Postdoctoral Position
at the
NOAA Geophysical Fluid Dynamics Laboratory
Princeton University
Princeton, New Jersey  USA

Cloud Parameterization in General Circulation Models

Through the UCAR Visiting Scientist Programs, the NOAA Geophysical Fluid Dynamics Laboratory (GFDL) at Princeton University is seeking a postdoctoral fellow to participate in the development of a parameterization for boundary-layer clouds in general circulation models. The successful candidate will participate with a team of scientists in implementing and evaluating a new approach to parameterizing boundary-layer clouds based on sub-grid distributions of motion and moisture which govern cloud properties. Extensive use will be made of observations from the VOCALS [VAMOS (Variability of the American Monsoon Systems) Ocean-Cloud-Antmosphere-Land Study] field campaign to develop and evaluate the parameterization. The position will provide opportunities to interact with scientists engaged in research on microphysical and aerosol aspects of cloud-climate interactions.

Essential Requirements: Ph.D. and experience in (1) general circulation, cloud-resolving, or large-eddy modeling and/or (2) development of physical parameterizations for general circulation models or numerical weather prediction.

Highly Desirable Requirements: Experience with field or satellite observations, or data analysis, especially for evaluating atmospheric models.

The successful candidate will be expected to publish in the scientific literature and participate in relevant scientific meetings, especially VOCALS Science Team meetings.

Further information about this position may be obtained by writing to Dr. Leo Donner at Leo.J.Donner@noaa.gov.

How to apply: There is no application form. Send the following materials to the UCAR/VSP:

1. Cover letter identifying this program
2. Curriculum vitae with a list of publications in refereed journals
3. Names and addresses of three references. It is the applicant’s responsibility to contact the references and request that they submit letters in support of your application to VSP.
4. PhD thesis abstract for recent PhDs.
5. Proposed project description, including a statement of relevance to the GFDL. Proposal must be titled and not exceed three pages, including references and figures.

Application deadline is July 15, 2008. Application review will begin July 15; however, applications will be accepted until the position is filled.

Send applications and letters of reference to:

UCAR Visiting Scientist Programs
P.O. Box 3000
Boulder, CO 80307-3000 USA

You may send all this material electronically. For further information, please call 303-497-8634, send e-mail to: vsp@ucar.edu or visit the VSP website at: www.vsp.ucar.edu

UCAR is an EO/AAE who values and encourages diversity in the workplace.
Postdoctoral Fellowship at the
NOAA Geophysical Fluid Dynamics Laboratory

The UCAR Visiting Scientist Programs office is recruiting a postdoctoral scientist to work in Princeton at NOAA's Geophysical Fluid Dynamics Laboratory (GFDL) as part of a partnership between GFDL and the Northwest and Southwest Fisheries Science Centers (NW-SWFSC) in Newport, OR and La Jolla, CA.

The postdoctoral researcher will play a leading role in analyzing model output of GFDL's seasonal to inter-annual climate prediction system to develop ecological forecasts in the California Current Large Marine Ecosystem (CCLME). The topic will be finalized after initial study of existing model and ecosystem data and could include: prediction of the timing and duration of important seasonal upwelling events and their relationship to commercially and ecologically important fish and crustaceans such as salmon and krill; determine the relationship between longer term climate events such as the Pacific Decadal Oscillation and anchovy and sardine populations in the Northeastern Pacific. Additional extensions of this work might include assessment of the role of decadal-centennial climate change on fisheries and marine mammal populations, and extension of regional climate-fisheries predictive tools across geographic provinces. The intended postdoctoral researcher would sit primarily at GFDL, but is expected to travel periodically to Newport, OR and La Jolla, CA for extended work with NW and SWFSC scientists.

The postdoctoral researcher will be responsible for assembling and organizing the relevant data, performing appropriate mathematical and statistical analyses, and must be able to effectively summarize their results in the form of reports, refereed journal publications and/or meeting presentations and seminars.

Candidates must have a Ph.D. in biological or physical oceanography, applied ocean sciences, or an equivalent degree, with demonstrated experience in climate dynamics and/or fisheries and integrative research. Successful candidates will be skilled in the use of mathematics and statistics in the analysis of time series data, and have demonstrated experience using common large scale model analysis software (e.g. FERRET, IDL, ncview, Ocean Data View, MATLAB). Candidates should be familiar with general physical and biological oceanographic principles, have the ability to work with teams of scientists from other disciplines, communicate effectively in both written and oral formats, and have published, as the senior author, a minimum of two papers in peer-reviewed scientific journals over the past three years. Term of appointment: One (1) year, with the possibility of renewal for a second year, depending on the availability of funds.

The position is located at the Geophysical Fluid Dynamics Laboratory in Princeton University Forrestal Campus, New Jersey, and will involve frequent travel to the West Coast to collaborate with ecosystem scientists.

**GFDL Supervisor:** Dr. John Dunne.

**Co-Principal Investigators:** Vecchi (GFDL), Peterson (NWFSC) and Pinney (SWFSC)

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- PhD thesis abstract for recent PhDs.
- Proposed project description, including a statement of relevance to the GFDL. Proposal must be titled and not exceed three pages, including references and figures.

**Application deadline is August 1.** Application review will begin August 1; however, applications will be accepted until the position is filled.

**Send applications and letters of reference to:**
UCAR Visiting Scientist Programs
P.O. Box 3000
Boulder, CO 80307-3000 USA

You may send all this material electronically. For further information, please call 303-497-8649, send e-mail to: vsp@ucar.edu or visit the VSP website at: www.vsp.ucar.edu

UCAR is an EO/AAE who values and encourages diversity in the workplace.
UCAR Fellowship at Tropical Prediction Center/National Hurricane Center
Miami, Florida

The University Corporation for Atmospheric Research (UCAR), in cooperation with the National Oceanic and Atmospheric Administration (NOAA), is seeking a research meteorologist to work at the Tropical Prediction Center/National Hurricane Center (TPC/NHC) of the National Centers for Environmental Prediction (NCEP), part of the National Weather Service (NWS), in the area of satellite retrievals of ocean surface vector winds.

The TPC/NHC is collaborating with organizations within and outside of NOAA to enhance the current and future operational use of satellite-derived ocean surface vector wind data. Current sources of data being examined include active scatterometers (e.g., SeaWinds on QuikSCAT and ASCAT on METOP-A) and passive polarimetric radiometers (e.g., WindSat) for applications in operational tropical cyclone and marine analysis and forecasting, and related climatological studies. Partners include the NCEP Ocean Prediction Center (OPC) and the NOAA/National Environmental Satellite Data and Information Service (NESDIS)/Office of Research and Applications (ORA), and collaborators include NASA and members of the academic community.

Applications are being sought by qualified individuals interested in participating in the following activities:
1. Contribute to the development and evaluation of enhancements to retrieved ocean surface vector wind data in TPC/NHC areas of responsibility. Evaluate data from new instruments and evaluate improvements to currently available data. Evaluate experimental products.
2. Help to develop new quality control and interpretation guidelines for retrieved ocean surface vector wind data for use in TPC/NHC operations, as applied to a variety of weather systems.
3. Identify specific strengths, applications, weaknesses, and biases of satellite-derived ocean surface vector wind data in TPC/NHC areas of responsibility to maximize the utility of this data for TPC/NHC operations. Conduct extensive comparisons of ocean surface vector wind retrievals with other data sources. Quantify the impacts of satellite-derived ocean surface vector wind data on various TPC/NHC analyses, forecasts, and warnings.
4. Participate in evaluations of options for future satellite missions for the retrieval of ocean surface vector winds.
5. Participate in selected TPC/NHC operational activities in order to become familiar with operational procedures, needs, and constraints. Contribute to TPC/NHC techniques and applications development activities that may be either directly or indirectly related to the use of retrieved ocean surface vector wind data.

The applicant will work with forecasters and other scientists at the TPC/NHC located in Miami, Florida. The work will include collaborating with the broader scientific community, both within and external to project partner organizations. As the applicant will work on site at TPC/NHC, their overall research and daily work will be directed by a TPC/NHC staff member. The applicant may occasionally travel to NCAR (Boulder, CO), project partner organizations, and/or other relevant conferences and meetings. This position is anticipated to have duration of approximately 18 months. There is some possibility for extension based upon available funding and continued satisfactory performance.

The mission of the TPC/NHC is to save lives, mitigate property loss, and improve economic efficiency by issuing the best watches, warnings, forecasts, and analyses of hazardous tropical weather, and by increasing understanding of these hazards. To fulfill its mission, the TPC/NHC is comprised of the Hurricane Specialists Unit (HSU), the Tropical Analysis and Forecast Branch (TAFB), and the Technical Support Branch (TSB). Core TPC/NHC products and services include tropical cyclone warnings, forecasts, outlooks from the HSU, and marine and satellite analyses, forecasts, and warnings from TAFB. The TPC/NHC is located on the campus of Florida International University in Miami, Florida. The NWS Miami Weather Forecast Office is collocated with the TPC/NHC.

The applicant should have a Ph.D. or M.S. in meteorology or atmospheric science. The individual should have the following knowledge, skills, abilities, and experience:
- Experience in tropical meteorology (knowledge of tropical cyclones and/or marine meteorology highly desirable)
- Experience in satellite remote sensing (knowledge of scatterometer wind retrievals highly desirable)
- Excellent oral and written communication skills and a strong ability to collaborate
- Scientific computing skills and abilities (knowledge of Unix and GEMPAK highly desirable)

The selected fellow will receive a fixed annual salary. Benefits include health and dental insurance, sick and annual leave, paid holidays, mandatory participation in a retirement fund (TIAA/CREF), and life insurance. Some funds are provided for scientific travel, publications, and other support costs.

To apply, send the following materials to UCAR/VSP:
- A cover letter identifying this position
- Curriculum Vitae with a list of publications, technical reports, and professional presentations
- Names and addresses of three professional references (applicants should request letters be sent to UCAR/VSP as soon as possible)
- Ph.D. dissertation and/or M.S. thesis title(s) and abstract(s)
- One to two page statement of experience and interests as related to goals of this position

Applications will be reviewed as they are received and the position will remain open until filled.

Send application materials to the following address:
UCAR Visiting Scientist Programs
Attn: Meg Austin, Director
P.O. Box 3000
Boulder, CO 80307-3000, USA

For further information, please call (303) 497-8649 or send e-mail to vsp@ucar.edu

UCAR is an EO/AAE who values and encourages diversity in the workplace.
UCAR VISITING SCIENTIST
Operational Impact of Satellite Surface Vector Wind

The University Corporation for Atmospheric Research Visiting Scientist Programs, is recruiting a visiting scientist to work at the NOAA National Environmental Satellite Data, and Information Service (NESDIS), Office of Research and Applications, in Camp Springs, Maryland. The selected scientist will be involved in the operational impact of satellite surface vector wind (OSVW) on numerical weather prediction. This position will be within the Joint Center for Satellite Data Assimilation (JCSDA), working in close partnership with personnel at the NESDIS Ocean Surface Winds Team, the NWS/National Centers for Environmental Prediction, and OAR/Atlantic Oceanographic and Meteorology Laboratory.

Ocean surface vector wind (OSVW) data from QuikSCAT have been available to the operational weather forecasting community since the spring of 2000. QuikSCAT data are processed and distributed in near real-time by NOAA/NESDIS. The two main user groups within the operational weather community are the numerical weather prediction (NWP) models and the human forecasters with marine responsibilities. The NWP models utilize OSVW data through data assimilation techniques while the marine forecaster uses these data as observations. QuikSCAT retrieves OSVWs over 90% of the world’s oceans every day, and yields tremendous information over an otherwise data sparse region. Additionally, EUMETSAT recently launched ASCAT aboard their MEOP satellite which is also providing NOAA with OSVW data. Since OSVW data became available to the National Weather Service (NWS), its value was readily obvious. However, determining how to best utilize and quantify the impact of these data has been an ongoing challenge. QuikSCAT OSVW data is currently being assimilated and utilized by the NWS Global Forecast System (GFS). ASCAT OSVW is currently in its validation phase at NOAA. Upon completion of the ASCAT validation, these data will also be assimilated and the resulting impact on NWP assessed. Additionally, NOAA is currently conducting a study with NASA/JPL to help determine what path NOAA should pursue to establish an operational satellite OSVW capability, where the options are a mission with QuikSCAT-equivalent capabilities or one with more advanced OSVW capabilities. Understanding how more advanced OSVW capabilities would impact current and future NWP and ocean models will be important.

NWP models are complex systems. Investigating optimal ways to assimilate satellite OSVW data and to quantify the impacts on NWP in the operational environment will be a central activity for this position.

Main Activities include:
- Assimilation and evaluation of NWP impacts of OSVW from the QuikSCAT, ASCAT, and WindSat instruments
- Quantify the impacts of QuikSCAT, ASCAT and WindSat on NWP model tropical cyclone forecasts, wave forecasts and any other appropriate metrics
- Investigate improved data assimilation techniques and model impact assessment metrics for OSVW
- Conduct data assimilation experiments to assess the NWP model impacts of a next-generation satellite OSVW scatterometer mission

Applicants should have a Ph.D. in atmospheric, oceanic, physics or related sciences.

The selected candidate will receive a fixed annual salary commensurate with experience. Benefits include health and dental insurance, personal time off, paid holidays, mandatory participation in a retirement fund (TIAA/CREF), and life insurance. Some funds are provided for scientific travel and other support costs.

The position will remain open until filled.

To apply, send the following materials to the UCAR Visiting Scientist Programs:
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- PhD thesis abstract for recent PhDs.
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Boulder, CO 80307-3000 USA

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