



The UTLS: Current Status and Emerging Challenges

05.-08.02.2018

Institute for Atmospheric Physics
Johannes Gutenberg University Mainz, Germany

Agenda

Monday, 05.02.2018

09:30	Registration opens
10.30 - 11.00	Coffee break
11.00	<i>Peter Hoor</i> Welcome and scientific goals of the workshop
11.30	<i>Daniel Murphy; Karl Froyd; Pengfei Yu</i> Composition, size, and radiative forcing of the stratospheric aerosol
11.45	<i>Andrew Rollins; Troy Thornberry; Ru Shan Gao</i> Aircraft observations of SO ₂ in the Tropical UT/LS
12.00	<i>Johannes Schneider; Thomas Klimach; Stephan Mertes; Daniel Sauer; Daniel Fütterer; Andreas Minikin; Stephan Borrmann</i> Single particle analysis of aerosol particles and cirrus ice residuals in the UT/LS region over Western Europe
12.15	<i>Christiane Voigt; Stefan Kaufmann</i> Water vapor and cirrus clouds in mid-latitudes: results from recent aircraft campaigns and future plans
12.30 - 14.30	Lunch and poster
14.30	<i>Stephan Borrmann</i> Aerosols and clouds in the tropical UTLS: Properties and processes
15.00	<i>Martina Krämer; Armin Afchine; Christian Rolf; Nicole Spelten</i> Ice particles over the Asian Monsoon: observations during the field campaign StratoClim 2017
15.15	<i>Simone Brunamonti; Teresa Jorge; Beiping Luo; Frank Wienhold; Thomas Peter</i>

	UTLS structure and tracer distributions in the Asian Summer Monsoon Anticyclone inferred from balloon measurements during StratoClim 2016-
15.30	<i>Troy Thornberry; Andrew Rollins; Ru-Shan Gao; Sarah Woods; Paul Bui</i> Insight into the formation processes of high altitude cirrus over the tropical western Pacific during POSIDON
15.45	<i>Stephan Fueglistaler; Maximilien Bolot</i> Estimating the global atmospheric ice mass and fluxes with CALIOP lidar data
16.00 - 16.30	Coffee break
16.30	<i>Mohamadou Diallo; Felix Ploeger; Paul Konopka; Thomas Birner; Rolf Müller; Hella Garny; Bernard Legras; Martin Riese</i> Effects of the natural variability on the Brewer-Dobson circulation and stratospheric trace gases
16.45	<i>C. Michael Volk; Johannes Wintel; Thorben Beckert; Emil Gerhardt; Valentin Lauther; Silvia Viciani; Francesco D'Amato; Alexey Ulanovsky; Francesco Ravegnani; Francesco Cairo</i> Airborne in situ tracer observations inside the Asian Summer Monsoon anticyclone: first results and implications for trace gas transport
17.00	<i>Michael Hoepfner; Sören Johansson; Jörn Ungermann; Felix Friedl-Vallon; Carmen Ullwer; Roland Ruhnke; Bärbel Vogel</i> Sounding the Asian Monsoon Upper Troposphere from high-altitude aircraft: results obtained by GLORIA during the StratoClim campaign
17.15	<i>Felix Plöger; Paul Konopka; Kaley Walker; Martin Riese</i> Quantifying pollution transport from the Asian monsoon anticyclone into the lower stratosphere
17.30	<i>Christian Rolf; Bärbel Vogel; Peter Hoor; Armin Afchine; Gebhard Günther; Martina Krämer; Rolf Müller; Stefan Müller; Nicole Spelten; Martin Riese</i> Water vapor increase in the northern lower stratosphere by the Asian monsoon anticyclone observed during TACTS/ESMVal campaigns
17.45	<i>Joern Ungermann; Lukas Krasauskas; Michael Höpfner; Felix Friedl-Vallon; Felix Ploeger</i> A case study of water vapour in-mixing into the LS from GLORIA measurements acquired during the WISE campaign
18.00	Icebreaker

Tuesday, 06.02.2018

09.00	<i>Laura Pan</i> <i>Observational Evidence of Horizontal Transport-Driven Dehydration in the TTL</i>
09:30	<i>Dale Hurst; Sean Davis; Karen Rosenlof; Bill Read; Emrys Hall; Allen Jordan</i> Anomalously Strong and Rapid Drying of the Tropical Lower Stratosphere in 2016: Connections to the QBO and ENSO
09:45	<i>Thomas Birner</i> Tropical tropopause temperature control in a hierarchy of models
10:00	<i>Alison Ming</i> The seasonal cycle in upwelling in the tropical UTLS
10.15	<i>Kohei Yoshida; Ryo Mizuta</i> How do CMIP5 models drive upwelling in the tropical tropopause layer?
10:30-11.00	Coffee break
11.00	Theodore Shepherd Stratosphere-troposphere dynamical coupling
11.30	<i>Chaim Garfinkel</i> Nonlinear response of tropical lower stratospheric temperature and water vapor to ENSO
11.45	<i>Xiaolu Yan; Paul Konopka; Felix Ploeger; Mengchu Tao; Rolf Müller; Jianchun Bian; Martin Riese</i> ENSO influence on the Asian summer monsoon anticyclone
12.00	<i>Edward Charlesworth; Thomas Birner; John Albers</i> Transport-Radiation Feedbacks of Ozone in the Tropical Tropopause Layer
12.15	<i>Mengchu Tao; Laura Pan; Paul Konopka; Shawn Honomichl; Douglas Kinnison; Eric Apel</i> A Lagrangian model diagnostics of stratospheric contributions to the tropical mid-tropospheric air
12.30-15.30	Lunch and poster
15.30	<i>Marta Abalos; William Randel; Douglas Kinnison; Rolando Garcia; Clara Orbe</i> Changes in UTLS transport in a future climate revealed by the artificial tracer e90
15.45	<i>Hella Garny</i> Trends in the wave forcing of the shallow branch of the Brewer-Dobson circulation and its connection to the subtropical jet in Reanalysis and Models

16.00-16.30	Coffee break
16.30	<i>Dieter H.W. Peters; Andrea Schneidereit; Alexey Yu. Karpechko; Peter Hitchcock</i> Towards the Predictability of Downward Propagation of Major Warmings
16.45	<i>Juan Antonio Añel; Petr Šácha; Laura de la Torre</i> Tropical expansion measured by isentropic and potential vorticity fields and age of air
17.00	<i>Andreas Engel; Harald Boenisch</i> Extending stratospheric mean age time series using AirCore
17.15	<i>Frauke Fritsch; Roland Eichinger; Stefan Versick; Thomas Reddmann</i> Calculation of mean age of air from realistic tracers and age spectra in EMAC

Wednesday, 07.02.2018

09.00	<i>Heini Wernli</i> A tropospheric perspective on extratropical tropopause dynamics
09.30	<i>Holger Tost; Katharina Kaiser</i> The relevance of Clear Air Turbulence (CAT) for mixing in the UTLS
09.45	<i>Volkmar Wirth; Paolo Ghinassi</i> Upper tropospheric Rossby wave packets
10.00	<i>Andreas Schäfler; Martin Wirth; Andreas Fix</i> First collocated observations of ozone and water vapor profiles using a differential absorption lidar during the Wave-driven Isentropic Exchange Campaign 2017
10.15	<i>Robin Pilch Kedzierski; Katja Matthes; Karl Bumke</i> Wave modulation of the extratropical tropopause inversion layer
10.30-11.00	Coffee break
11.00	<i>Markus Rapp; Andreas Dörnbrack; Sonja Gisinger; Christiane Voigt; Romy Heller</i> Gravity wave propagation across the tropopause: dynamical processes and effects on trace gas transport
11.15	<i>Vera Bense; Peter Spichtinger</i> Gravity waves propagating through a tropopause inversion layer - Idealized numerical simulations
11.30	<i>Aurélien Podglajen; T. Paul Bui; Jonathan M. Dean-Day; Pfister Leonhard; Eric Jensen; M. Joan Alexander; Albert Hertzog;</i>

	<i>Bernd Kärcher; Riwal Plougonven; William Randel</i> Small-Scale Wind Fluctuations in the Tropical Tropopause Layer from Aircraft Measurements: Occurrence, Nature, and Impact on Vertical Mixing
11.45	<i>Gergely Bölöni; Sebastian Borchert; Ulrich Achatz</i> Towards the implementation of a prognostic gravity wave parametrization in the ICON model
12.00	<i>Martin Riese; Peter Hoor; Daniel Kunkel; Martin Kaufmann; WISE-Team</i> Wave-driven Isentropic Exchange (WISE): Campaign overview and first results
12.15	<i>Hermann Oelhaf; Marleen Braun; Felix Friedl-Vallon; Jens-Uwe Grooss; Michael Höpfner; Sören Johansson; Peter Preusse; Björn-Martin Sinnhuber; Jörn Ungermann; Wolfgang Woiwode; POLSTRACC Team</i> The Arctic UTLS in winter&spring: Chemical and dynamical aspects as derived from GLORIA observations during the POLSTRACC mission
12.30-14.30	Lunch and poster
14.30	<i>Michaela Hegglin</i> Trends in UTLS composition
15.00	<i>Anne Thompson; Jacquelyn Witte; Ryan Stauffer</i> Reprocessed SHADOZ Ozone Profiles (1998-2016): Evaluation and Insights into the Tropical UT/LS
15.15	<i>Ryan Stauffer; Anne Thompson; Jacquelyn Witte</i> A Geophysically-based Global Ozone Profile Climatology using Ozonesondes and MERRA-2 Reanalyses
15.30	<i>Krzysztof Wargan; Steven Pawson; Luke Oman; Mark Olsen; Clara Orbe; Emma Knowland; Jerald Ziemke</i> Multidecadal changes in the UTLS ozone from the MERRA-2 reanalysis and the GMI chemistry model
15.45	<i>Katherine Emma Knowland; Lesley Ott; Bryan Duncan; Krzysztof Wargan; Kevin Hodges</i> Stratospheric Intrusion Catalog: A 10-year Compilation of Events Identified by using an Objective Feature Tracking Model with NASA's MERRA-2 Reanalysis
16.00-16.30	Coffee break
16.30	<i>Karen Rosenlof</i> Is There Evidence that Mid-Latitude Stratospheric Ozone Depletion Occurs in Conjunction with North American Monsoon Convection?
16.45	<i>Gabriele Stiller; Norbert Glatthor; Stefan Lossow; Johannes Speidel; Udo Grabowski; Sylvia Kellmann; Michael Kiefer; Andrea Linden; Thomas von Clarmann</i> MIPAS-Envisat observations in the Asian monsoon anticyclone

17.00	<i>Rolf Müller; Sabine Robrecht; Bärbel Vogel; Jens-Uwe Grooß</i> Chemical ozone loss in the lower stratosphere in mid-latitudes in summer: chemical mechanisms and sensitivities
17.15	<i>Björn-Martin Sinnhuber; Hermann Oelhaf; POLSTRACC Team</i> Arctic ozone loss in the lowermost stratosphere: Observations from the POLSTRACC campaign and implications
17.30	<i>Irina Petropavlovskikh; Daan Hubert; Sophie Godin-Beekmann; Robert Damadeo; Birgit Hassler; Viktoria Sofieva; William Ball; Kai-Lan Chang; Kleareti Tourpali and many others</i> LOTUS: challenges for deriving ozone trends in the UTLS

Thursday, 08.02.2018

09.00	<i>Andreas Zahn; Harald Bönisch; Florian Obersteiner; Carl Brenninkmeijer; Jonathan Williams; Markus Hermann; Denise Assmann; Peter van Velthoven</i> What can be learned from regular passenger aircraft observations
09.15	<i>Denise Assmann; Markus Hermann; Andreas Weigelt; Bengt Martinsson; Carl Brenninkmeijer; Armin Rauthe-Schoech; Peter van Velthoven; Harald Boenisch; Andreas Zahn</i> Influence of stratospheric-tropospheric exchange on aerosol particle concentration in the UT/LMS – a statistical analysis of aircraft data from the IAGOS-CARIBIC observatory
09.30	<i>Yann Cohen; Hervé Petetin; Valérie Thouret; Virginie Marécal; Béatrice Josse; Hannah Clark; Bastien Sauvage; Alain Fontaine; Gilles Athier; Romain Blot; Damien Boulanger; Jean-Marc Cousin; Philippe Nédélec</i> Climatology and long-term evolution of ozone and carbon monoxide in the UTLS at northern mid-latitudes, as seen by IAGOS from 1995 to 2013
09.45	<i>Andreas Petzold; Martina Krämer; Susdanne Rohs; Nicole Spelten; Patrick Neis; Christian Rolf; Florian Berkes; Herman G.J. Smit; Andreas Zahn; Philippe Nédélec; Valerie Thouret</i> Investigating variability and long term changes of water vapour in the UTLS derived from in-situ observations on passenger (IAGOS) and research aircraft (JULIA)
10.00	<i>William Randel</i> Summary and outlook
10.30-11.00	Coffee break
11.00-12.30	Rapporteurs and discussion