

Atmospheric Sciences Section of AGU Newsletter

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The Mesa Lab. (NCAR). Photo by Michel d.S. Mesquita.

AS Newsletter - Editorial -

Dear Readers,

A new issue of the newsletter is here. We have the results of the Leadership elections for the AS Section and so we present the winners. Please remember that the calls for the Holton and Kaufman Awards are open and also that we still need an Education Chair for our section.

In this issue we also include an interesting article by Michel d.S. Mesquita about the MMM at NCAR and a contributed article about meteorology in Romania.

Do not forget to check the sections about opportunities, conferences and schools. They include a lot of interesting things. Happy reading,

Juan A. Añel, Editor-in-Chief
EPhysLab, Univ. of Vigo at Ourense, Spain

Newsletter Editors:

* Michel d.S. Mesquita - Bjerknes Centre for Climate Research, Bergen, Norway.

Contributors to this issue:

* Aristita Busuioc - National Meteorological Administration, Bucharest, Romania.

Section News

AGU 2010–2012 Leadership Election Results - AS Section.

The AGU has announced the results of the 2010-2012 leadership elections. We congratulate the winners and present the ones from our section.



Peter J. Webster, President-elect.



Surabi Menon, Secretary of Aerosols & Clouds



Natalia Andronova, Secretary of Physics, Climate & Dynamics



Sasha Madronich, Secretary of Composition & Chemistry

Announcement

Education Chair for AS Section

We are seeking a new volunteer to fill the position of Education Chair for the Atmospheric Sciences section. Duties include coordinating the student paper awards at AGU meetings, helping to convene atmosphere-related education sessions at meetings, and occasionally helping to coordinate the Geophysical Information for Teachers (GIFT) workshop at meetings. If interested, please contact the current chair, Dr. Lin Chambers, at lin.h.chambers@nasa.gov

James R. Holton Junior Scientist Award

Yoram J. Kaufman Award for Unselfish Cooperation in Research



Now is the time to submit nominations for the Holton Award. The deadline is July 2, 2010. To be eligible, candidates should be a member of the AGU, and be no more than three years past the award of the Ph.D. degree. Members of the AGU are encouraged to nominate deserving individuals. The nomination package must consist of four items, each no longer than two pages in length:

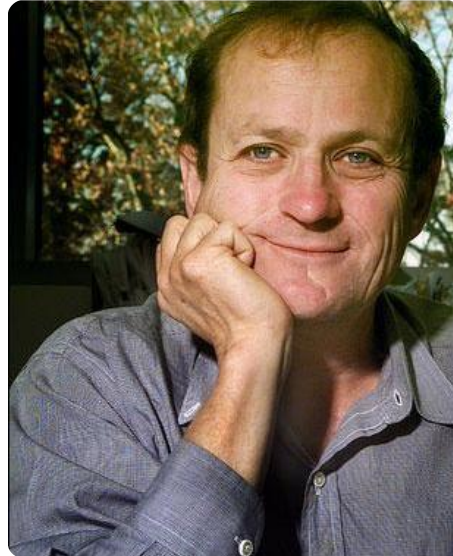
- a nomination letter,
- the candidate's curriculum vitae, and
- two letters of recommendation.

The nomination and supporting letters should clearly state how the nominated individual's research accomplishments are outstanding for one at his/her stage of career. Nominations must be submitted by July 2, 2010 (preferred as one combined pdf file) to Warren Wiscombe at

Warren.J.Wiscombe@nasa.gov.

For more details, see:

<http://atmospheres.agu.org/HoltonAward.htm>.



Now is the time to submit nominations for the Kaufman Award. The deadline is July 2, 2010. To be eligible, the candidate must be a member of the AGU, and be at least ten years past the award of the Ph.D. (or equivalent). The citation will read: "The Yoram J. Kaufman Award for broad influence in atmospheric science through exceptional creativity, inspiration of younger scientists, mentoring, international collaborations, and unselfish cooperation in research." The nomination package must consist of:

- a nomination letter,
- the candidate's curriculum vitae, and
- three letters of recommendation, at least one from a collaborator of the nominee from a different nation.

The nomination and supporting letters should clearly state how the nominated individual has exhibited the qualities noted in the citation. Nominations must be submitted by July 2, 2010 (preferred as one combined pdf file) to Alan Robock at

roboc@envsci.rutgers.edu.

For more details, see:

<http://atmospheres.agu.org/KaufmanAward.htm>.

Announcement

Editor for EOS Atmospheres and Oceans

EOS is looking for a new Editor of Atmospheres and Oceans (including climate and global change) to replace Hassan Virji. Editors will be appointed for a three-year term. Duties include:

- * deciding on the suitability of contributed items and advising authors on what is needed to make contributions publishable, using the advice of the Editorial Advisory Board and outside reviewers. Editors review material not only for their scientific accuracy but also clarity, readability, and for their interest to the broad geophysics community;*
- * soliciting manuscripts to help assure that Eos continues to meet its goals and commitments to the entire membership;*
- * setting the editorial standards for Eos in keeping with the objectives for the publication and policies and guidance provided by the Publications Committee; and*
- * making recommendations to enhance the vitality of Eos.*

Applicants should be committed to fast-paced deadlines.

A search committee appointed by the Union president will evaluate the candidates and will interview a small number of highly qualified individuals.

To be considered for one of the editor positions, send your curriculum vitae with a letter of interest explaining why you want to be an Eos Editor via e-mail to Eos EditorSearch@agu.org. The deadline is 9 April 2010.

If you would like to nominate a highly qualified colleague, send a letter of recommendation to the same e-mail address.

The deadline to submit an abstract is 31 March 2010



The Meeting of the Americas
8 to 13 August 2010, Foz do Iguassu, Brazil

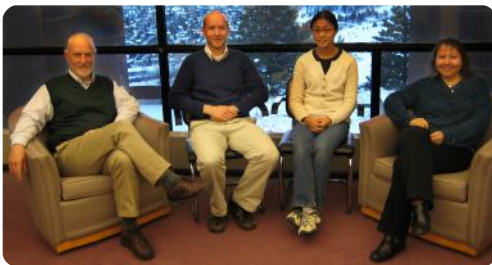


From State-of-the-Art Model to Top-Notch Research: A Visit to the Mesoscale and Microscale Meteorology Division at NCAR

Michel d.S. Mesquita

The National Center for Atmospheric Research (NCAR) is a world-renowned climate center. It is the symbol of weather and climate modeling, science innovation, cooperation and hard work. One successful example is the state-of-the-art model produced there, called the WRF (Weather Research and Forecasting) model. The WRF model is now becoming widespread throughout the world. It is used not only for weather forecasting, but also for idealized simulations and more recently for climate runs. These climate runs were the reason why we had the opportunity of spending three weeks at NCAR, with funding from the Bjerknes Centre for Climate Research, in order to exchange ideas and learn more about the WRF model. So this article is just to give an idea of the great experience Dr. Ulla Heikkilä and I had at the Mesoscale and Microscale Meteorology (MMM) Division at NCAR.

The MMM group at NCAR is quite large. Our host was Dr. Jimy Dudhia, and the work of his group focuses on one of the core elements of Regional Climate Models (RCMs): the physics schemes. These schemes make possible to simulate cloud physics and other processes more realistically, thus improving RCM runs. The WRF model is one of the main RCM tools used by the MMM group. It has been widely used worldwide and it is the successor of the MM5 model. The WRF model allows users to make idealized simulations, to work on regional and global applications, in data assimilation



The NRCM group (Nested Regional Climate Modeling) working in MMM. From left to right: Dr. Greg Holland (lead), Dr. James Done, PhD student Asuka Suzuki-Parker and Cindy Bruyere.



From left to right: Dr. Jimy Dudhia and his guests, Dr. Ulla Heikkilä (visiting from Norway), Daniel Argüeso (visiting from Spain), me (visiting from Norway) and Dr. Pedro Muñoz (visiting from Spain). Photo taken in front of the Foothill Labs.

research and so on. The model is continuously improved by the MMM group often in collaboration with other research groups. Since the version WRF 3.1, users can apply spectral nudging, which may improve the regional climate simulations.

But we were not alone there; two visitors from Spain were also working with Dr. Dudhia during our visit last year: Pedro A. Jimenez and Daniel Argüeso. We had the opportunity of interacting with them and learning more about how the WRF has been used in Spain. Their work involved using the WRF for wind power research and also for complex terrain in Spain. When it comes to wind power studies, the WRF model can also be an important tool. For example, it can run Large Eddy Simulations (LES) at resolutions of tens of meters. LES in the WRF model has been used not only to study wind turbines and wakes, but also to understand the wind flow around buildings and cities. These are some of the examples that illustrate the interesting research work that has been going on at NCAR.

When Hurricanes Get Higher Resolution

The WRF model can also be used as an optimal tool for studying hurricanes. We had the opportunity of attending some talks given by Cindy Bruyere and Asuka Suzuki-Parker. The head of the group is Dr. Greg Holland. Suzuki-Parker is working on her PhD with the challenging task of tracking

hurricanes and understanding their characteristics working with around 300 TB of data. These are high-resolution simulations which help researchers understand more about the characteristics and "preferred" paths of hurricanes in a changing climate.

The WRF model also allows researchers to use a "tropical channel" setup for tropical studies. In this type of setup, the domain consists of the boundaries above and below a certain latitude (e.g.: from 45°S to 45°N) and no side boundaries. This process allows the interaction from the extra-tropics through the above-and-below boundaries. And according to Bruyere, this setup also allows the waves which are generated to propagate around the globe more naturally - as in the real world and in global models. For more information on the hurricane work at NCAR, check out the new paper by Holland et al. (2010) entitled "Model investigations of the effects of climate variability and change on future of Mexico tropical cyclone activity" to be presented at the 2010 Offshore Technology Conference in Houston, Texas, USA, 3-6 May 2010.

Need Some Help?

Our visit to NCAR also gave us the chance to interact closely with the WRF help people. Dr. Wei Wang and Cindy Bruyere are some of the names of the people behind the

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WRF-help desk: a channel to help WRF users. WRF users can send e-mails to the help desk with questions related to the program compilation, its usage, and so on. An alternative way to get WRF-related help is to attend the WRF Tutorial. This Tutorial is also organized by the WRF Help personnel and it has been extended to different continents, such as Europe and Asia. It consists of a one- to two-week course where users can have hands-on experience on how to use the WRF model, and optionally receive specialized knowledge on WRF chemistry and data assimilation.

The WRF-help group at NCAR also organizes an annual meeting called "WRF Users' Workshop". The workshop is now in its 11th edition! It gathers researchers from around the globe. It encompasses a series of oral presentations and posters. It also includes specialized sessions about the use of the WRF and other software that helps analyze WRF data, such as the NCAR Command Language (NCL). The next WRF Users' Workshop is planned for June 21-25, 2010.

Future Outlook

The newest version of the WRF is to be released in late March and it will feature reworked I/O infrastructure and new physics among other things. It is always exciting for the WRF community when a new version is released! Today, the WRF model features so many elements, such as LES, tropical channel, a polar version of WRF physics and others, that it becomes impossible to list all of them here. This only highlights the fact that the WRF model is a powerful tool - one of the products of the excellent work made at NCAR. We are very thankful to Dr. Dudhia and the MMM researchers for allowing us to visit their group. Our visit was very fruitful and it resulted in establishing some collaboration with different researchers.



Dr. Ulla Heikkilä working at the office we shared during our NCAR visit.

Service and Science of Meteorology in Romania

Aristita Busuioc

History

The oldest references about weather in Romania go back to the 15th century. In old chronicles such as the "Brasov Chronicle" (1420-1845), there are allusions to some unusual weather phenomena. Also in the "Moldavian Country Chronicle," published by Grigore Ureche in 1604, there are references to floods in 1504: "throughout the summer there were heavy rainfalls and torrents, causing many people and animals to drown," and also to the drought of 1585: "severe drought across the country, such that all springs, valleys and fish ponds ran dry, and where you had fished before, you were now ploughing." As back as in 1840, meteorology was taught as a science at the "Scoala Vasiliana" in Iasi, using a manuscript in Greek from the Metropolitan Church Library.

The first systematic meteorological observations were recorded in Iasi (starting in 1770), Bucharest (starting in 1773) and Sibiu (starting in 1789).

On July 30, 1884, the Meteorological Service of Romania was set up under the leadership of Stefan Hepites. On his initiative, Romania joined the founding countries of the International Meteorological Organization. In 1891, at the Munich Conference, Stefan Hepites was elected as member of the International Meteorological Committee. Even from the early stage, the Romanian Meteorological Service is appreciated by the international scientific community. At the International Exhibition in Paris, the Romanian Meteorological Service was awarded the silver medal and the "Diploma of Honor." At the Exhibition of the Society of Science (Bucharest, 1903), it was awarded the gold medal.

The number of observational stations started to increase rapidly from 11 in 1885 to 30 in 1888. In 1936, the state-owned synoptic observations network was established. In 1952 a legal document was adopted, which ensured the representativeness of the weather stations. It also made possible the relocation of many of them and the establishment of new ones. This is how, in 1959, the national meteorological network was already composed of 102 synoptic stations, 30 climatological stations, 1655 rain measurement posts and 250 phenological posts.

The military weather stations began systematic pilot balloon soundings in 1915. The first meteorological observatory was built at



Stefan Hepites (1851-1922). National Meteorological Administration, Bucharest.

Baneasa airport in 1930 and becoming, among others, a capacity building centre. In 1949, the Atmospheric Physics Observatory was set up in Afumati under the leadership of Prof. Mircea Heroveanu. Systematic upper air measurements were initiated in 1959 at three stations and at four different standard observation times: Cluj, Constanta and Bucharest.

The first automatic weather station designed and built by the Romanian Meteorological Institute was set up in 1960. The station was installed at the Atmospheric Physics Observatory and in 1961 it was moved to Cozia mountain peak (1677 m.). In the following years another three automatic weather stations were installed on different mountain peaks (Cozia, Parangul Mic and Pietrosul). The automatic weather station conceived by the Romanians was displayed at the first World Meteorological Organization (WMO) Technical Conference on Automatic Weather Stations held in Geneva in 1966.

The first operations with numerical models for weather forecasting were performed in 1965, when the Laboratory of Dynamic Meteorology was set up under the leadership of Nicolae Besleaga. Later on, in 1984, a research team for mesoscale meteorology was set up, and it would become the core of a research team on atmospheric numerical modeling under the leadership of Ion Draghici.

Services

The Synoptic Weather Forecasting Service was set up in 1925 and the first regional forecasting center was set up in Constanta in 1936. In the following years, more regional centers were established in Bucharest

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the pollution forecasting chain on street and urban level and the dispersion-monitoring chain for the main hot-spots across Romania. A positive trend was identified in the concentration of carbon dioxide at the Fundata station over the period 1975-2005.

Agrometeorology: The NMA performs several activities related to agrometeorology. One of its lines of work is the impact of climate variability upon the soil water balance components and the estimation of maize crops using the CropWat model (http://www.fao.org/nr/water/infores_data_bases_cropwat.html) combined with the seasonal forecast. The potential of thermal resources is also evaluated by analyzing the space-time variation of several agrometeorological indices using geographic information systems (GIS). Another line of work is the estimation of climate change based upon the time of bud bursting and blossoming of apricot, plum, pear and apple species.

Opportunities

Note: You may be asked for your AGU member # to open the following links. Visit the AS Section website for links to other job opportunities not listed here.

Some of these job postings and others can be found at:

http://www.agu.org/cgi-bin/membership_services/joblistings.cgi

Atmospheric Sciences

* Research Scientist/Postdoc to work in the COMBINE Project, Max Planck Institute for Meteorology, Hamburg, Germany. Contact: Marco Giorgetta (marco.giorgetta@zmaw.de).

* 2 Postdoctoral positions in Paleoclimate Modeling, VU University, Amsterdam, Netherlands. Further information: <http://www.falw.vu/~renh/palmodjobs.htm>

* Research Scientist in sea ice modelling, CSIRO, Aspendale, Victoria, Australia. Further information: <http://www.csiro.au/people/Careers.html>

* Director, Oklahoma Climatological Survey. Contact: John T. Snow (jsnow@ou.edu).

* Postdoctoral position in adapting to climate change, Cranfield University (UK). Contact: Simon Pollard (s.pollard@cranfield.ac.uk).

* Postdoctoral Fellow to develop a global atmospheric model dynamical core based on a Lagrangian vertical coordinate, University of Exeter (UK). Contact: John Thurnburn (j.thurnburn@exeter.ac.uk).

* Postdoctoral Research Associate in variability of the El Niño Southern Oscillation from palaeo records and climate model simulations, University of Edinburgh (Scotland). Contact: Gabriele Hegerl (gabi.hegerl@ed.ac.uk).

* Postdoctoral research associate in regional climate modelling, Department of Physics, Imperial College (UK). Contact: Ralf Toumi (r.toumi@imperial.ac.uk).

* Postdoctoral research associate in climatology and remote sensing/modeling, Bayreuth University (Germany). Contact: Thomas Nauß (thomas.nauss@uni-bayreuth.de).

* Postdoctoral fellows and Research Associates atmosphere and/or ocean modeling and data assimilation, Global Ocean-Atmosphere Prediction and Predictability Network, Canada. Contact: Susan Woodbury (susan.woodbury@dal.ca). (thomas.nauss@uni-bayreuth.de).

* Senior Computational Climate Scientist, Argonne National Laboratory. Further information: <http://climate-search.cels.anl.gov/>

* Postdoctoral position in climate modelling of energy and land-use scenarios in Global Climate Models, Joint Research Centre, Ispra (Italy). Further information: <http://ies.jrc.ec.europa.eu/Job-opportunities/open-calls/call-for-granholders.html>

* Assistant, Associate or Professor, Institute of Atmospheric Sciences, South Dakota School of Mines and Technology. Further information: <http://sdmines.sdsmt.edu/sdsmt/-employment>

* Atmospheric Scientist, Molecular Spectroscopy (Job ID #9068), Jet Propulsion Laboratory and the California Institute of Technology. Apply online at: <http://careerlaunch.jpl.nasa.gov/> (Job ID #9068).

* Atmospheric Scientist, Remote Sensing Retrievals (Job ID #8847), Jet Propulsion Laboratory and the California Institute of Technology. Apply online at: <http://careerlaunch.jpl.nasa.gov/> (Job ID #8847).

* Atmospheric Scientist, Remote Sensing Retrievals (Job ID #9058), Jet Propulsion Laboratory and the California Institute of Technology. Apply online at: <http://careerlaunch.jpl.nasa.gov/> (Job ID #9058).

* Postdoctoral research position in regional modeling, Laboratory for Atmospheric Research, Department of Civil & Environmental Engineering, Washington State University. Contact: Brian Lamb (blamb@wsu.edu).

Student Opportunities

* Ph.D. student position in validation of Megha-Tropiques satellite retrievals from Falcon-20 aircraft measurements of cloud microphysics in the tropics, Laboratoire de Météorologie Physique (LaMP) at University Blaise Pascal in Clermont-Ferrand, France Contact: Prof. Alfons Schwarzenboeck (A.Schwarzenboeck@opgc.univ-bpclermont.fr).

* 4 Ph.D. student positions in Paleoclimate Modeling, VU University, Amsterdam, Netherlands. Further information: <http://www.falw.vu/~renh/palmodjobs.htm>

* Ph.D. student position in simulation of biological aerosol influence on clouds on regional scales, Karlsruhe Institute of Technology, Germany. Contact: Corinna Hoose (corinna.oose@geo.uio.no).

* Ph.D. studentship in Improving Chemical Weather Forecasts Using Satellite Data, School of Earth and Environment, University of Leeds (UK). Contact: Martyn Chipperfield (martyn@env.leeds.ac.uk).

* Ph.D. student in environmental research, Paul Scherrer Institute (Switzerland). Contact: Ernest Weingartner (ernest.weingartner@psi.ch).

* Ph.D. studentship, in cloud microphysics and aerosol-cloud interactions, Leibniz Institute for Tropospheric Research, Leipzig (Germany). Contact: Bernd Heinold (bernd.heinold@tropos.de).

* Ph.D. studentships for the 2010 entry to the MRes Physics of Earth and Atmosphere, University of Leeds (UK). Contact: http://www.see.leeds.ac.uk/study/masters/courses/mres_physics_ea1.htm

* Ph.D. studentships for the 2010 entry to the MSc Climate Sciences, University of Vigo, Ourense (Spain). Further information: <http://masterclima.uvigo.es>. Contact: Luis Gimeno (l.gimeno@uvigo.es).

* Opportunity for student airborne research, NASA summer 2010 research program in Earth system science using its DC-8 flying laboratory. Further information: <http://www.nserc.und.edu/learning/SARP>

Schools

Weather and Climate Extremes During the Past 100 years

Diessenhofen, Switzerland. 7-9 June 2010.

People that are interested should send a title and an abstract by 20 April 2010 to Stefan Brönnimann (broennimann@env.ethz.ch).

2010 Summer School on Organic Aerosols

Ispira, Italy. 21-25 June 2010.

<http://aerosolschool.web.psi.ch/>

2nd Ewim Nimdie International Summer School - Weather and Climate Forecasting in Africa and its Application to Agriculture & Water Resource Management

Kwame Nkrumah University of Science & Technology, Kumasi, Ghana. 19-31 July 2010.

<http://www.ewim-nimdie.org>

Conferences

// 7th BIOMET Conference //

Freiburg, Germany. 12-14 April 2010.

<http://www.mif.uni-freiburg.de/biomet/bm7>

// Earth System Science 2010: Climate, Global Change and People //

Edinburgh International Conference Centre, Edinburgh, UK. 10-13 May 2010.

<http://earthsystemscience2010.org/>

// 29th Conference on Hurricanes and Tropical Meteorology //

Tucson, Arizona, 10 – 14 May 2010.

// CWE2010 - Fifth International Symposium on Computational Wind Engineering //

Chapel Hill, North Carolina, USA. 23-27 May 2010.

<http://www.cwe2010.org>

// 13th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes //

Paris, France, 1 - 4 June 2010.

<http://www.aria.fr/harmo/>

// 2010 Western Pacific Geophysics Meeting //

Taipei, Taiwan, 22 - 25 June 2010.

<http://www.agu.org/meetings/wp10/>

// Water 2010 //

Quebec City, Canada, 5 - 7 July 2010.

<http://www.water2010.org>

// 2010 NCAS Atmospheric Science Conference //

Palace Hotel, Manchester, UK, 5 - 7 July 2010.

<http://www.ncas.ac.uk/conference2010>

// 11th International Meeting on Statistical Climatology //

Edinburgh, Scotland, 12 - 16 July 2010.

<http://ccma.seos.uvic.ca/imsc/11imsc.shtml>

// 9th Symposium on the Urban Environment; AMS 19th Symposium on Boundary Layers and Turbulence; 28th Conference on Agricultural and Forest Meteorology //

Keystone, Colorado, 2 - 6 August 2010.

<http://www.ametsoc.org/meet/annual/>

// 2010 The Meeting of the Americas //

Foz do Iguaçu, Brasil, 8 - 13 August 2010.

<http://www.agu.org/meetings/ja10/>

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