, East Bay; M O'Neal, Loyola College in Maryland; C Juhlin, Uppsala University

NS31A Wednesday 08:00 to 10:00, MC Hall D Application of Joint Inverse Methods for Improved Characterization and Assessment of Groundwater, Mineral, and Petroleum Resources, Posters (joint with IN, H)

Presiding: M J Friedel, U.S. Geological Survey; B Minsley, U.S. Geological Survey

NS41A Thursday 08:00 to 10:00, MC 3007

Geophysical Characterization of Flow in Dual-Porosity Media: From Fractures to Karst and Glaciers I (joint with C, H, MR)

Presiding: G Tsoflias, The University of Kansas; M Becker, University at Buffalo, State University of New York

NS43A Thursday 13:40 to 15:50, MC Hall D Geophysical Characterization of Flow in Dual-Porosity Media: From Fractures to Karst and Glaciers II, Posters (joint with C, H, MR)

Presiding: G Tsoflias, The University of Kansas; M Becker, University at Buffalo, State University of New York

NS43B Thursday 13:40 to 15:50, MC Hall D Near-Surface Geophysics General Contributions III, Posters (joint with H, S)

Presiding: R B Herman, Radford University; E Atekwana, Oklahoma State University

NS51A Friday 08:00 to 10:00, MC 2018

Monitoring Techniques and Interpretation Methods for Coupled Thermo- Hydro-Mechanical Processes in the Earth Crust I (joint with IN, H, MR, S, T, V)

Presiding: Y Guglielmi, University of Provence Aix-Marseille 1; T Vanorio, Stanford Rock Physics and Borehole Laboratory; J Rutqvist, Lawrence Berkeley National Laboratory

NS53A Friday 13:40 to 15:50, MC Hall D

Monitoring Techniques and Interpretation Methods for Coupled Thermo- Hydro-Mechanical Processes in the Earth Crust II, Posters (joint with IN, H, MR, S, T, V)

Presiding: Y Guglielmi, University of Provence Aix-Marseille 1; T Vanorio, Stanford Rock Physics and Borehole Laboratory; J Rutqvist, Lawrence Berkeley National Laboratory

#### 1.5 Hydrogeophysics and Co-sponsored Fall AGU NS Sessions:

PA11A Monday 08:00, MC 3014

Increasing the Societal Impact of Geophysics I

Presiding: R Snieder, Colorado School of Mines; L Pellerin, Green Engineering, Inc

PA13B Monday 13:40, MC Hall D

Increasing the Societal Impact of Geophysics II, Posters

Presiding: R Snieder, Colorado School of Mines; L Pellerin, Green Engineering, Inc

H33G Wednesday 13:40, MC Hall D

Integration of Hydrological, Geophysical, and Geochemical Monitoring, Modeling, and Inversion to Support Remediation and Environmental Decision Making I Posters

Presiding: R G Ford, Office of Research and Development/ U.S. Environmental Protection Agency; D Miller, Fluor Hanford

H41L Thursday 08:00, MC3008

Integration of Hydrological, Geophysical, and Geochemical Monitoring, Modeling, and Inversion to Support Remediation and Environmental Decision Making II

Presiding: R G Ford, Office of Research and Development/ U.S. Environmental Protection Agency; D Miller, Fluor Hanford; M M Smith, Colorado School of Mines

H42D Thursday 10:20, MC 2002

Hydrogeophysics: Methods, Models, and Applications I (joint with NS)  
Presiding: R Beckie, University of British Columbia; S Huisman, Forschungszentrum Jlich

H43J Thursday 13:40, MC2002

Hydrogeophysics: Methods, Models, and Applications II (joint with NS)  
Presiding: S Lambot, Universite catholique de Louvain; D Rucker, HydroGeophysics, Inc.

H43K Thursday 13:40, MC 2003

Recent Innovations in Environmental Sensing, Cyberinfrastructure, and Observatories I  
Presiding: J Dozier, University of California Santa Barbara; M Kumar, Penn State University; H Vereecken, Forschungszentrum Jlich

H44C Thursday 16:00, MC 2002

Hydrogeophysics: Methods, Models, and Applications III (joint with NS)  
Presiding: P Ferre, University of Arizona; R Beckie, University of British Columbia; D Rucker, HydroGeophysics, Inc.; S Huisman, Forschungszentrum Jlich

H44D Thursday 16:00, MC 2003

Recent Innovations in Environmental Sensing, Cyberinfrastructure, and Observatories II  
Presiding: M Kumar, Penn State University; T Harter, University of California Davis; R W Fedors, U.S. Nuclear Regulatory Commission; J S Selker, Oregon State University

H51G Friday 08:00 MC Hall D

Hydrogeophysics: Methods, Models, and Applications IV, Posters (joint with NS)  
Presiding: T P Ferre, University of Arizona; R Beckie, University of British Columbia; D Rucker, HydroGeophysics, Inc.; S Huisman, Forschungszentrum Jlich

H51H Friday 8:00, MC Hall D

Recent Innovations in Environmental Sensing, Cyberinfrastructure, and Observatories III, Posters  
Presiding: M Kumar, Penn State University; C Manepally, CNWRA, Geosciences and Engineering Division, Southwest Research Institute; T Harter, University of California Davis; R W Fedors, U.S. Nuclear Regulatory Commission

H51M Friday 08:00, MC3008

Integration of Hydrological, Geophysical, and Geochemical Monitoring, Modeling, and Inversion to Support Remediation and Environmental Decision Making III  
Presiding: J H Bradford, Boise State University; L Bentley, University of Calgary

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2. Society of Exploration Geophysicists News (SEG): From Robert Jacob

The SEG Annual Meeting and Technical Program in Las Vegas this past month brought together a wide range of researchers who have interest in Near Surface Geophysics (NSG). The SEG Forum "Managing our Groundwater Resources for the Future", sponsored by the NSG Section was well attended and provided interesting dialogue

about the various aspects of using geophysical methods to address groundwater resources and the economic drivers built into the current system in addition to potential changes and growth opportunities. All of the NSG technical sessions were well attended and we enjoyed excellent presentations on a wide spectrum of near surface geophysics. The post-convention workshop "Induced Polarization: Research and Recent Advances in Near Surface Applications" provided a great look at past, present and future of an important tool for geophysicists, and generated good discussions. Thank you for attending and we look forward to seeing you at future SEG meetings.

The results of the NSGS Elections concluded with Jan van der Kruk elected as President-Elect and Darcy McPhee elected as Vice-President. The NSGS business meeting provided an opportunity to hear from some of our members, if you have any comments / suggestions or questions about the NSG Section of the SEG please email [rob.jacob@bucknell.edu](mailto:rob.jacob@bucknell.edu).

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

Abstract submission deadline January 13, 2009;  
<http://meetings.copernicus.org/egu2009/>

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

Dear friends and colleagues,  
We would like to draw your attention to session SM5.4 at next year's EGU conference. We hope that you plan to attend EGU and we look forward to seeing you in our session!

Klaus Holliger, University of Lausanne  
Hansruedi Maurer, ETH Zurich  
Lars Nielsen, University of Copenhagen

Session Description:

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 modeling 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 and presentations, which demonstrate the applicability of these methods, to contribute to this session.

3.2 MPRG4: Heterogeneity and anisotropy in geomaterials: a scaling problem?

Convener: A.J. Maineult ([maineult@ipgp.jussieu.fr](mailto:maineult@ipgp.jussieu.fr))  
Co-Conveners: L. Louis , R. Toussaint

Session Description:

This session is intended to gather contributions dealing with the links between heterogeneity and anisotropy in geomaterials at different scales. For a given physical property, depending on the scale of investigation, geomaterials may appear strongly heterogeneous and difficult to describe by simple mathematical functions, or homogeneous if the scale of investigation is large enough to average the effects of all local effects. Anisotropy and heterogeneity as scale dependent characteristics are ubiquitous in rock physics problems. Depending on the focus of a study, observation scale may be chosen in order to optimize either one or the other, knowing that (1) as scale changes, several heterogeneous (resp. homogeneous) states may be reached, and that (2) to a given working scale will correspond a given measurement method. In this context, what can be called "adequate" working scale and what are the limitations of models using homogenization techniques? For example, when only few data are acquired along different directions, what may be used to decide if the observed anisotropy is representative of the medium investigated or if it results from the presence of some heterogeneity? When the scale of investigation makes the measured property sensitive to both heterogeneity and anisotropy, is it possible to extract the background anisotropy while minimizing disturbances due to heterogeneities? Finally, we can wonder if it is always worth to worry about these characteristics. For instance, to what extent may heterogeneities control the deformation mechanism, and therefore the scale at which events shall be apprehended? In some cases, the effect of small scale heterogeneities only influences the small scale behaviour, but these effects vanish out when the system is zoomed out, and the large scale rheology is only controlled by large scale features. In other nontrivial situations, collective effects arise at large scale from the small scale heterogeneities, which are then essential to model the mechanics of the problem. Examples of such nontrivial behaviours can be found for example, in friction or fracture problems, in strain localization in ductile or fragile systems, or in front dynamics for multiphase or reactive flows in disordered porous media. Likewise, what is the real effect of anisotropy on the orientation of strain localization features as compared to the one of anisotropic stress state? In other words, how far do we typically stand from a conceptual isotropic homogeneous material? As many domains are concerned by this issue, such as rock mechanics, poroelasticity, hydraulic and electric transport properties, or magnetism, we encourage contributions with well defined objects and goals. Pedagogic efforts will also be very welcome in order to maximize the impact of each presentation.

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#### 4. Positions:

##### 4.1 Assistant Professor, Rutgers: Near Surface Geophysics/Hydrogeology

Rutgers University-Newark seeks to fill a full-time, tenure-track position at the rank of Assistant Professor for Fall 2009 in the area of near surface geophysics and/or hydrogeology. We seek candidates with expertise in applying innovative geophysical techniques, or collaborating with geophysicists, to solve groundwater and related problems. Excellent opportunities for collaboration with current faculty in near surface geophysics, soil geochemistry, biogeochemistry and/or ocean-atmosphere interactions. Excellent facilities and research opportunities in

the area. Establishing a vigorous, externally funded research program and advisement of MS/PhD students is essential. Effective teaching is required with a teaching load of 3 courses per year. A Ph.D. and post doctoral research are required. Send a letter of application, a CV and arrange for 3 letters of reference to Dr. Alexander Gates, Dept. of Earth and Environmental Sciences, Rutgers University, 101 Warren Street, Newark, NJ 07102 ([agates@andromeda.rutgers.edu](mailto:agates@andromeda.rutgers.edu)). For further details of the department, its faculty and programs see <http://geology.newark.rutgers.edu/>. Application deadline is December 15, 2008. Rutgers University is an equal opportunity/affirmative action employer.

#### 4.2 Geological Postdoctoral Fellow, Lawrence Berkeley National Laboratory

The Earth Science Division of Lawrence Berkeley National Laboratory is seeking applications for a Postdoctoral Fellow to develop methods to integrate hydrogeological, geophysical and geochemical datasets and to use the methods for exploring processes associated with environmental remediation and water resources at the watershed scale. This position requires a Ph.D. in hydrogeology, geology, geophysics, or engineering with a strong background in the use and application of statistics, inverse theory, and numerical methods for subsurface characterization. A demonstrated ability to work successfully within multi-disciplinary research teams is required, and familiarization with geological facies and geophysical methods is desired. To apply online at <http://cjo.lbl.gov/LBNLCareers/details.asp?jid=20995&p=1> , and follow the online instructions to complete the application process. For more information about the Earth Sciences Division, please contact Susan Hubbard ([sshubbard@lbl.gov](mailto:sshubbard@lbl.gov)). LBNL is an Equal Opportunity/Affirmative Action Employer.

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

George Tsoflias      [tsoflias@ku.edu](mailto: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.