



SPARC
Stratosphere-troposphere
Processes And their Role in Climate



SPARC WORKSHOP SHARP2016

Stratospheric Change and its Role for Climate Prediction

Berlin / Germany, 16 - 19 February 2016



© visitBerlin, Foto: Wolfgang Scholvien

TABLE OF CONTENTS

Welcome	1
About SHARP	2
Sponsors	3
Conference Organising Committee	4
Venue	5
Programme Overview	6
Conference Programme	7
Poster Schedule	16
General Information	19
Notes	24

WELCOME

Welcome to **SHARP2016**, welcome to Berlin!

On behalf of the Scientific and Local Organizing Committees it is our pleasure to welcome you to the SPARC Workshop **SHARP2016**!

The stratosphere is changing, as documented unambiguously in continuous observations of its composition, temperature and circulation. Since the detection of stratospheric ozone loss in the 1980s and an ongoing cooling of the stratosphere, understanding of the stratospheric response to anthropogenic emissions and climate change and its links to tropospheric weather and climate have become key issues of atmospheric research. This is reflected in the scientific themes of the World Climate Research Programme (WCRP) core project *Stratosphere-Troposphere Processes and their Role in Climate* (SPARC), and also in national activities, such as the German research programme *Stratospheric Change and its Role for Climate Prediction* (SHARP).

It is the goal of **SHARP2016** to contribute to an improved knowledge in the above research areas. Four aspects will be in the focus of interest: dynamical changes associated with the Brewer-Dobson circulation, the evolution of stratospheric ozone and its feedback with climate change, stratospheric water vapour changes, and the relevance of stratosphere-troposphere coupling for climate and weather.

We wish you exciting and inspiring days at the workshop, and an enjoyable stay in Berlin. Have a good time and take care!

We are looking forward to seeing you at **SHARP2016**!

Ulrike Langematz

John P. Burrows

Martin Dameris

Gabriele Stiller

STRATOSPHERIC CHANGE AND ITS ROLE FOR CLIMATE PREDICTION

The SPARC Workshop **SHARP2016** addresses the current status and future directions in the research area *Stratospheric Change and its Role for Climate Prediction* (SHARP).

SHARP2016 is initiated by the German research unit SHARP, which has been funded by the German Research Foundation between 2009 and 2015. Research in SHARP has been inspired and focused on the scientific themes of the World Climate Research Programme (WCRP) core project *Stratosphere-Troposphere Processes and their Role in Climate* (SPARC). Four specific research topics were selected by SHARP:

- **Brewer-Dobson Circulation**
- **Stratospheric Ozone**
- **Stratosphere-Troposphere Coupling**
- **Stratospheric Water Vapour.**

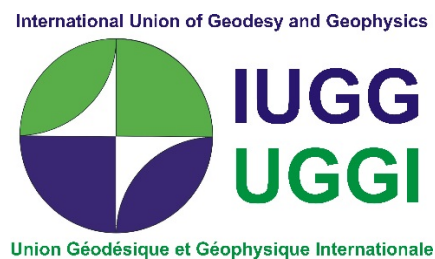
As the closing event of the SHARP programme, **SHARP2016** aims at fostering contacts and exchange between the international scientific community and the SHARP scientists. The goal is:

- to discuss the current research in the four SHARP topics,
- to present the progress achieved in SHARP in a broader international perspective, and
- to address open issues, needs and potential future research.

SPONSORS

OUR SPONSORS

We would like to acknowledge the following organisations for their support of the SPARC workshop **SHARP2016**:



CONFERENCE ORGANISING COMMITTEE

CONFERENCE CONVENORS

Ulrike Langematz (Freie Universität Berlin, chair)

John P. Burrows (Universität Bremen)

Martin Dameris (DLR Oberpfaffenhofen)

Gabriele Stiller (Karlsruhe Institut für Technologie)

SCIENTIFIC ORGANISING COMMITTEE

Ulrike Langematz (Freie Universität Berlin)

Harald Bönisch (Goethe Universität Frankfurt am Main)

John P. Burrows (Universität Bremen)

Martin Dameris (DLR Oberpfaffenhofen)

Neil Harris (University of Cambridge, co-chair of WCRP/SPARC)

Patrick Jöckel (DLR Oberpfaffenhofen)

Gabriele Stiller (Karlsruhe Institut für Technologie)

Hauke Schmidt (Max-Planck Institut für Meteorologie, Hamburg)

Mark Weber (Universität Bremen)

LOCAL ORGANISING COMMITTEE

Ulrike Langematz (chair)

Nicola Hoffleit

Catrin Gellhorn

Annette Angermüller

Joscha Pültz

Freie Universität Berlin

Institut für Meteorologie

Carl-Heinrich-Becker-Weg 6-10

12165 Berlin, Germany

Email: [sharp2016\(at\)met.fu-berlin.de](mailto:sharp2016(at)met.fu-berlin.de)

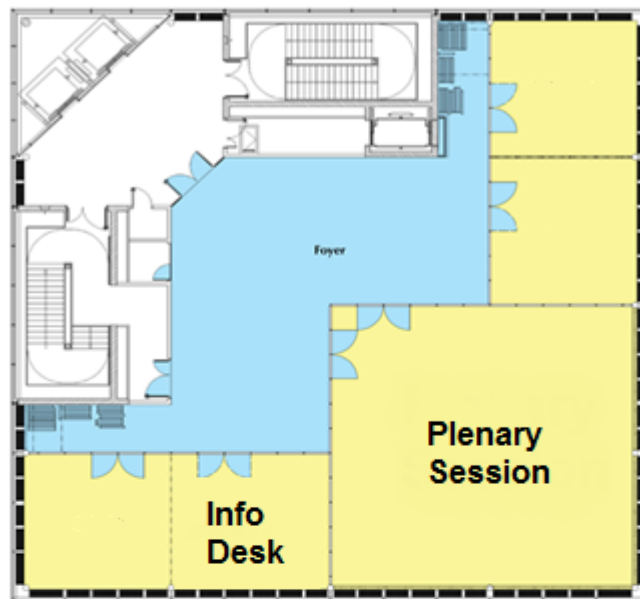
VENUE LAYOUT

SEMINARIS Campus Conference Center and Hotel Berlin

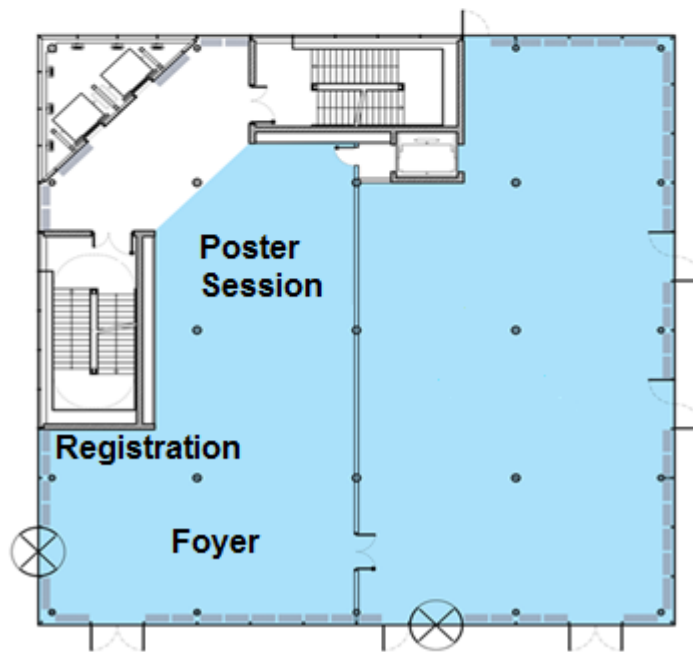
Takustraße 39

14195 Berlin

Tel.: +49 (0)30 557797-0



2nd floor



Ground floor

PROGRAMME OVERVIEW

	Monday 15.02.2016	Tuesday 16.02.2016	Wednesday 17.02.2016	Thursday 18.02.2016	Friday 19.02.2016
08:00					
08:30		Registration			
09:00			Stratosphere- Troposphere Coupling I	Ozone I	Water Vapour I
09:30		Opening Session	Coffee	Coffee	Coffee
10:00			Stratosphere- Troposphere Coupling II	Ozone II	Water Vapour II
10:30					
11:00		Brewer-Dobson Circulation I	Lunch	Lunch	Lunch
11:30					
12:00					
12:30					
13:00		Lunch			
13:30					
14:00		Poster Presentations	Poster Presentations	Poster Presentations	Session Summaries and Syntheses
14:30		Brewer-Dobson Circulation II	Stratosphere- Troposphere Coupling III	Ozone III	
15:00					
15:30		Coffee	Coffee	Coffee + Poster Session	End of Workshop
16:00					
16:30		Brewer-Dobson Circulation III	Stratosphere- Troposphere Coupling IV		
17:00					
17:30			Poster	Conference Dinner at Berliner Fernsehturm (end: 11 PM)	
18:00		Icebreaker			
18:30					
19:00					
19:30	Registration				
20:00					

CONFERENCE PROGRAMME

TUESDAY 16TH FEBRUARY

08:00 – 09:30	Registration
	Opening Session
09:30 – 09:35	Ulrike Langematz <i>Workshop Opening</i>
09:35 – 09:40	Ulrich Cubasch <i>Welcome address</i>
09:40 – 09:55	Peter Braesicke <i>The stratosphere: Learning from Karin Labitzke</i>
09:55 – 10:40	Opening lecture Neil Harris <i>The evolving science in WCRP/SPARC</i>
10:40 – 11:00	Ulrike Langematz <i>A SHARP story & Logistics</i>
	Brewer-Dobson Circulation I Chair: Martin Dameris
11:00 – 11:30	Keynote lecture Thomas Birner <i>Branching out: Brewer's versus Dobson's circulation</i>
11:30 – 11:45	Lisa Neef <i>Does data assimilation destroy or enhance the Tropopause Inversion Layer?</i>
11:45 – 12:00	Alison Ming <i>The link between the structure of the heating and upwelling in the tropical lower stratosphere</i>
12:00 – 12:15	Paul Konopka <i>Regionally resolved impact of ENSO on the variability of the Brewer-Dobson circulation and of water vapor entering the tropical lower stratosphere</i>
12:15 – 12:30	Axel Gabriel <i>Long-term changes in the three-dimensional Brewer-Dobson circulation</i>
12:30 – 12:45	Naftali Cohen <i>Characterizing structural changes of the stratospheric residual circulation in future climates</i>
12:45 – 13:00	Peter Hitchcock <i>Projected changes in radiative damping rates and radiative equilibrium temperature over the twenty first century</i>
13:00 – 14:00	Lunch

CONFERENCE PROGRAMME

14:00 – 14:30	Poster Presentations <u>Chair:</u> Harald Bönisch
	Brewer-Dobson Circulation II <u>Chair:</u> Harald Bönisch
14:30 – 14:45	Sophie Oberländer-Hayn <i>The effects of resolved and parameterized waves on the Brewer-Dobson circulation</i>
14:45 – 15:00	Hella Garny (<u>invited</u>) <i>Changes in the advective and mixing component of the Brewer-Dobson circulation in global models</i>
15:00 – 15:15	Andreas Engel <i>AIRCORE as a new tool to study stratospheric age of air</i>
15:15 – 15:30	Chaim Garfinkel <i>Is there a mismatch between observed and modelled age of air trends?</i>
15:30 – 15:45	Felix Ploeger <i>Characteristics of transport in the lower stratosphere inferred from the age of air spectrum</i>
15:45 – 16:00	Marianna Linz <i>Quantitative assessment of the variability of the diabatic circulation of the stratosphere from age of air data</i>
16:00 – 16:30	Coffee Break
	Brewer-Dobson Circulation III <u>Chair:</u> Thomas Birner
16:30 – 16:45	Prabir Patra <i>Brewer-Dobson circulation, age of air in stratosphere and distribution of trace gases</i>
16:45 – 17:00	Thomas von Clarmann <i>Direct Inversion of Circulation and Mixing from Tracer Measurements</i>
17:00 – 17:15	Mohamadou Diallo <i>Stratospheric circulation signal of the volcanoes for the 1989 to 2010 period</i>
17:15 – 17:30	René Hommel <i>Aerosol microphysics in the stratosphere</i>
17:30 – 17:45	Eric Ray <i>Better Validating Stratospheric Transport in Climate Models: The Case for Long-Term Profile Measurements of a Specific Suite of Trace Gases</i>
17:45 – 18:00	Ted Shepherd (<u>invited</u>) <i>The Climate Impact of Past Changes in Halocarbons and CO₂ in the Tropical UTLS Region</i>
18:00 – 20:00	Icebreaker

CONFERENCE PROGRAMME

WEDNESDAY 17TH FEBRUARY

	Stratosphere-Troposphere Coupling I <u>Chair:</u> Ulrike Langematz
08:30 – 09:00	Keynote lecture Mark Baldwin <i>Stratosphere–Troposphere Coupling</i>
09:00 – 09:15	Peter Hitchcock <i>Mechanisms for the Downward Influence of Stratospheric Sudden Warmings</i>
09:15 – 09:30	Dieter H.W. Peters <i>Links between boreal polar-night jet oscillations and geophysical fields</i>
09:30 – 09:45	Amanda Maycock <i>Do split and displacement sudden stratospheric warmings have different annular mode signatures?</i>
10:45 – 10:00	Kunihiko Kodera <i>Absorbing and reflecting sudden stratospheric warming events and their relationship with tropospheric circulation</i>
10:00 – 10:15	Martin Dameris <i>On the signature of the downward propagation of stratospheric extreme events to the troposphere</i>
10:15 – 10:30	Aditi Sheshadri <i>Stratospheric influences on the tropospheric jet: Impacts of stratospheric seasonal variability and ozone depletion</i>
10:30 – 10:45	Sabine Haase <i>The importance of interactive stratospheric chemistry on the tropospheric jet variability under climate change</i>
10:45 – 11:15	Coffee Break
	Stratosphere-Troposphere Coupling II <u>Chair:</u> Blanca Ayarzagüena
11:15 – 11:30	Natalia Calvo (<i>invited</i>) <i>On the surface impact of Arctic ozone extremes</i>
11:30 – 11:45	Diane Ivy <i>Observed connections of Arctic ozone extremes to Northern Hemisphere Climate</i>
11:45 – 12:00	Irina Petropavlovskikh <i>Boulder ozone sonde data analyses for multiple tropopause origins</i>

CONFERENCE PROGRAMME

12:00 – 12:15	Fiona Tummon <i>Diagnosing changes in European tropospheric ozone: A model study of past and future changes</i>
12:15 – 12:30	Stefanie Meul <i>Future changes in stratosphere-troposphere exchange of ozone and the contribution from climate change</i>
12:30 – 12:45	Mohamadou Diallo <i>Diagnosis of the Upper Troposphere-Stratosphere exchanges using CO₂ tracer gas</i>
12:45 – 13:00	Chaim Garfinkel <i>Drivers of the recent tropical expansion in the Southern Hemisphere: Changing SSTs or ozone depletion?</i>
13:00 – 14:00	Lunch
14:00 – 14:30	Poster Presentations Chair: Hauke Schmidt
	Stratosphere-Troposphere Coupling III Chair: Edwin Gerber
14:30 – 14:45	Blanca Ayarzagüena (<i>invited</i>) <i>Response of sea surface temperature to climate change and its influence on the wintertime polar vortex in CMIP5 and chemistry-climate models</i>
14:45 – 15:00	Nour-Eddine Omrani <i>Wintertime response of the coupled stratosphere/troposphere system to the large-scale Atlantic decadal variability</i>
15:00 – 15:15	Rongcai Ren <i>The competing effect of the tropical Indian Ocean SST forcing on the northern winter stratosphere during ENSO</i>
15:15 – 15:30	Fumiaki Ogawa <i>Importance of mid-latitude oceanic frontal zone and associated baroclinic eddies on the ozone-induced stratosphere/troposphere coupling</i>
15:30 – 15:45	Fabian Wunderlich <i>Influence of the Madden-Julian Oscillation on the boreal winter stratosphere</i>
15:45 – 16:00	Ulrike Langematz <i>Southern Hemisphere sea ice trends: How well do model simulations explain the observed changes?</i>
16:00 – 16:30	Coffee Break
	Stratosphere-Troposphere Coupling IV Chair: Natalia Calvo

CONFERENCE PROGRAMME

16:30 – 16:45	Edwin Gerber (<u>invited</u>) <i>The tropical tropopause layer in an idealized moist model: Tropical vs. extratropical control</i>
16:45 – 17:00	Robin Pilch Kedzierski <i>The Tropical Tropopause Inversion Layer: Variability and Forcing by Equatorial Waves</i>
17:00 – 17:15	Wuke Wang <i>Decadal variability of tropical tropopause temperatures and its relation to the Pacific Decadal Oscillation</i>
17:15 – 17:30	Vinay Kumar <i>Impact of different phases of QBO over temperature in the tropopause region: Focus on the tropical dynamics</i>
17:30 – 17:45	Catrin Gellhorn <i>Radiative and dynamical temperature changes in the middle atmosphere in a future climate</i>
17:45 – 18:00	Michael Ponater <i>Ozone radiative feedback in global warming simulations with CO₂ and non-CO₂ forcing</i>
18:00 – 20:00	Poster Session

CONFERENCE PROGRAMME

THURSDAY 18TH FEBRUARY

	Ozone I Chair: Mark Weber
08:30 – 09:00	Keynote lecture Wolfgang Steinbrecht <i>Observed and modelled long-term changes of the ozone layer</i>
09:00 – 09:15	Sophie Godin-Beekmann (<u>invited</u>) <i>Recent ozone trends at Northern Mid-latitudes</i>
09:15 – 09:30	Melanie Coldewey-Egbers <i>The ESA-CCI total ozone climate data record 1995-2015: investigation of long-term trends and variability</i>
09:30 – 09:45	Robert Damadeo <i>An improved technique for deriving long-term trends in ozone</i>
09:45 – 10:00	Pawan Bhartia (<u>invited</u>) <i>Trials and tribulations in creating long-term ozone record to detect anthropogenic change</i>
10:00 – 10:15	Stefan Bötzel <i>Validation of the University of Bremen (IUP) GOME/SCIAMACHY long-term nadir ozone profile dataset and inter-comparison with the SBUV/2 long-term data record</i>
10:15 – 10:30	Daan Hubert <i>On the confidence in S12N vertical ozone profile trend assessments</i>
10:30 – 11:00	Coffee Break
	Ozone II Chair: Klaus Pfeilsticker
11:00 – 11:15	Roeland Van Malderen <i>On instrumental errors and related correction strategies of ozonesondes: possible effect on calculated ozone trends for the nearby sites Uccle and De Bilt</i>
11:15 – 11:30	Johannes Staehelin <i>The value of Swiss long-term ozone measurements for atmospheric research</i>
11:30 – 11:45	Philippe Keckhut <i>Have stratospheric temperature trends changed in the last decade?</i>

CONFERENCE PROGRAMME

11:45 – 12:00	Martyn Chipperfield (<u>invited</u>) <i>Recent changes in stratospheric composition due to and despite the Montreal Protocol</i>
12:00 – 12:15	Donal Murtagh (<u>invited</u>) <i>Ozone and related species in the stratosphere</i>
12:15 – 12:30	Mark Weber <i>Stability requirements on long-term (satellite) ozone observations and their implication for trend detection</i>
12:30 – 12:45	Toshihiko Hirooka <i>Interannual changes of stratospheric ozone and their relationship to dynamical processes</i>
12:45 – 13:00	John P. Burrows <i>Recent studies of stratospheric ozone and related measurements using SCIAMACHY</i>
13:00 – 14:00	Lunch
14:00 – 14:30	Poster Presentations Chair: Björn-Martin Sinnhuber
	Ozone III Chair: John P. Burrows
14:30 – 14:45	Bodo Werner <i>Probing the tropical tropopause layer for organic and inorganic bromine</i>
14:45 – 15:00	Gaétane Ronsmans <i>Spatial and temporal variability of stratospheric HNO₃ and O₃ from IASI global measurements</i>
15:00 – 15:15	Stefanie Falk <i>Modelling oceanic emissions of brominated very short-lived substances under a changing climate: Stratospheric bromine budget and the impact on ozone.</i>
15:15 – 15:30	Peter Braesicke <i>ENSO effects on stratospheric trace gases: How do we capture reality?</i>
15:30 – 15:45	Martin Budde <i>Change in Polar Stratospheric Ozone due to Dynamics, ODS and Climate Change</i>
15:45 – 16:00	Markus Rex (<u>invited</u>) <i>Ozone recovery and climate change: Towards an interactive representation of stratospheric ozone in Earth System Models</i>
16:00 – 17:30	Coffee Break & Poster Session
17:30 – 23:00	Bus from SEMINARIS Hotel to Conference Dinner at “Berliner Fernsehturm”

CONFERENCE PROGRAMME

FRIDAY 19TH FEBRUARY

	Water Vapour I Chair: Patrick Jöckel
08:30 – 09:00	Keynote lecture Stephan Fueglistaler <i>Stratospheric water vapor - progress, regress and digress</i>
09:00 – 09:15	Holger Vömel (<u>invited</u>) <i>Water vapor in the tropical tropopause region and tropical stratosphere</i>
09:15 – 09:30	Dale Hurst <i>36 Years of Stratospheric Water Vapor Measurements over Boulder, Colorado: Lessons Learned for the Future</i>
09:30 – 09:45	Karen Rosenlof (<u>invited</u>) <i>The SPARC Water Vapour Assessment-II</i>
09:45 – 10:00	Stefan Lossow <i>Variability of stratospheric water vapour in observations and simulations</i>
10:00 – 10:15	Gabriele Stiller <i>Is there a solar signal in lower stratospheric water vapour?</i>
10:15 – 10:30	Katja Weigel <i>SCIAMACHY limb water vapour results from SHARP</i>
10:30 – 11:00	Coffee Break
	Water Vapour II Chair: Gabriele Stiller
11:00 – 11:15	Michaela Hegglin (<u>invited</u>) <i>Water vapour as indicator of stratospheric circulation changes</i>
11:15 – 11:30	Patrick Jöckel <i>Impact of major volcanic eruptions on stratospheric water vapor</i>
11:30 – 11:45	Martin Riese (<u>invited</u>) <i>Dynamical processes and transport influencing the water vapour budget in the upper troposphere / lower stratosphere (UTLS)</i>
11:45 – 12:00	Markus Kunze <i>The influence of the Asian summer Monsoon, ENSO, and the QBO on the boreal summer UTLS temperatures, water vapour and ozone mixing ratios</i>
12:00 – 12:15	Roland Eichinger <i>Investigation of stratospheric HDO/H₂O variations in EMAC model simulations</i>

CONFERENCE PROGRAMME

12:15 – 12:30	Andrea Stenke <i>The role of methane in projections of stratospheric water vapor trends</i>
12:30 – 12:45	Andrew Dessler <i>What drives water vapor trends in CCMs?</i>
12:45 – 13:00	Group Photo
13:00 – 14:00	Lunch
	Closing Session <u>Chair: Ulrike Langematz</u>
14:00 – 14:25	Thomas Birner, Hella Garny, and Sophie Oberländer-Hayn <i>Summary and Synthesis of BDC Session</i>
14:25 – 14:50	Edwin Gerber, Blanca Ayarzagüena, and Peter Hitchcock <i>Summary and Synthesis of STC Session</i>
14:50 – 15:15	Sophie Godin-Beekmann, Stefanie Meul, and Martin Budde <i>Summary and Synthesis of Ozone Session</i>
15:15 – 15:40	Martin Riese, Andrea Stenke, and Stefan Lossow <i>Summary and Synthesis of Water Vapour Session</i>
15:45 – 16:00	Ulrike Langematz <i>Closing of workshop</i>

POSTER SCHEDULE

POSTER SESSION I

Wednesday 17th February, 18 - 20 pm

Brewer-Dobson Circulation

FIRST AUTHOR (PRESENTER)	ABSTRACT TITLE
Bunzel, Felix	<i>The Brewer-Dobson Circulation in a changing climate: Trend versus natural variability</i>
Dietmüller, Simone	<i>Effects of residual transport and mixing on the simulation of stratospheric Age of Air</i>
Eichinger, Roland	<i>A regional modelling perspective on the significance of gravity wave activity in a changing climate</i>
Galytska, Evgenia	<i>Reinvestigation of the stratospheric age of air in the Bremen CTM</i>
Gassmann, Almut	<i>Diagnosing the residual circulation: residual winds, mean deviations of balanced winds, and mean winds perpendicular to iso-tracer surfaces</i>
Haenel, Florian	<i>Reassessment of MIPAS age of air trends and variability</i>
Harris, Neil	<i>The SPARC Implementation Plan: 2016-2020</i>
Ostermüller, Jennifer	<i>The application of fractional release factors in stratospheric chemistry and dynamics</i>
Reddmann, Thomas	<i>The representation of the upper branch of the BDC in a 3D-CTM and its impact on mean age simulations</i>
Šácha, Petr	<i>Influence of spatial distribution of the gravity wave activity on the middle atmospheric circulation and transport.</i>
Shibata, Kiyotaka	<i>Long-term variations of the equatorial quasi-biennial oscillation in ERA-40 and ERA-Interim data</i>

POSTER SCHEDULE

Stratosphere-Troposphere Coupling

FIRST AUTHOR (PRESENTER)	ABSTRACT TITLE
Scheffler, Janice (Ayarzagüena, Blanca)	<i>Elevated Stratopause Events in the current and a future climate: A Chemistry-Climate Model study</i>
Chavez Perez, Victor Manuel (Diallo, Mohamadou)	<i>Differences in the detection and classification of the Stratospheric Sudden Warming over the three reanalyses for the period 1979-2014</i>
Chavez Perez, Victor Manuel (Diallo, Mohamadou)	<i>Changes in the stratosphere before and after Stratospheric Sudden Warming events in the different phases of the equatorial QBO</i>
Dhaka, Surendra	<i>Impact of sudden stratospheric warming (SSW) over tropical region: A study using COSMIC/ FORMOSAT-3 observations</i>
Domeisen, Daniela	<i>Using teleconnections to predict the weather in Europe – theory and application</i>
Karami, Khalil	<i>Triggering of the tropospheric baroclinicity by the persistent stratospheric wind regimes</i>
Kozubek, Michal	<i>Long-term trend in the stratosphere</i>
Pültz, Joscha	<i>Impact of climate change on stratosphere-troposphere coupling – a study with the chemistry-climate model EMAC</i>
Rao, Jian	<i>Asymmetry and nonlinearity of ENSO's influence on the northern winter stratosphere</i>
Rea, Gloria	<i>Atmospheric long-term changes in the Southern Hemisphere simulated by CMIP5 models</i>
Schneidereit, Andrea	<i>The pre-phase of major sudden stratospheric warmings (MSSW) and the cold phase of ENSO: mean perspective and case study of 2009</i>

POSTER SCHEDULE

Water Vapour

FIRST AUTHOR (PRESENTER)	ABSTRACT TITLE
Brinkop, Sabine	<i>The millennium water vapour drop in the stratosphere in chemistry-climate model simulations</i>
Brühl, Christoph	<i>Stratospheric water vapour simulated by EMAC including volcanic aerosol</i>

POSTER SESSION II

Thursday 18th February, 16:00 – 17:30 pm

Ozone

FIRST AUTHOR (PRESENTER)	ABSTRACT TITLE
Kirner, Ole	<i>Chemistry–climate interactions of stratospheric and mesospheric ozone in EMAC long-term simulations with different boundary conditions for CO₂, CH₄, N₂O, and ODS</i>
Kreyling, Daniel	<i>Fast stratospheric ozone chemistry for global climate models: The extra-polar SWIFT module</i>
Wohltmann, Ingo (Kreyling, Daniel)	<i>Fast stratospheric ozone chemistry for climate models: The polar SWIFT model</i>
Sofieva, Viktoria (Laeng, Alexandra)	<i>On small-scale variability of ozone in the stratosphere</i>
Laeng, Alexandra	<i>Large-scale variability of ozone in the stratosphere</i>
Lubis, Sandro	<i>How does downward planetary wave coupling affect polar stratospheric ozone in the Arctic winter stratosphere?</i>
Maillard Barras, Eliane	<i>Annual and seasonal variations of the diurnal cycle of stratospheric ozone measured by microwave radiometer</i>
Maycock, Amanda	<i>The radiative heating response to climate change</i>
Meul, Stefanie	<i>Effect of future increase in nitrous oxide on stratospheric ozone</i>
Gorshchev, Victor (Weber, Mark)	<i>Improved ozone absorption cross-sections in the Hartley-Huggins bands</i>
Stergios Misios	<i>Influences of different solar irradiance spectra on the simulated mean state of the stratosphere</i>

GENERAL INFORMATION

If you require further assistance, please visit the information desk and we will do our very best to help you.

ABSTRACTS

We are not providing a printed version of the abstracts. All abstracts are on the USB drive in your registration pack, ordered by session and surname of the first author.

CATERING

All morning and afternoon coffees, the icebreaker and conference dinner are included in the registration fee. The morning and afternoon coffees will be served on the 2nd floor.

An icebreaker reception will be held on Tuesday (16th February) evening in the foyer at the SEMINARIS Conference Center Berlin between 18:00 and 20:00.

CONFERENCE DINNER

A conference dinner will be held on Thursday (18th February). A bus will pick us up in front of the Seminaris Conference Center (main hotel entrance Takustraße) at 17:30 (5:30 PM) and take us on a short sightseeing tour through Berlin. We will stop at the highest building in Berlin, the “Berliner Fernsehturm“ (Berlin TV tower), where we will have the conference dinner in the restaurant “Sphere“ in 207 meter height.

EMERGENCY INFORMATION

Police	110
Ambulance, Fire	112

In the unlikely case of an emergency, please leave the building by the closest marked exit and follow the instructions of the hotel staff.

GENERAL INFORMATION

GRANT RECIPIENTS

All recipients of travel support are kindly asked to register at the on-site registration desk and then visit the workshop office to proceed with their grant administration.

INFORMATION DESK

The information desk will be located on the same floor as the main lecture hall, and will be open during the following hours:

Monday	17:00 – 19:00
Tuesday - Wednesday	08:00 – 20:00
Thursday - Friday	08:00 – 17:00

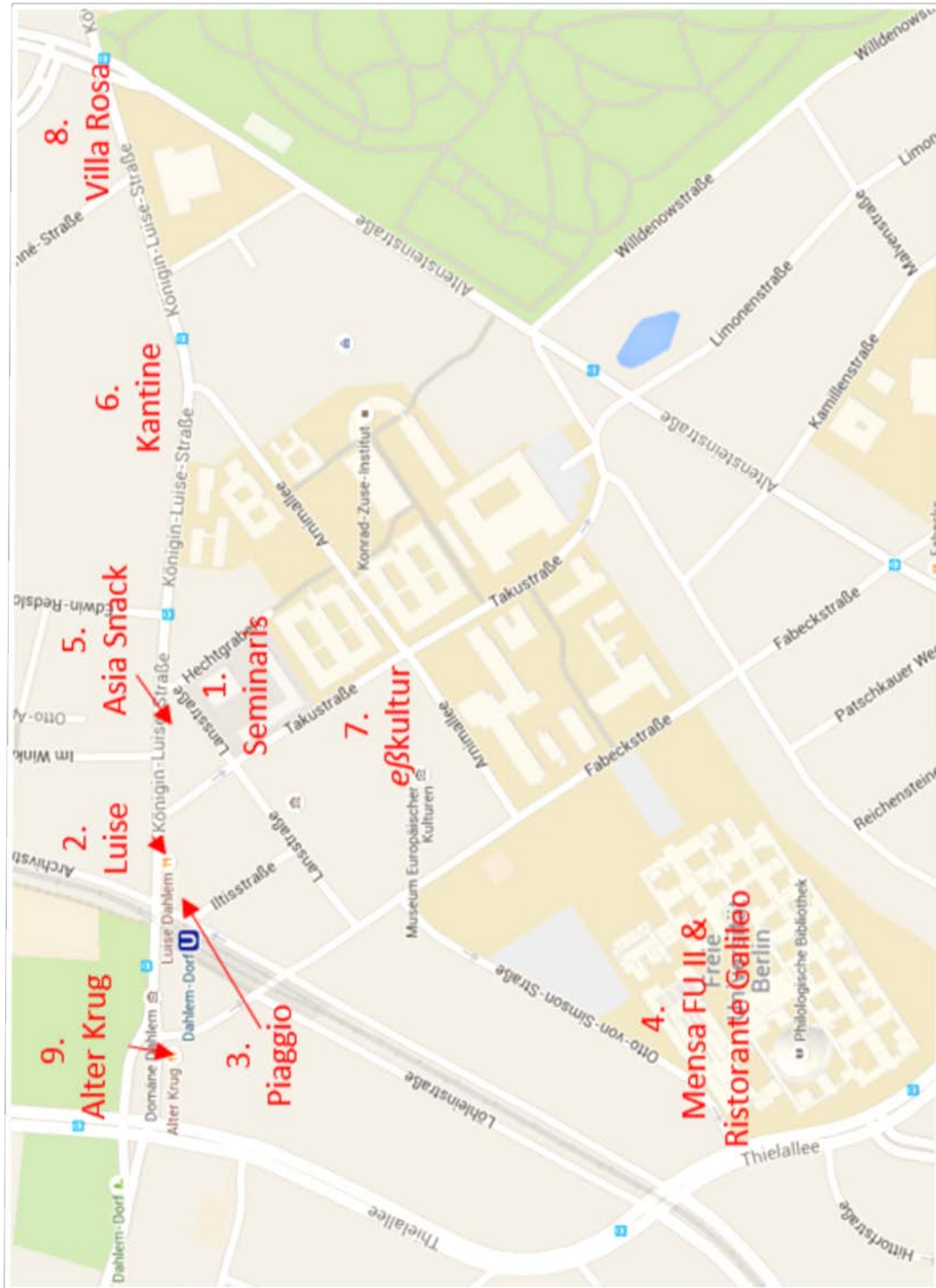
INTERNET

The WIFI key is provided with your badge.

GENERAL INFORMATION

LUNCH

Lunch is offered in the SEMINARIS Campus Hotel (not included in the registration fee).
Other restaurants, bistros and pubs in the area are:



GENERAL INFORMATION

1. SEMINARIS CampusHotel, Takustraße 39, 14195 Berlin
http://www.seminaris.de/fileadmin/sehoko/download/scb/pdf/Seminaris_Berlin_Speisenkarte_0615.pdf
2. Luise Dahlem, Königin-Luise-Straße 40-42, 14195 Berlin
<http://www.luise-dahlem.de/index.php/essen-trinken>
3. Restaurant Piaggio, Königin-Luise-Straße 44, 14195 Berlin
<http://www.ristorante-piaggio.de/>
4. Mensa FU II, Otto-von-Simson-Straße 26, 14195 Berlin
<http://www.studentenwerk-berlin.de/mensen/speiseplan/fu2/index.html>
5. Asia Snack Dahlem, Königin-Luise-Straße 38, 14195 Berlin
<http://www.asiasnack-dahlem.de/>
6. Kantine im Julius Kühn-Institut, Königin-Luise-Straße 19, 14195 Berlin
<http://www.el-okle.de/Downloads/elokle.pdf>
7. eßkultur in den Museen Dahlem, Lansstraße 8, 14195 Berlin (Kantine)
8. Restaurant Villa Rosa, Königin-Luise-Straße 11, 14195 Berlin
<http://www.villa-rosa-restaurant.de/joomla/index.php/2-uncategorised/4>
9. Alter Krug, Königin-Luise-Straße 52, 14195 Berlin
<http://alter-krug-berlin.de/>

MOBILE PHONES

Out of respect to the speakers and other delegates, please ensure your mobile phone is on silent mode or switched off during all oral presentations.

POSTER PRESENTATION

Posters can be displayed on all conference days. Short oral introductions to the posters of max. 2 minutes are encouraged. The oral poster presentations will take place at the beginning of the afternoon sessions. In addition, the poster authors should be present at their posters during the poster sessions:

- Wednesday, 18:00-20:00: BDC, STC and water vapour
- Thursday, 16:00-17:30: Ozone

Posters are best printed in DIN A0 format (841 x 1189mm paper size), portrait orientation. Removable sticky tape and pins for the poster walls will be provided.

GENERAL INFORMATION

PUBLIC TRANSPORT

The SEMINARIS Conference Center and Hotel can be reached by subway or bus:

- subway: U3 (stop Dahlem-Dorf)
- bus: X83 (bus stop Museen Dahlem).

Tickets can be bought from the bus driver. Fare for a single ticket within Berlin sector AB: 2.70 € (short-trip ticket* 1,60 €).

For more information on public transport in Berlin (BVG) please visit the website below:

<http://fahrinfo.bvg.de/Fahrinfo/bin/query.bin/dn?&ujm=1>

English version of the website:

<http://fahrinfo.bvg.de/Fahrinfo/bin/query.bin/en?>

*short-trip ticket:

- up to 3 stations on the metro (U-Bahn) or urban rail (S-Bahn) – transfers permitted or
- up to 6 stops on the bus or tram – transfers not permitted.

SPEAKER PREPARATION

If you have an oral presentation and have not uploaded your slideshow presentation before the meeting, please do this at the frontdesk in the plenary room at least six hours before your scheduled talk. The technical assistant will be available to upload your presentation during breaks.

TAXI CALL

There are several taxi companies in Berlin. A few are listed below:

CABCALL	0800 / 2222255
Taxi-Berlin	030 / 202020
WürfelFunk	0800 / 210101

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES