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1. 2007 Fall AGU Meeting, San Francisco 10-14 December, <http://www.agu.org/meetings/fm07/>, Abstract submission deadline: September 6.

NS and NS Co-sponsored Sessions

NS01 NEAR SURFACE GEOPHYSICS GENERAL CONTRIBUTIONS

Conveners: Sarah Kruse, University of South Florida, Department of Geology, SCA-528, 4202 E. Fowler Avenue, Tampa, FL 33620 USA, Tel: 1 813 974 7341, Fax: 1 813 974 2654, email: skruse@cas.usf.edu <<mailto:skruse@cas.usf.edu>>; and Chester J. Weiss, Department of Geosciences, Virginia Polytechnic Institute and State University, 4044 Derring Hall (0420), Blacksburg, VA 24061 USA, Tel: 1 540 231 6521, Fax: 1 505 844 7354, email: cjweiss@vt.edu <<mailto:cjweiss@vt.edu>>

ABSTRACT: This session provides the opportunity for contributions that fall within the broad spectrum of Near Surface Geophysics, but are not directly appropriate to any of the other Special Sessions proposed for the Near Surface Geophysics Focus Group.

NS02 EXPLORATION OF THE CRYOSPHERE USING NEAR-SURFACE GEOPHYSICAL TECHNIQUES: SYNERGISM IN THE INTERNATIONAL POLAR YEAR (co-sponsored with C, GP and S).

Conveners: Anthony L. Endres, University of Waterloo, Department of Earth Sciences Ontario, Waterloo, N2L 3G1 CAN, Tel: (519) 888-4567 ext 33552, Fax: (519) 746-7484, email: alendres@sciborg.uwaterloo.ca <<mailto:alendres@sciborg.uwaterloo.ca>> ; and Tavi Murray, Swansea University, School of the Environment and Society Singleton Park, Swansea, SA2 8PP GBR, Tel: +44 1792 602269, Fax: +44 1792 295955, email: t.murray@swansea.ac.uk <<mailto:t.murray@swansea.ac.uk>>

ABSTRACT: Many exciting advances have been made in the application of geophysical methods to the investigation of physical, chemical, hydrological, and geological processes in the

shallow subsurface. For the most part, this progress has been made by parallel research efforts in diverse fields such as hydrogeophysics and glaciology. This session focuses on the latest scientific developments in the characterization of the cryosphere using near-surface geophysical techniques such as electromagnetic induction, radar and seismics. In the spirit of the International Polar Year, papers from non-related near-surface applications that have significant potential for cryosphere investigations will be vigorously sought in an effort to encourage further collaboration within the near-surface geophysical community. The conveners welcome theoretical or experimental studies including field or laboratory experiments, field monitoring, theoretical or numerical modeling studies.

NS03 INDUCED POLARIZATION (IP), SELF-POTENTIAL (SP), AND SEISMIC-ELECTRIC COUPLING FOR NEAR SURFACE APPLICATIONS (co-sponsored with B and S)

Conveners: Dimitrios Ntarlagiannis, Queens University Belfast, GBR, email: d.ntarlagiannis@qub.ac.uk <<mailto:d.ntarlagiannis@qub.ac.uk>>; Burke Minsley, Massachusetts Institute of Technology, USA, email: minsley@mit.edu <<mailto:minsley@mit.edu>>; and Bernd Kulesa, Swansea University, GBR, email: b.kulesa@swansea.ac.uk

ABSTRACT: Geoelectrical methods have been commonly utilized for subsurface imaging and monitoring of near-surface properties and processes. More recently, novel applications of these techniques have been utilized to characterize in-situ geochemical, microbiological, and hydrogeologic information. This session invites submissions that focus on new developments within the geoelectrical methods of self potential (SP), induced polarization (IP), and seismic-electric coupling as advanced tools for subsurface monitoring and characterization. For example, the sensitivity of the IP method to mineral interfacial parameters allows for geoelectrical monitoring of microbial induced mineralization and biodegradation processes. The SP method has seen a revival for environmental applications such as assessment and monitoring of the properties and processes controlling natural or induced subsurface fluid flow, and redox processes associated with abiotic and biotic transformations. The application of seismic-electric coupling is in its infancy but shows considerable promise in estimating the anelastic properties of porous media and in monitoring seismic events in the subsurface using either electrical fields generated by seismic wave propagation (the seismoelectric method), or seismic responses induced by the generation of electrical currents in the subsurface. Abstracts relevant to application, processing and interpretation of these techniques in complex subsurface monitoring situations are particularly encouraged.

NS04 DEVELOPMENT AND APPLICATIONS OF AIRBORNE METHODS (co-sponsored with GP, T, V and HH)

Conveners: : Carol Finn, US Geological Survey, P.O. Box 25046, MS 964 Bldg. 20 Denver Federal Center, Denver, CO 80225 USA, Tel: 303-236-1345,

email: cfinn@usgs.gov <<mailto:cfinn@usgs.gov>>; Shigeo Okuma, Geological Survey of Japan, AIST, Tsukuba Central 7, Higashi 1-1-1, Tsukuba, Ibaraki, 305-8567 JPN, Tel: +81-29-861-3847, email: s.okuma@aist.go.jp <<mailto:s.okuma@aist.go.jp>>; and Louise Pellerin, Green Engineering, Inc, 2215 Curtis St, Berkeley, CA 94702 USA, Tel: 510 704 1566, email: pellerin@ak.net <<mailto:pellerin@ak.net>>.

ABSTRACT: Airborne methods have been rapidly developed in various fields such as gravity, magnetics, electromagnetics (EM), radiometrics, spectral and thermal imaging. They can be implemented from a traditional manned and newly-developed unmanned helicopter or fixed-wing aircraft to efficiently map very large or remote areas with difficult access. Data can be related to basic geological structure, such a depth to basement, stratigraphy, faults, fractures, paleochannels, and hydrogeological features such as depth to groundwater and aquifer characterization.

Applications are widespread including seismic, volcano and landslide hazards, geothermal energy resources and mineral exploration, and hydrology and environmental investigations. We invite case histories and studies that are advancing the developments of applications, instrumentation, processing, modeling or inversion of airborne methods.

NS05 FAULT IMAGING AND SEISMIC HAZARD ASSESSMENT (co-sponsored with S)

Conveners: Mitchell Craig, California State University, East Bay, Department of Earth and Environmental Sciences 25800 Carlos Bee Blvd. , Hayward, CA 94542 USA, Tel: 510-885-3425, email: mitchell.craig@csueastbay.edu <<mailto:mitchell.craig@csueastbay.edu>>; and Sarah Kruse, University of South Florida, Department of Geology/SCA 528 4202 East Fowler Ave , Tampa, FL 33620-5200 USA, Tel: 813-974-7341, email: skruse@cas.usf.edu <<mailto:skruse@cas.usf.edu>>.

ABSTRACT: This session will focus on the use of geophysical methods for the study of active faults and earthquake hazard zones. Such studies may include the mapping of faults, imaging of paleochannels that are displaced by faults, and the imaging of near-surface stratigraphy that is disrupted by seismic activity. Submissions involving seismic reflection, refraction tomography, surface wave methods, ground-penetrating radar, and other geophysical methods are welcome. Integrative approaches that utilize engineering, geotechnical, and age-dating data to ground-truth geophysical data are especially encouraged.

NS06 NEAR-SURFACE GEOPHYSICS AND NATURAL HAZARDS (co-sponsored with PA and S)

Conveners: Mark E Everett, Texas A&M University, Dept of Geology and Geophysics, College Station, TX 77845 USA, Tel: 979/862-2129, email: everett@geo.tamu.edu; and John Louie, University of Nevada - Reno, , Reno, NV USA, email: louie@seismo.unr.edu.

ABSTRACT: This session is intended to be cross-disciplinary and welcomes contributions which show how applications of advanced near-surface geophysical techniques can add tremendous value to risk analysis and assessment of natural hazards that could include but are not limited to landslides, volcanoes, earthquakes, tsunami, floods, and extraterrestrial impacts. Case studies are encouraged which clearly demonstrate the decisive role played by geophysical measurements and their associated interpretation within an integrated approach to geohazard definition. Studies of natural hazards that could potentially affect urban centers, critical facilities, or other areas impacted by human activity or settlement are of special concern in this session.

NS07 BIOGEOPHYSICS (co-sponsored with B)

Conveners: Kristina Keating, Stanford University, Geophysics Department, Mitchell Building , Stanford, CA 94305 USA, Tel: 650-724-9939, email: kkeat@pangea.stanford.edu; and Lee Slater, Rutgers University, USA, email: lslater@andromeda.rutgers.edu.

ABSTRACT: Biogeophysics is a fast evolving area of near surface geophysics that addresses the geophysical detection, monitoring and imaging of biological activity in the subsurface. This session invites contributions on novel applications of geophysics in geo-microbiological studies as well as work on biogeochemical processes that facilitates understanding of the geophysical properties of earth materials. We invite abstracts that focus on laboratory and/or field scale studies of

(1) geophysical properties of bacteria and/or their interaction with geologic media and contaminants, and (2) the direct and/or indirect geophysical signatures associated with microbial processes in the earth.

Abstracts focusing on evolving geophysical technologies, such as nuclear magnetic resonance (NMR), induced polarization and complex resistivity, are particularly welcomed. Studies with implications for monitoring of near-surface environmental processes (e.g. contaminant remediation) are of interest. Travel awards for this Biogeophysics session are available to student first authors of accepted abstracts.

NS08 IMPROVED ESTIMATION AND PREDICTION IN EARTH SCIENCE THROUGH INTEGRATION OF MULTIPLE DATASETS AND MODEL TYPES (co-sponsored with HH and S)

Conveners: Paul A. Bedrosian, US Geological Survey, CICT, Denver, Co 80225, Tel: 303-236-4834, email: pbedrosian@usgs.gov; Michael J. Friedel, U.S. Geological Survey, Denver, CO 80225, Tel: 303-236-7790, email: mfriedel@usgs.gov; and Seth S. Haines, US Geological Survey, CICT, Denver, Co 80225, Tel: 303-236-5709, email: shaines@usgs.gov.

ABSTRACT: This session seeks contributions that demonstrate novel insights, potential advances and recent accomplishments in the integration of disparate geophysical datasets for improved imaging and parameter estimation in Earth's shallow subsurface. Studies are

encouraged which embrace the relative accessibility granted by the near-surface to geophysical interrogation, and exploit this temporal and spatial richness to further our understanding of joint geophysical interpretation from both a theoretical and applications standpoint. Particularly welcome is research associated with identifying and testing alternate regularization strategies, uncertainty estimation in recovered images, and/or the application and evaluation of relationships and linkages between the various data types at various scales.

Near Surface Geophysics also presents jointly with the following Special Sessions:

HH01 Cold Regions Hydrogeophysics

HH02 Hydrogeophysics: Linking geophysical and hydrological data

HH03 Watershed Characterization and Modeling

H11 Detection and Analysis of Coherent Flow Structures in Geophysical Flows

H23 Advancing Hydrologic Predictability in a Changing Environment through Interdisciplinary Synthesis

B05 Biogeochemistry in Polar Environments

B06 Mercury Biogeochemistry in Wetlands

B16 Geomicrobiology and Environmental Biogeochemistry of Iron and Manganese

B27 Frontiers in Biomineralization Research: Processes, Geochemical Signatures and Responses to Global Change

GC10 Understanding the Earth with Unmanned Aircraft Systems

GC26 Environmental Monitoring – Luxury or Necessity?

GP04 New Studies in Electromagnetic Induction

GP11 Geomagnetic field studies at all scales using satellite, observatory, marine, and aeromagnetic data

MR09 Diffusion, defects and transport properties in geomaterials

NG08 Active Monitoring in Solid Earth Geophysics

S14 Advances in Signal Processing Methods for Seismology

S19 Multiple Wave Scattering Across Length Scales in the Earth

V07 Magma Fracture in Lava Domes and Conduits

2. Nominations of AGU Fellows

The NS Focus Group now has enough members that we can nominate AGU Fellows. Do you know someone in the NS Community deserving of nomination as an AGU Fellow? "To be elected a Fellow of AGU is a special tribute for those who have made exceptional scientific contributions". The deadline for nominations is August 15 and full details of the procedure are at <http://www.agu.org/inside/fellguides.html>

3. Call for Papers: UXO special issue at JEEG

The Journal of Environmental and Engineering Geophysics (JEEG) announces a Call for Papers for a special issue on unexploded ordnance (UXO). The UXO issue is scheduled for publication in September 2008. The special issue editor is Mr. José Llopis, U.S. Army Engineer Research and Development Center. The SERDP/ESTCP office has graciously agreed to sponsor the issue.

The UXO issue seeks papers that address topics such as environmental influences, sensor technology, data processing, modeling, inversion algorithms, special challenges associated with active range UXO clearance, and discrimination and classification techniques.

Papers can be submitted through the JEEG submission site, <http://jeeg.allentrack.net>. Indicate in the cover letter that the paper is for consideration in the UXO special issue. The deadline for submissions is October 15, 2007.

Questions may be directed to:

Special Issue Editor-José Llopis, Jose.L.Llopis@erdc.usace.army.mil

JEEG Editor-Janet Simms, Janet.E.Simms@erdc.usace.army.mil

4. First Announcement of ICEEG 2008

Dear Colleagues:

I am pleased to invite you to attend the 3rd International Conference on Environmental and Engineering Geophysics (ICEEG), Wuhan, China, June 15 – 18, 2008. The conference will cover the entire spectrum of near-surface geophysical methods and applications. The ICEEG is the only international conference on near-surface geophysics in China. This is a great platform for you to share your most current research results and friendship. You will also have an opportunity to participate to a post-session trip to Xi'an, Shanxi Province to visit the China's first Emperor Qin Shihuang's Mausoleum and the Terra-cotta Warriors and Horses Museum.

For more information visit the web at <http://www.iceeg.cn/english/index.htm>

Jianghai Xia
Co-Chair/ICEEG2008
jxia@kgs.ku.edu

5. Two-year Postdoctoral Position in Electrical Methods, INRA Climate, Soil and Environment Unit, Avignon, France

DEVELOPMENT AND TEST OF ELECTRICAL GEOPHYSICAL METHODS FOR THE ESTIMATION OF WATER RELATIONS AND WATER TRANSFER IN SOILS AND PLANTS

This project will contribute to the development and test of alternative measurement techniques for the estimation of soil and plant water relations and parameters. The investigated techniques are derived from geophysics and present the advantages of being little or non-invasive, relatively easy to set up, with imaging capabilities (tomography) and applicable to the soil as well to the plants. The targeted methods are linked to the conduction of electrical current: self-potential measurement (which may give indications of direction and magnitude of water flow) and electrical resistivity (which can be used for estimation of soil water content, soil hydraulic parameters and soil heterogeneity, but also as an indicator for root biomass or for the plant water status).

The position is to be filled between October and December 2007, for 2 years. For more information about the project, applicant desired skills and qualifications, and how to apply contact:

Contact Claude Doussan by Email (doussan@avignon.inra.fr - phone: +33 (0)4 32 72 22 38), researcher in charge of the project, if possible before July 20, 2007, with a copy to André Chanzy (achanzy@avignon.inra.fr), head of the CSE Unit. Attach to the Email a CV (resume), a summary of research experience, a list of publication, your motivations for this postdoc project and the name/Email address/phone of 1 or 2 referees. A full, official application file must be filled in and completed before July 30, 2007 (final deadline). It can be either downloaded on the INRA web site : <http://www.inra.fr> (select on the bottom of the page: "Inra international site", for English version, then the thumbnail: « Join us », then the link: « INRA is recruiting 41 postdoctoral fellows» and then follow the proposed links) or emailed to you directly by C. Doussan.

AGU NS-Focus Group Web Page: http://www.agu.org/focus_group/nsg/index.html

To contribute material to the NS-letter e-mail before the first of the month to:

George Tsoflias tsoflias@ku.edu

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) to ensure compatibility with e-mail recipients outside the US. For the same reason, e-mail attachments are not being forwarded.

