

# ABOUT AGU

## Preview of AGU Digital Library

AGU members who subscribe to *Geophysical Research Letters* or the *Member Journal Library* now have access to scanned issues of GRL going back to Vol. 1, 1974. This begins the first phase of the AGU Digital Library project to digitize all journals to their earliest volume. The current preview does not include linked references or PDF purchase, which will be available when the library is complete.

The AGU Digital Library will include over 60,000 AGU journal articles going back to 1896 followed by over 600 books and 100,000 pages of *Eos* and its predecessor *Transactions*. For more information visit [www.agu.org/pubs/e\\_publishing/digitize\\_2007.html](http://www.agu.org/pubs/e_publishing/digitize_2007.html)

Council authorized using funds that had been set aside for the transition to electronic

publishing for this project. Some of these funds came from member contributions.

The Publications Committee and AGU staff are working on a subscription model to offer the AGU Digital Library to institutions. Members of the AGU Library Advisory Group will play a major role in our communications to the library community. A plan will be ready for institutions for the 2008 subscription year.

If you are not currently a subscriber to the *Member Journal Library*, (a library of back issues of AGU journals) you can participate in the preview of the AGU Digital Library by subscribing. Member subscribers are encouraged to examine the older GRL articles and send comments via the feedback link on the back issues page.

## Outstanding Student Paper Awards

The following members received Outstanding Student Paper Awards at the 2006 Fall Meeting in San Francisco, Calif. Winners in other sections and focus groups will be announced in subsequent issues of *Eos*.

### Seismology Section

**Ting Chen**, California Institute of Technology, Pasadena, *Scaling of seismic moment with recurrence interval for small repeating earthquakes simulated on rate-and-state faults.*

**Susana Custodio**, University of California, Santa Barbara, *b-Values as a proxy for stress: Inferences for dynamic modeling of the 2004 Parkfield earthquake.*

**Guillaume Daniel**, Laboratoire de Géophysique Interne et Tectonophysique, CNRS, Université Joseph Fourier, Grenoble, France, *How does seismicity react to earthquake faulting? Case study from the June 21, 2000 earthquake in southern Iceland.*

**Susanne Lehdorfer**, Ludwig Maximilians University, Munich, Germany, *Observations of rotational motions around vertical and horizontal axes: Comparison with translations.*

**Will Levandowski**, Princeton University, New Jersey, *Receiver functions from medium aperture broadband beams and the Moho of the Sierra Nevada, California.*

## A G U J O U R N A L H I G H L I G H T S

**Quantifying ocean acidification due to increased fossil fuel burning** The ocean plays a major role in the uptake of anthropogenic carbon dioxide (CO<sub>2</sub>) emitted from fossil fuel burning, helping to moderate future climate change. However, the addition of CO<sub>2</sub> into the ocean changes ocean chemistry by increasing acidity (decreasing pH), posing a threat to shelled marine organisms and the predators that feed off them. *Cao et al.* sought to quantify the effect of climate change on ocean acidity and the saturation state of the calcium carbonate minerals that form shells and skeletons. Using an Earth system model, they found that ocean pH will decrease by a total of 0.31 units by the end of this century if CO<sub>2</sub> emissions continue on a trajectory to ultimately stabilize at atmospheric CO<sub>2</sub> concentrations of 1000 parts per million. This increase in acidity occurred regardless of the degree of temperature change associated with global warming while CO<sub>2</sub> emissions are stabilized along this pathway, indicating that future changes in ocean acidification caused by atmospheric CO<sub>2</sub> emissions are largely independent of the amounts of climate change. (*Geophysical Research Letters*, doi:10.1029/2006GL028605, 2007)

**Turbulent mixing of the ocean near Japan** In numerical simulations of global ocean circulation,

the density-driven convection that pushes surface waters downward and brings deep waters to the surface depends on the ability of a water parcel to mix vertically with surrounding waters. The energy available for such mixing is originally supplied by ocean tidal currents interacting with undersea topography to form waves called internal tides. Previous modeling research has mapped potential locations on Earth where internal tides should be strong. *Nagasawa et al.* picked locations on these maps—the Aleutian Ridge (off Alaska), the Hawaiian Ridge (in the center of the Pacific Ocean) and the Izu-Ogasawara Ridge (off Japan)—and conducted field studies on whether they actually host areas with strong internal tides and associated strong vertical mixing. Through analysis of vertical profiles of microscale velocity distribution, the authors showed that, in contrast to the Aleutian and Hawaiian ridges which only hosted light to moderate mixing, intense turbulent mixing was detected throughout the observed water depth along the Izu-Ogasawara Trough, a feature running parallel to the Izu-Ogasawara Ridge. (*Geophysical Research Letters*, doi:10.1029/2006GL028695, 2007)

—MOHI KUMAR, Staff Writer

# MEETINGS

## Biogeochemical and Ecological Research in the Indian Ocean

### Sustained Indian Ocean Biogeochemical and Ecological Research Workshop, Goa, India, 3–6 October 2006

The Indian Ocean has many unique characteristics that give rise to a variety of physical, biogeochemical, and ecological responses that are not observed in other ocean basins. For instance, atmospheric circulation over the ocean is seasonally influenced by the presence of the Asian landmass. The monsoonal forcing results in seasonally reversing surface oceanic circulations throughout the northern Indian Ocean, which are particularly energetic in the Arabian Sea. Unlike the Pacific and Atlantic oceans, there is no strong equatorial upwelling or biological response in the east. Furthermore, the Indian Ocean contains one of the most intense oxygen minimum zones (OMZs) in the world oceans, but unlike the Atlantic and Pacific, its OMZ is located in the north rather than along the eastern boundary.

These phenomena all have ecological and biogeochemical consequences that are not fully understood. The overarching goals of the Sustained Indian Ocean Biogeochemical and Ecological Research (SIBER) workshop were to review the state of our knowledge of basin-wide biogeochemical and ecological dynamics of the Indian Ocean, define the major scientific questions that need to be addressed, and formulate a plan for future international research.

For example, the SIBER participants discussed the need to carry out first-order basin-wide descriptive science in order to better characterize and understand the many special aspects of Indian Ocean circulation and the ecological and biogeochemical responses to physical forcing.

Differences between the Arabian Sea and the Bay of Bengal were also discussed; although their biogenic export fluxes are similar, primary production in the Bay of Bengal is much lower than in the Arabian Sea. In addition, while minimum oxygen concentration in the Bay of Bengal is only slightly higher than in the Arabian Sea, the Bay of Bengal remains poised just above the deni-

trification threshold. Further, little information is available on benthic biogeochemical and ecological processes in the northeastern Indian Ocean (Bay of Bengal and Andaman Sea) where there are broad shelves with high rates of organic matter loading from riverine sources. Finally, we still have an extremely poor characterization of open-ocean nitrogen-fixation rates. Thus, while it was generally agreed that the Indian Ocean plays an important role in global nitrogen cycling, conference participants concluded that not enough information exists to adequately quantify the fluxes involved.

Understanding how the Indian Ocean will respond to anthropogenic or natural climate change, and the basin's role in global carbon cycling, are also paramount, conference members agreed. The Indian Ocean is warming faster than any other ocean basin and may therefore provide a preview of how global warming will affect global ocean ecology and biogeochemistry.

Furthermore, while it has been estimated that the Indian Ocean as a whole accounts for about one fifth of the global oceanic uptake of atmospheric carbon dioxide, large uncertainties remain, and these are closely linked to the monsoon's impact on the northern Indian Ocean.

The Indian Ocean is one of the last great frontiers for ocean biogeochemical and ecological research, and the SIBER workshop provided crucial information that will allow us to summarize the state of our understanding and define the major questions that need to be addressed.

—RALEIGH R. HOOD, University of Maryland Center for Environmental Science, Cambridge; E-mail: rhood@hpl.umces.edu; S. WAJIB A. NAQVI, National Institute of Oceanography, Goa, India; JERRY D. WIGGERT, Center for Coastal Physical Oceanography, Old Dominion University, Norfolk, Va.; AND AJIT SUBRAMANIAM, Lamont-Doherty Earth Observatory, Columbia University, Palisades, N. Y.

## M E E T I N G S A N N O U N C E M E N T S

■ 19–24 May 2007 **Japan Geoscience Union Meeting 2007**, Chiba City, Japan. Sponsors: Japan Geoscience Union; Japan Society of High Pressure Science and Technology; Japanese Coral Reef Society; others. (Secretariat, Japan Geoscience Union, Gakkai Center Bld, 4F, Yayoi 2-4-16, Bunkyo-ku, Tokyo, Japan 113-0032; Tel.: +03-6914-2080; Fax: +03-6914-2088; E-mail: office@jggu.org; Web Site: [http://www.jggu.org/meeting\\_e/index.html](http://www.jggu.org/meeting_e/index.html))

The objective of the meeting is to help geosciences researchers and students share their research and exchange information. Several international sessions will be held in English.

■ 30 July–04 August 2007 **Asia Oceania Geosciences Society (AOGS) 4th Annual Meeting**. Sponsor: AOGS. (Secretariat, Meeting Matters International, No. 73 Tras Street, #04-01, Bangkok, Thailand 10110; Tel.: +65-6221-2310; Fax: +65-6221-2760; E-mail: info@asiaoceania.org; Web Site: <http://www.asiaoceania.org/aogs2007/index.html>)

The conference will bring together representatives from government agencies, industry, and academia to discuss geoscience activities in Asia and Oceania. Research in and about Thailand will be highlighted.

# CLASSIFIED

## POSITIONS AVAILABLE

### Atmospheric Sciences

**Faculty Position Department of Atmospheric & Oceanic Science (AOSC) University of Maryland, College Park.** The Department of Atmospheric & Oceanic Science (AOSC) (formerly Meteorology), along with the Institute for Physical Science and Technology (IPST) and the Center for Scientific Computation and Mathematical Modeling (CSCAMM) at the University of Maryland, invite applications for a tenure-track faculty position in data assimilation. The successful candidate is expected to lead the continuing progress in development of advanced computational algorithms in atmospheric, ocean, land surface and biogeochemical data assimilation in AOSC, IPST and CSCAMM. Preference will be given to candidates who will further strengthen the strong collaboration between the University and nearby national laboratories including the National Centers for Environmental Prediction, National Weather Service, at NOAA, the Global Modeling and Assimilation Office at NASA and the Navy Research Laboratory. The appointment of a candidate requires research accomplishments of originality and depth with an international

reputation as a scientific leader in data assimilation. The candidate should also have experience in the direction and/or management of collaborative research programs. Responsibilities include graduate and undergraduate classroom instruction and graduate student mentoring. The appointment will be jointly supported by AOSC, IPST, and CSCAMM.

In order to ensure full consideration, curriculum vitae, statement of professional goals, and the names of three references should be sent by April 5, 2007 to:

Tammy Paolino  
Department of Atmospheric & Oceanic Science  
3411 Computer & Space Sciences Building  
University of Maryland  
College Park, MD 20742

**NCAR Postdoctoral Fellow.** The Atmospheric Chemistry Division (ACD) at the National Center for Atmospheric Research (NCAR) in Boulder seeks an individual to perform experimental research on atmospheric molecular clusters. You will plan and conduct measurements or tests of new measurement techniques and suggest and make improvements to instrumentation or techniques. Duties include spectrum analysis and design of new experiments to better understand

atmospheric molecular clusters, as well as performance of field studies to look at remote real-world molecular clusters and writing up results for publication in scientific journals.

Requires Ph.D. in Physics, Chemistry, Atmospheric Chemistry, or a related discipline. Must have detailed knowledge of ion chemistry/cluster chemistry, general knowledge of atmospheric chemistry, and experience with mass spectrometry. Also requires experience with vacuum systems, flow tubes, and data collection hardware and software.

One-year term position with possibility of extension. View detailed job description at [www.ucar.edu](http://www.ucar.edu). Initial consideration will be given to applications received prior to April 6, 2007. Thereafter, applications will be reviewed on an as-needed basis. Apply online (preferred) or send a scannable resume to 3065 Center Green Drive, Boulder, CO 80301. (Reference job #7068EOS). We value diversity. AA/EOE.

**Post-Doc in Optical Remote Sensing.** Work with us to model, develop and test electro-optical systems to remotely sense the atomic, dynamical and chemical processes in the terrestrial atmosphere and near earth space environment.

A recent Ph.D. in Physics, Optics, Atmospheric Science, or Electrical Engineering or other related field is required. Knowledge of various optical remote sensing systems (spectral to hyperspectral imagers, spectroscopy and interferometry) as well as the ability to contribute to their design, improvement and operation is required. Experience in optical alignment and test is a plus as

is fieldwork experience. Software development expertise (IDL, VB, VC++, Fortran, C) in a PC environment and familiarity with numerical models of atmospheric chemistry, composition and dynamics is an advantage.

Citizen of, or permanent resident alien in the United States preferred per government contract stipulations. To apply, please see [http://www.sci-sol.com/jobs\\_021607.pdf](http://www.sci-sol.com/jobs_021607.pdf).

**Postdoctoral Positions (2).** The Atmospheric Sciences Research Center of the University at Albany, State University of New York (SUNY) invites applications for two postdoctoral positions. The researchers will join a team involved in the Atmospheric Radiation Measurement (ARM) program and the NOAA center for atmospheric Sciences. The focus researches are remote sensing and modeling: to study the impacts of clouds and aerosols on atmospheric energy and water cycles and to understand links among climate/vegetation/air quality. Employment is through the Research Foundation of SUNY and is contingent upon continued funding. Candidates should hold a Ph.D. in Atmospheric Sciences, Physics, or related disciplines with academic and publication records. Send curriculum vitae, brief statement of research experience and goals, and three letters of recommendation to Dr. Qilong Min, Atmospheric Sciences Research Center, SUNY at Albany, 251 Fuller Road, Albany, NY 12203 or to [min@ascr.cesm.albany.edu](mailto:min@ascr.cesm.albany.edu). The

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