



Academic chairs:

Professor Dr. Adam Bourassa (Saskatoon)
Professor Dr. John Burrows (Bremen)
Professor Dr. Yasuko Kasai (Tokyo)
Professor Dr. Erkki Kyrölä (Helsinki)
Dr. Nathaniel Livesey (Pasadena)
Professor Dr. Donal Murtagh (Gothenburg)
Professor Dr. Christian von Savigny (Greifswald)

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The International Conference is funded by the
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Essen.

The Alfried Krupp Wissenschaftskolleg is an
academically independent institution sponsored by
the Stiftung Alfried Krupp Kolleg.

2.45 pm – 3.00 pm
Solving non-LTE problems in rotational transitions using the Gauss-Seidel method and its implementation in the Atmospheric Radiative Transfer Simulator
Takayoshi Yamada (Tokyo)

Validation Studies

3.00 pm – 3.15 pm
The Atmospheric Chemistry Experiment (ACE) Satellite: Recent Validation Results
Kaley A. Walker (Toronto)
3.15 pm – 3.30 pm
Intercomparison of Active Satellite Observations with SAGE III ISS
Kevin R. Leavor (Hampton)
3.30 pm – 3.45 pm
Validation of SAGE III-ISS V5.1 solar ozone data
H. J. Ray Wang (Atlanta)
3.45 pm – 4.00 pm
Validation of SCIAMACHY limb NO₂ scientific data V4.0, its changes in the stratosphere and their impact on O₃ chemistry in the tropical region
Evgenia Galytska (Bremen)

4.00 pm – 4.30 pm
Coffee Break

4.30 pm – 5.45 pm
Session 9: Agencies, programs and projects
Chair: Yasuko Kasai

4.30 pm – 4.45 pm
CSA Atmospheric Science Satellite Missions
Marcus Dejmek (Cambridge)

4.45 pm – 5.00 pm
The ESA Water Vapour Climate Change Initiative
Michaela I. Hegglin (Reading)

5.00 pm – 5.15 pm
Update of the SPARC Data Initiative for 2002–2018
Susann Tegtmeier (Kiel)

5.15 pm – 5.30 pm
A new Concept SLIPSTREAM/SCIA-L2
John Burrows (Bremen)

5.30 pm – 5.45 pm
Retrieval of stratospheric aerosol size properties from GOMOS: Current status
Christine Bingen (Bruxelles)

5.45 pm – 6.15 pm
Concluding discussions and remarks

Friday, 7 June 2019

9.00 am – 12.30 pm

Group discussions at the Institute for Physics
Felix-Hausdorff-Straße 6, 17489 Greifswald

Posters

Calibration System of Terahertz Explorer-1 instrument for Mars Atmospheric Observation
Yuki Uchiyama (Tokyo)

Signatures of the Madden-Julian Oscillation in Middle Atmosphere Temperature from Aura MLS
Christoph G. Hoffmann (Greifswald)

A comparison of lognormal and gamma size distributions for characterizing the stratospheric aerosol phase function from OPC measurements
Ernest Nyaku (Hampton)

Revisiting Stratospheric Aerosol Climatology for the post-SAGEII era using Space-based Measurements
Mahesh Kovilakam (Hampton)

Retrieval of particle size distribution parameters of stratospheric aerosol using solar occultation measurements of SAGE III on ISS.

Felix Wrana (Greifswald)

Aerosol Product Validation for the Stratospheric Aerosol and Gas Experiment III (SAGE-III) installed on the International Space Station (ISS)
Travis Knepp (Hampton)

Challenges in retrieving stratospheric aerosol extinction and particle size from RMR-LIDAR observations
Jacob Zalach (Greifswald)

The DFG Research Unit VollImpact: Revisiting the volcanic impact on atmosphere and climate
Christian von Savigny (Greifswald)

WFDOAS total column ozone retrieval from OMPS/NPP in preparation for tropospheric ozone retrieval using the limb-nadir technique
Andrea Orfanou-Chequelef (Bremen)

Stratospheric Aerosol and Gas Experiment III on the International Space Station (SAGE III/ISS) Science Data Ozone Product: Preliminary Validation Results
Susan Kizer (Hampton)

An initial evaluation of ozone data quality from SAGE III/ISS v5.1
Rob Damadeo (Hampton)

Evaluation of the SAGE III/ISS Water Vapor Retrieval
David Huber (Hampton)

The Vertical Profile of HCl from Stratosphere to Lower Thermosphere Observed by SMILES
Seidai Nara (Tokyo)

High-resolution temperature profiles retrieved from bi-chromatic stellar scintillation measurements by GOMOS/Envisat
Viktoria Sofieva (Helsinki)

Odin/SMR long-term measurements of Carbon Monoxide in the Middle Atmosphere
Francesco Grieco (Gothenburg)

Solar heating rates derived from SCIAMACHY observations of the O₂(1Sigma) and O₂(1Delta) airglow
Miriam Sinnhuber (Karlsruhe)

Modeling of molecular and atomic oxygen photochemistry on the basis of multiple in situ and limb nightglow emissions
Oleksandr Lednyts'kyj (Greifswald)

Alfried Krupp Wissenschaftskolleg Greifswald

The Alfried Krupp Wissenschaftskolleg is an academically independent institution sponsored by the Stiftung Alfried Krupp Kolleg Greifswald. The initiative to establish the Alfried Krupp Wissenschaftskolleg came from the Chairman of the Board of Trustees of the Alfried Krupp von Bohlen und Halbach-Stiftung, Professor Dr. h. c. mult. Berthold Beitz. Professor Beitz associated this initiative with the idea that an institute for advanced study in the Hanseatic and university city of Greifswald could assist Greifswald to become once again the „liberal, cosmopolitan centre for encounters in the Baltic Sea region“ that it used to be for centuries. The Alfried Krupp Wissenschaftskolleg is committed to this goal.



Alfried Krupp Wissenschaftskolleg
Greifswald



UNIVERSITÄT GREIFSWALD
Wissen lockt. Seit 1456

10th International Limb Workshop

International Conference
4 – 7 June 2019



Monday, 3 June 2019

6.00 pm
Icebreaker and Reception at the Campo Alegre
Lange Reihe 1, 17489 Greifswald

Tuesday, 4 June 2019

8.30 am – 9.15 am
Welcome
8.30 am – 8.35 am
Welcome by local organizers
Christian von Savigny (Greifswald)
8.35 am – 8.45 am
Welcome address by representative of the City of Greifswald
Jeanette von Busse (Greifswald)
8.45 am – 8.55 am
Welcome address by University administration
Katharina Riedel (Greifswald)
8.55 am – 9.05 am
Welcome address by the Academic coordinator of the Alfred Krupp Institute for Advanced Study
Christian Suhm (Greifswald)

9.05 am – 9.15 am
Logistics
Christian von Savigny (Greifswald)

9.15 am – 10.30 am
Session 1: New Missions and Mission Concepts
Chair: Christian von Savigny

9.15 am – 9.45 am
Forthcoming limb observations with ALTIUS
Didier Fussen (Bruxelles)

9.45 am – 10.00 am
The Canadian Atmospheric Tomography System (CATS) – The Next Generation OSIRIS Instrument
Nick Lloyd (Saskatoon)

10.00 am – 10.15 am
Stratospheric Aerosol and Gas Experiment (SAGE) III installed on the International Space Station (ISS): Mission overview and Science Data Product Validation
Marilee Roell (Hampton)

10.15 am – 10.30 am
MASTAR: Limb Scattering Measurements of Stratospheric Aerosols
Matthew DeLand (Lanham)

10.30 am – 11.00 am
Coffee break

11.00 am – 1.00 pm
Session 2: New Missions and Mission Concepts
Chair: Adam Bourassa

11.00 am – 11.25 am
MIGHTI (Michelson Interferometer for Global High-resolution Thermospheric Imaging): The Wind and Temperature Instrument Onboard the NASA Ionospheric Connection (ICON) Mission
Christoph R. Englert (Washington)
11.25 am – 11.50 am
MATS – a micro satellite for studies of Mesospheric Airglow/aerosol by Tomography and Spectroscopy
Donal Murtagh (Gothenburg)

11.50 am – 12.15 pm
SIW: a New Satellite Mission to Explore Middle Atmospheric Wind Structure and Composition
Kristell Péro (Gothenburg)

12.15 pm – 12.30 pm
Limb Emission Imaging, the Key to Fully Resolved Upper Atmosphere Dynamics.
Larry Gordley (Newport News)

12.30 pm – 12.45 pm
Wind, temperature and constituent observations with a Field Widened Michelson Interferometer
William E. Ward (Fredericton)

12.45 am – 1.00 pm
Terahertz Explorer-1 for Mars Atmospheric Observation
Yasuko Kasai (Tokyo)

1.00 pm – 2.00 pm
Lunch Break

2.00 pm – 3.30 pm
Session 3: Upper Tropo-/lower Stratosphere
Chair: Yasuko Kasai

2.00 pm – 2.15 pm
Merging Satellite and Sonde Data for Ozone Trend Analysis – What Can We Do in the UTLS?
Doug Degenstein (Saskatoon)

2.15 pm – 2.30 pm
MAESTRO upper tropospheric water vapour: Comparisons with other satellites and ground-based instruments
Christopher E. Sioris (Toronto)

2.30 pm – 2.45 pm
Recent trends in atmospheric concentrations of HCFCs
Patrick Sheese (Toronto)

2.45 pm – 3.00 pm
Pollution trace gas distributions in the Asian monsoon UTLS derived from measurements of the airborne imaging limb-sounder GLORIA during the StratoClim campaign
Sören Johansson (Karlsruhe)

3.00 pm – 3.15 pm
Phosgene in the upper troposphere and lower stratosphere: a marker for product gas injection due to chlorine-containing very short-lived substances
Jeremy J. Harrison (Leicester)

3.15 pm – 3.30 pm
Characterization of Aerosol and Clouds in the Upper Troposphere and Lower Stratosphere using Infrared Limb Emission Measurements
Sabine Grießbach (Jülich)

3.30 pm – 4.00 pm
Coffee break

4.00 pm – 6.00 pm
Poster Session

7.00 pm – 8.00 pm
Public Key Note Lecture
Air Quality in the Anthropocene Era – A Satellite Perspective
Pawan K. Bhartia (Greenbelt)

Moderation: Christian von Savigny

Wednesday, 5 June 2019

8.30 am – 10.30 am
Session 4: Aerosols and Clouds
Chair: Christian von Savigny

8.30 am – 8.45 am
Advances on Tomographic Cloud Extinction Retrievals for GLORIA and AtmoSAT
Jörn Ungermann (Jülich)

8.45 am – 9.00 am
Clouds and OMPS Limb Profiler: Cirrus, PSC, PMC, and More
Matthew DeLand (Lanham)

9.00 am – 9.15 am
OMPS-LP Observations of the Stratospheric Injection of Massive Smoke Plume from Canadian Boreal Fires in 2017
Omar Torres (Hampton)

9.15 am – 9.30 am
Forest fires, volcanic eruptions, and climate modelling: an update on OSIRIS and OMPS-LP stratospheric aerosol data records
Adam Bourassa (Saskatoon)

9.30 am – 9.45 am
Development of the OMPS LP Version 2 Aerosol Extinction Coefficient Retrieval Algorithm
Robert Loughman (Hampton)

9.45 am – 10.00 am
Overview of OMPS LP Aerosol Extinction Measurements

Ghassan Taha (Hampton)

10.00 am – 10.15 am
Stratospheric aerosol particle size distribution from SCIAMACHY Limb data
Elizaveta Malinina (Bremen)

10.15 am – 10.30 am
Exploration of Polar Stratospheric Clouds with IR limb measurements: Where we are and where we go
Reinhold Spang (Jülich)

10.30 am – 11.00 am
Coffee break

11.00 am – 12.30 pm
Session 5: Stratosphere
Chair: Erkki Kyrölä

11.00 am – 11.30 am
The use of satellite limb observations of the stratosphere in NASA's reanalyses
Kris Wargan (Hampton)

11.30 am – 11.45 am
Improved global distributions of SF6 and mean age of stratospheric air by use of new spectroscopic data
Carlo Arosio (Bremen)

9.30 am – 9.45 am
Version 4 retrievals for the Atmospheric Chemistry Experiment
Gabriele P. Stiller (Karlsruhe)

11.45 am – 12.00 pm
Is Limb Scattering a Viable Low-cost Technique for Monitoring Stratospheric Change?
Pawan K. Bhartia (Greenbelt)

9.45 am – 10.00 am
Diurnal variation of oxygen isotopic enrichments of asymmetric heavy ozone observed by SMILES
Tomohiro Sato (Tokyo)

12.00 pm – 12.15 pm
Limb scatter retrievals from SAGE III/ISS
Glen Jaross (Hampton)

12.15 pm – 12.30 pm
Accounting for polar mesospheric clouds in the retrieval of ozone vertical distributions from space borne limb-scatter measurements
Alexei Rozanov (Bremen)

12.30 pm – 1.30 pm
Lunch Break

1.30 pm – 7.00 pm
Excursion to Peenemünde

Transport by bus, further information can be found at the reception desk

7.30 pm
Dinner at the Brasserie Hermann
Gützkower Straße 1, 17489 Greifswald

Thursday, 6 June 2019

8.30 am – 10.30 am
Session 6: Stratosphere
Chair: John Burrows

8.30 am – 8.45 am
Stratospheric aerosol particle size distribution from SCIAMACHY Limb data
Elizaveta Malinina (Bremen)

10.15 am – 10.30 am
Analysis of the 7-year ozone profile record from OMPS Limb Profiler
Natalya Kramarova (Hampton)

8.45 am – 9.00 am
Ozone trends in the stratosphere and mesosphere determined by Dynamic Linear Model
Erkki Kyrölä (Helsinki)

9.00 am – 9.15 am
Creating long-term climate data records using transfer functions: methodology and application for SAGE II, MIPAS and OMPS ozone profile datasets
Alexandra Laeng (Karlsruhe)

11.45 am – 12.00 pm
Middle atmosphere ionization from particle precipitation as observed by the SSUSI satellite instruments
Stefan Bender (Trondheim)

12.00 pm – 12.15 pm
Investigating the excitation mechanism of the sodium D-line emissions
Julia Koch (Greifswald)

12.15 pm – 12.30 pm
Tomographic retrieval of O2 dayglow emissions and derivation of mesospheric ozone using Odin-IRIS
Anqi Li (Gothenburg)

12.30 pm – 12.45 pm
OSIRIS IR: A second look at the lesser known OSIRIS dataset
Chris Roth (Saskatoon)

12.45 pm – 2.00 pm
Lunch Break

2.00 pm – 4.00 pm
Session 8: Retrieval algorithms, error treatment & validation
Chair: Doug Degenstein

2.00 pm – 2.30 pm
Towards Unified Error Reporting (TUNER)
Thomas von Clarmann (Karlsruhe)

2.30 pm – 2.45 pm
Why considering only "systematic error" and "random error" (or "accuracy" and "precision") can be problematic – some MLS-based examples
Nathaniel Livesey (Pasadena)