

# WaVaCS Final Workshop

## Circular 2

2011-06-20

This is the second circular for the final workshop of COST Action WaVaCS. It will be a combined workshop of two different scientific themes. True to the spirit of a workshop, we want to foster discussion between the participants, not just the presentation of finished results.

### Science Themes

- 1) Water vapor time series and trends
- 2) Cirrus inhomogeneities and relationship to the environmental water vapor field and radiative transfer

### Date and Location

September 26-28, 2011

Laboratoire de Météorologie Dynamique  
Ecole Normale Supérieure (room: Durant)  
24 rue Lhomond  
Paris, France

### Format

The workshop will have plenary and parallel sessions. The majority of contributions will be given as a talk but a limited number of posters will also be available. We invite participants to bring their material to be discussed during informal discussion sessions.

### Proceedings

We plan an ACP special issue for COST WaVaCS. Participants will be invited to submit papers for this special issue. Most likely, COST will even pay publication charges for some articles, on a first come first served basis.

### Organizing Committee

Stefan Buehler (theme 1), Hélène Brogniez (local host and theme 1), Andrew Gettelman (both themes), Remy Roca (local host and theme 1), Peter Spichtinger (theme 2), Manfred Wendisch (theme 2)

### Registration

We still have a few free places. Registration webpage:

[http://www.sat.ltu.se/workshops/cost\\_wavacs\\_final\\_ws/registration](http://www.sat.ltu.se/workshops/cost_wavacs_final_ws/registration)

## Accommodation

Below is a list of hotels near the workshop venue, which was compiled by the local hosts.

[Hotel Andre Latin \(http://www.andre-latin-paris-hotel.com/\)](http://www.andre-latin-paris-hotel.com/): 50, rue gay lussac 75005 Paris - +33 1 43 54 76 60

[Hotel de Lutece](http://www.bestwestern.fr/fiche_hotel.jsp?HotelCode=93482&sob=A46)

([http://www.bestwestern.fr/fiche\\_hotel.jsp?HotelCode=93482&sob=A46](http://www.bestwestern.fr/fiche_hotel.jsp?HotelCode=93482&sob=A46)): 2, rue Berthollet 75005 Paris - +33 1 43 36 26 30

[Hotel Henri IV rive gauche Paris \(http://www.henri-paris-hotel.com/\)](http://www.henri-paris-hotel.com/): 9, rue Saint-Jacques 75005 Paris - +33 1 46 33 20 20

[Hotel des Alliees \(http://www.alliesparishotel.com/\)](http://www.alliesparishotel.com/): 20, rue Berthollet 75005 Paris - +33 1 43 31 47 52

[Hotel du Panthéon \(http://www.hoteldupantheon.com/\)](http://www.hoteldupantheon.com/): 19, place du panthéon 75005 Paris - +33 1 43 54 32 95

[Hotel Gay Lussac \(http://www.paris-hotel-gay-lussac.com/\)](http://www.paris-hotel-gay-lussac.com/): 29, rue gay lussac 75005 Paris - +33 1 43 54 23 96

[Comfort Hotel Mouffetard / Latin Quarter](http://www.choicehotels.fr/hotels/hotel?hotel=FR202&promo=gglocal)

(<http://www.choicehotels.fr/hotels/hotel?hotel=FR202&promo=gglocal>): 56, rue Mouffetard 75005 Paris - +33 1 43 36 17 00

[Hotel Maxim Quartier Latin \(http://www.maximparishotel.com/\)](http://www.maximparishotel.com/): 28, rue Censier 75005 Paris - +33 1 43 31 16 15

## Theme Descriptions

### Theme 1) Water vapor time series and trends

Water vapor is the strongest natural greenhouse gas. Simple thermodynamic arguments indicate that atmospheric relative humidity in a changing climate should remain approximately constant and thus specific humidity increases with increasing temperature, and the additional greenhouse effect amplifies warming. Simulations with global circulation models generally confirm this simple thermodynamic picture. However, the water vapor feedback is such a strong effect, that deviations from the expected behavior could be important, even if they are small in magnitude or regional in location.

The purpose of the workshop is to review available long-term datasets of atmospheric humidity (both relative and absolute), and compare them to model results in all regions of the atmosphere. The focus is on datasets that are directly suitable for evaluation of model climatology and long term trends. Papers on observed variability and trends are welcomed. Particularly invited are studies that compare datasets to model results.

### Theme 2) Cirrus inhomogeneities and relationship to the environmental water vapor field and radiative transfer

Cloud inhomogeneities, especially for ice clouds, have important implications for the radiative effects of such clouds, and may feedback on cloud dynamics and lifetime. We welcome papers on theory, measurements and modeling of cirrus cloud inhomogeneities to this session. We welcome studies based on in-situ or remote sensing measurements of the structure and variability of cirrus clouds. We also welcome simulations of cirrus cloud structure and evolution in fine scale

models, their representation in large scale models, and the impact of such inhomogeneities in radiative transfer models.

## List of Registered Participants

### Theme 1

Adam Jaczewski, Institute of Meteorology and Water Management  
Anne Lifermann, CNES  
B.J. Sohn, Seoul National University  
Barbara Brzóska, Institute of Meteorology and Water Management  
Bernard Legras, CNRS/ENS  
Brian Soden, Univ. of Miami  
Christoph Dyroff, Karlsruhe Institute of Technology  
Cornelius Schiller, Forschungszentrum Juelich  
Federico Fierli, ISAC-CNR  
Gabriele P. Stiller, Karlsruhe Institute of Technology (KIT)  
Gaëlle Clain, LSCE, IPSL  
Holger Vömel, Deutscher Wetterdienst  
Hélène Brogniez, LATMOS / IPSL  
Jo Urban, Chalmers University of Technology  
Joerg Schulz, EUMETSAT  
Katja Weigel, Institute of Environmental Physics (IUP), University of Bremen  
Klemens Hocke, Institute of Applied Physics, University of Bern  
Laurence Picon, LMD/UPMC France  
Lei Shi, NOAA National Climatic Data Center  
Luis Gimeno, Universidad de Vigo  
Marc Schröder, DWD  
Mathias Milz, Luleå University of Technology  
Matthias Schneider, Karlsruhe Institute of Technology  
Nathalie Courcoux, Deutscher Wetterdienst  
Niels Larsen, Danish Meteorological Institute  
Niklaus Kaempfer, IAP, Univ. of Bern  
Patrick Eriksson, Chalmers University of Technology  
Ramsés Sivira, Megha-Tropiques  
Richard Allan, University of Reading/NCAS Climate  
Riwal Plougonven, Laboratoire de Meteorologie Dynamique  
Rodrigo Guzman, LMD  
Roeland Van Malderen, Royal Meteorological Institute of Belgium  
Rémy Roca, LMD/CNRS  
Soulivanh Thao, CLS  
Stefan Buehler, Luleå University of Technology  
Stefan Lossow, Karlsruhe Institute of Technology  
Steffen Beirle, MPI Mainz  
Viju Oommen John, Met Office Hadley Centre  
William Ingram, Met Office Hadley Centre  
William Lahoz, NILU

### Theme 2

Ana Cirisan, Institute for Atmospheric and Climate Sciences, ETH Zurich  
Andreas Macke, Leibniz Institute for Tropospheric Research  
Andrew Gettelman, National Center for Atmospheric Research

Anna Luebke, University of Colorado at Boulder  
 Christoph Kiemle, DLR, Institut fuer Physik der Atmosphaere  
 Claudia Stubenrauch, Laboratoire de Météorologie Dynamique IPSL/CNRS  
 Clemens Fricke, University of Leipzig  
 Dr Steven Dobbie, ICAS, University of Leeds, UK  
 Fanny Finger, University of Leipzig  
 Jennifer Comstock, Pacific Northwest National Laboratory  
 Klaus Gierens, Deutsches Zentrum für Luft- und Raumfahrt  
 Manfred Wendisch, Leipzig Institute for Meteorology  
 Martin Wirth, Institut für Physik der Atmosphäre, DLR Oberpfaffenhofen  
 Martina Krämer, Research Center Jülich  
 Philippe Keckhut, LATMOS/IPSL  
 Sardar Al-Jumur, University of Leeds, UK  
 Sebastian Schmidt, University of Colorado  
 Silke Gross, DLR, Institut fuer Physik der Atmosphaere  
 Spichtinger, Peter, Johannes Gutenberg-University Mainz

## Draft Program

### Day 1 (Monday), Invited Talks for Both Themes

Each talk 30 minutes plus 10 minutes discussion time. Morning: Theme 1, afternoon: Theme 2.

09:00	Welcome
09:10	<b>BJ Sohn</b> , Tropical circulation changes inferred from long-term water budget data <b>Holger Voemel</b> , Trends in UT and stratospheric water vapor
10:30	Coffee
11:00	<b>Richard Allan</b> , Implication of trends and variability in low level water vapour <b>Brian Soden</b> , Constructing a free tropospheric humidity data set from intercalibrated satellite microwave observations
12:20	Lunch break
13:40	<b>Jennifer Comstock</b> , Measurements and models approach to understanding cirrus variability <b>Klaus Gierens</b> , Cirrus inhomogeneities and relationship to the environmental water vapor field and radiative transfer
15:00	Coffee
15:30	<b>Martina Krämer</b> , Water vapour measurements in the vicinity of cirrus: first results from the MACPEX 2011 field campaign (maybe title will change) <b>Sebastian Schmidt</b> , The spectral fingerprint of cirrus clouds <b>Martin Wirth</b> , The fine structure of cirrus clouds from high resolution airborne LIDAR measurements
17:30	Close
19:00	Perhaps a social event, dinner, or similar

### Day 2 (Tuesday), Split Theme Sessions

Each talk 15 minutes plus 5 minutes discussion time. Additional discussion time at the end of each group of talks

09:00	<b>Theme 1: Operational</b>	<b>Theme 2: Cirrus clouds and</b>
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	<p><b>Meteorological Data Records</b>  <b>Joerg Schulz</b>, Inter-Calibration of Meteosat First Generation IR Measurements Using HIRS Data  <b>Picon Laurence</b>, Study of Free Tropospheric Humidity trends from METEOSAT data  <b>Lei Shi</b>, A thirty-two-year time series of inter-satellite calibrated global HIRS upper tropospheric water vapor</p>	<p><b>radiation</b>  <b>Fanny Finger</b>, Spatially Inhomogeneous Cirrus: Influence on Atmospheric Radiation  <b>Andrew Gettelman</b>, Radiative impacts of Cirrus Microphysics  <b>Andreas Macke</b>, Does solar radiative transfer in cirrus care about inhomogeneities?</p>
10:00	Coffee	
10:30	<p><b>Courcoux Nathalie</b>, CM SAF ATOVS water vapour products  <b>Viju Oommen John</b>, Challenges and possible solutions in creating climate data records from microwave humidity sounders  <b>Discussion</b></p>	<p><b>Manfred Wendisch</b>, Cirrus heterogeneity and ice crystal shape: Effects on retrieval of cirrus optical thickness and effective radius  <b>Discussion</b></p>
12:00	Lunch break	
13:30	<p><b>Theme 1: Research Data Records</b>  <b>Steffen Beirle</b>, Application of 15 years of global atmospheric water vapor column observations from GOME-1/2 and SCIAMACHY for climate studies  <b>Matthias Schneider</b>, Monitoring tropospheric water vapour profiles with ground-based high resolution FTIR (Fourier Transform Infrared) spectrometers  <b>Roeland Van Malderen</b>, Integrated water vapor time series  <b>Cornelius Schiller</b>, Water vapour measurement quality  <b>Jo Urban</b>, Evolution and variability of water isotopologues in the tropopause region, stratosphere, and mesosphere derived from satellite measurements  <b>Discussion</b></p>	<p><b>Theme 2: Remote sensing of cirrus clouds</b>  <b>Philippe Keckhut</b>, Cirrus investigation above south of France (44°N) and at La Réunion (-21°S)  <b>Claudia Stubenrauch</b>, Cirrus and ice supersaturation from IR sounders  <b>Silke Gross / Christoph Kiemle</b>, TBD  <b>Discussion</b></p>
15:30	Coffee	
16:00	<p><b>Theme 1 Poster Session</b>  <b>Katja Weigel</b>, Water vapor in the upper troposphere and lower stratosphere, a time series from SCIAMACHY limb measurements  <b>Christoph Dyroff</b>, Comparing UT/LS humidity in the ECMWF model using five years of CARIBIC in-situ observations  <b>Stefan Lossow</b>, MIPAS observations of water vapour and its</p>	

	<p>isotologues</p> <p><b>Hélène Brogniez</b>, The Megha-Tropiques payload: a contribution to the monitoring of the tropical water vapor</p> <p><b>Barbara Brzóska</b>, The observed humidity trends based on radiosounding data series in the atmosphere over Poland.</p> <p><b>Klemens Hocke</b>, Trends in Integrated Water Vapour and Downwelling Radiation</p> <p><b>Mathias Milz</b>, Timeseries of SSM/T2 and AMSU-B UTH observations</p>
18:00	Close

### Day 3 (Wednesday), Sessions Continued, Group Work, Washup, MC Meeting

8:30	<p><b>Theme 1: Water Vapor Modeling</b></p> <p><b>Luis Gimeno</b>, trends in water vapor transport in the period 1980-2000</p> <p><b>William Ingram</b>, The water vapour feedback on climate change</p> <p><b>Adam Jaczewski</b>, Future projections of humidity from ENSEMBLES regional climate models</p> <p><b>Federico Fierli</b>, TBD</p> <p><b>Discussion</b></p>	<p><b>Theme 2: Cirrus cloud inhomogeneities and dynamics</b></p> <p><b>Sardar Al-Jumur</b>, Tropical tropopause cirrus cloud formed by gravity waves</p> <p><b>Ana Cirisan</b>, Lagrangian perspective in sonde measurements and modelling of cirrus clouds</p> <p><b>Steven Dobbie</b>, Influence of gravity waves on cirrus cloud and radiative properties</p> <p><b>Peter Spichtinger</b>, Cirrus cloud inhomogeneities driven by dynamics</p> <p><b>Discussion</b></p>
10:30	Coffee	
11:00	Group work: Water vapor open issues, needs/possibilities for coordinated efforts, upcoming satellite missions	Group work: Cirrus open issues, needs/possibilities for coordinated efforts, upcoming satellite missions
12:00	Joint wash up session with reports from working groups	
13:00	Workshop close (lunch break for MC members)	
14:30	MC Meeting	
16:30	MC Meeting Close	