JCSDA Quarterly

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Joint Center for Satellite Data Assimilation • 5200 Auth Road • Camp Springs • MD • 20746

News in This Quarter

John Le Marshall to Lead the JCSDA

The JCSDA Management Oversight Board of Directors has approved the appointment of Professor John Le Marshall as the new Director of the JCSDA. Le Marshall is a Principal Research Scientist at the Australian Bureau of Meteorology, Melbourne. He has headed the Satellite Section in the Bureau of Meteorology, which is responsible for planning, implementation, and maintenance of satellite data reception and processing, and for policy development. He has also led the Satellite Meteorology Research group of the Bureau of Meteorology Research Center (BMRC). His research interests include sounding the atmosphere from space, and satellite data assimilation and application. Le Marshall has served as Co-chair of the international TOVS Working Group and Chairman of the Geostationary Imaging Fourier Transform Spectrometer (GIFTS) Team. His appointment is through the University of Maryland, College Park, Maryland. Le Marshall plans to arrive in the U.S. in late summer to take on his new responsibilities.

JCSDA Workshop on Radiative Transfer Modeling

The JCSDA workshop on radiative transfer modeling identified several overarching issues that should be addressed in developing the next generation JCSDA radiative transfer model. The advanced radiation model will extend the current clear sky capability to dynamically-active weather regions and geographically complex areas by including more physical processes – in particular those associated with clouds and precipitation. It is anticipated that the model will significantly improve and accelerate the assimilation of satellite measurements from current instruments and future advanced sensors in numerical weather prediction models. The primary purpose of the workshop was to establish a working plan for the development of the JCSDA community-based radiative transfer model. The workshop was held at the NOAA Science Center, Camp Springs, Maryland on June 2-3, 2003. Participants included JCSDA staff and funded principal investigators (PIs) working on radiative transfer from NOAA/NESDIS, NOAA/OAR, NOAA/NWS, NASA/Global Modeling and Assimilation Office (GMAO), University of California at Los Angles, Colorado State University, University of Wisconsin, and University of Maryland at Baltimore County.

Details of all presentation materials and a summary can be found in the NESDIS anonymous ftp directory.
orbit35i.nesdis.noaa.gov/pub/arad/ht/jcsda

JCSDA Workshop on Ocean Data Assimilation

The purpose of the JCSDA Workshop on Ocean Data Assimilation was to initiate discussions between JCSDA staff and funded principal investigators (PIs) on a feasibility of building a JCSDA ocean data assimilation system. The workshop was held at NASA/ Goddard Space Flight Center (GSFC) on June 16, 2003, and included JCSDA staff members and PIs working on ocean data assimilation from NASA/Global Modeling and Assimilation Office (GMAO), NOAA/Environmental Modeling Center (EMC) and NOAA/NESDIS/Office of Research and Applications (ORA), and the PIs from University of Maryland, Columbia University and Naval Research Laboratory (NRL). The PIs reported on the status of their current ocean modeling activities and their future plans.

Recognizing that the level of maturity of ocean assimilation systems is lower, in terms of real-time applications, than that of atmospheric systems, the workshop recommended that the research activities of JCSDA PIs be closely linked to those of one of the core groups of the Center. To facilitate such linkage, the JCSDA should strive toward building the capability to:

- Provide assimilated ocean datasets to the community for research purposes
- Provide community access to and support of (a version of) an operational ocean data assimilation system

FY04 JCSDA Announcement of Opportunity

The FY 04 Announcement of Opportunity for the JCSDA extramural research grants program will appear in July 2003 as part of a NOAA Omnibus Notice in the **Federal Register**. The purpose of this new Omnibus Notice is to provide the general public with a single source of program and application information related to the Agency's competitive grant offerings. This Omnibus Notice is designed to replace the

multiple **Federal Register** notices that traditionally advertised the availability of NOAA's discretionary funds for its various programs. Please visit the Grants Home Page at the NOAA website:
http://www.ofa.noaa.gov/~amd/SOLINDEX.HTML
for further information.

Data Assimilation Paper in the Journal of the Atmospheric Sciences

The paper *Satellite Data Assimilation in Numerical Weather Prediction Models: 1. Forward Radiative Ttransfer and Jacobian Models in Cloudy Atmosphere* by F. Weng and Q. Liu will be published in the Journal of the Atmospheric Sciences. This is the first in a series of reports discussing the uses of satellite cloudy radiances. The paper focuses on enhancing radiative transfer models to include all Stokes components and their Jacobians with respect to various parameters under cloudy and precipitation conditions.

NCEP to Test NASA's Land Information System (LIS)

On May 29, the respective Land Teams of NCEP/EMC and NASA Goddard Hydrological Sciences Branch held a 1-day workshop at Goddard to begin the process of transferring the NASA Global Land Data Assimilation Suite (GLDAS) to the NCEP Central Computing Facility (NCCF). Successful transfer will allow NCEP to initialize the land states of the its Global Forecast System (GFS: both weather and seasonal) via various land data assimilation scenarios.

The NASA GLDAS is now being re-configured for efficient parallel processing for fine resolution on the global domain. This new configuration is referred to by NASA as the Land Information System (LIS). The latter, like the EMC NLDAS suite, can execute several land models (including the NCEP Noah land model). Additionally, the LIS can execute on most any global grid (including our Gaussian grids) of any arbitrary resolution, right on down to 1-km. The two land teams have decided to carry out our first NCEP tests of LIS using the NCEP Noah land model for the test period of May 2003.

JCSDA Seminars in This Quarter

Drs. Karen St. Germain, Naval Research Laboratory, and Joanna Joiner, NASA/GMAO presented the final seminars of the JCSDA 20002-03 seminar year. St. Germain discussed *The Coriolis WindSat System*, an NRL experimental satellite payload to demonstrate the viability of measuring both ocean wind speed and wind direction from passive microwave instruments. The sensor provides risk reduction for NPOESS Integrated Program Office's development of the Conical Microwave Imager Sounder (CMIS). Preliminary analyses show that the instrument can provide unambiguous wind direction signals.

The JCSDA plans to obtain WindSAt data for tests and assessments of the derived ocean wind products.

Dr. Joiner spoke on progress in the *Assimilation of Atmopheric InfraRed Spectrometer (AIRS) Data at the NASA GMAO*. AIRS is the first of a new generation of hyperspectral atmospheric sounding instruments. Dr. Joiner described a new method for determining which AIRS channels were not affected by cloud contamination. She also showed some preliminary results on the monitoring and assimilation of AIRS data at the NASA Global Modeling and Assimilation Office (GMAO).

Outlook for Next Quarter

JCSDA Briefing at the IPO

The JCSDA has scheduled a briefing to the NESDIS Assistant Administrator, Greg Withee, and NESDIS Office Directors at the NOAA Integrated Program Office on July 11, 2003, 10:00-11:30 AM.

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Dr. Marie Colton to Present Invited Paper at IUGG General Assembly

Dr. Marie Colton, Director of NESDIS/ORA, and a member of the JCSDA Management Oversight Board of Directors, will present an invited paper on *Satellite Data Assimilation in Numerical Weather Prediction Models: Current Status* and Future Challenges at the International Union of Geodesy and Geophysics (IUGG) General Assembly in Sapporo, Japan on July 1-3, 2003. Colton's paper, which will focus on the background, goals, and activities of the JCSDA, will be part of the Symposium on Data Assimilation for Atmospheric and Oceanic Processes at which some 100 papers on data assimilation will be presented. IUGG General Assemblies are held every four years and over 5000 scientists usually attend.

Workshop on Land Data Assimilation

The JCSDA will conduct a workshop on land data assimilation at NOAA Science Center, Camp Springs, MD on July 18, 2003. Contact Drs. Dan Tarpley (ORA) and Ken Mitchell (NCEP) for further information.

Upcoming Seminars

After a summer break, JCSDA seminars will resume in the fall. Dr. Greg Jacobs, NRL, will speak on Ocean models and Assimilation at NRL on September 17.