



IAGOS Scientific Symposium on Atmospheric Composition

Long-term Observations by Commercial Aircraft

October 17-19th 2016

Manchester, UK



MANCHESTER
1824

The University of Manchester



Programme

MONDAY – 17th OCTOBER

12:00 Registration

13:00 Welcome

SESSION 1: UTLS Dynamics, Chemical Composition and Trends

Chair: Harald Bönisch / Andreas Zahn

13:10	Process observations versus global view: Do we understand the UTLS?	Peter Hoor (invited)
13:40	Quantifying dynamics and transport in the extratropical UTLS	Peter Haynes (invited)
14:10	Revisiting the IAGOS-CARIBIC CO and O ₃ observations and their correlation in the UT/LS	Harald Bönisch
14:25	Long-term trends of tropospheric ozone over North America and Southeast Asia	Audrey Gaudel
14:40	Ozone and CO trends (1995-2014) in the UTLS by MOZAIC-IAGOS over northern mid-latitudes	Yann Cohen
14:55	Have we underestimated the role of short-lived chlorine compounds in ozone depletion?	David Oram
15:10	CARIBIC observations of mercury in the upper troposphere and lower stratosphere	Franz Slemr
15:25	An assessment of the climatological representativeness of IAGOS-CARIBIC trace gas measurements using EMAC model simulations	Johannes Eckstein

15:40 Coffee Break

SESSION 2: Reactive Trace Gases, Greenhouse Gases, Modelling

Chair: Valerie Thouret

16:10	Aircraft measurements of nitrogen oxides and ozone by cavity ring-down spectroscopy	Steven Brown (invited)
16:40	Using IAGOS data in global model evaluation	David Stevenson (invited)
17:10	Evidence for strong, widespread chlorine radical chemistry associated with pollution outflow from continental Asia	Jonathan Williams
17:25	Investigation of low ozone, high water vapour episodes over the Pacific	Martin Schultz
17:40	Impact of convection in the vertical distribution of O ₃ and CO over an urban region of India	Lokesh Sahu
17:55	The use of IAGOS in the Copernicus Atmosphere Service	Hannah Clark
18:10	Nitrogen Oxides measurements in the UTLS by IAGOS – Instrument Performance and First Results	Florian Berkes

18:25 Day 1 ends

TUESDAY – 18th OCTOBER

SESSION 2: Reactive Trace Gases, Greenhouse Gases, Modelling

Chair: Andreas Volz-Thomas

08:30	On the potential of IAGOS-core GHG observations to constrain regional anthropogenic emissions	Christoph Gerbig
08:45	Origin of pollution in the Asian monsoon upper tropospheric anticyclone from MOZAIC/IAGOS	Brice Barret
09:00	Lagrangian model analysis of CARIBIC observations – quantifying transport, chemistry, and mixing	Hella Riede
09:15	Using a transport model as a transfer to compare in-situ and column airborne GHG observations	Fabio Boschetti
09:30	CO sources and transport processes driving African UT pollution using the SOFT-IO coupling model	Alain Fontaine
09:45	Estimating acetone emissions using regional correlations with CO observed within IAGOS-CARIBIC	Garlich Fischbeck

10:00 Coffee Break



SESSION 2: continued

Chair: Carl Brenninkmeijer

10:30	Overview of tropospheric CO distributions by MOZAIC-IAGOS and role of vegetation fires	Hervé Petetin
10:45	Estimation of sulfuryl fluoride emissions on regional and global scales using AGAGE measurements	Alicia Gressent
11:00	Impact of Biomass Burning onto the upper troposphere observed during IAGOS – CARIBIC	Marco Neumaier
11:15	IAGOS CO ₂ measurements for surface-atmosphere fluxes: the impact of transport model errors	Shreeya Verma
11:30	Nitrogen oxides in the UTLS: Combining observations from in-service aircraft and research aircraft	Helmut Ziereis

SESSION 3: Water Vapour, Clouds and Radiation

Chair: Hermann Smit

11:45	Cirrus Clouds & Water Vapour at 25°S to 75°N from two decades of in-situ aircraft observations	Martina Krämer (invited)
12:15	Lunch	
13:45	The importance of UTLS water vapour and ozone for climate	Amanda Maycock (invited)
14:15	15 years of North Atlantic upper tropospheric relative humidity measurements by MOZAIC	Patrick Neis
14:30	Processes controlling water vapor in the upper troposphere/lowermost stratosphere	Andreas Zahn
14:45	Validation of satellite-based thunderstorm detection and Cb nowcasting with IAGOS	Dennis Stich
15:00	IAGOS BCP observations to evaluate satellite products for detecting areas of high ice water content	Elisabeth Ostrom
15:15	Coffee Break	
15:45 – 17:15	Poster Session	(all; representing authors in attendance)
17:15 – 18:00	Discussion with Keynote Speakers on the usefulness of commercial aircraft data	(upon invitation)
19:00 – 22:00	Hot fork buffet McDonald Hotels & Spa (Piccadilly Suite), 91 London Road, Manchester	

WEDNESDAY – 19 OCTOBER

SESSION 4: Aerosols and Climate

Chair: Andreas Petzold

08:30	Using in situ aerosol measurements to constrain global models	Ken Carslaw (invited)
09:00	Volcanic Eruptions indicate Aerosol–Cloud lifetime climate impacts are weak	Jim Haywood (invited)
09:30	What can IAGOS cloud detectors tell us about the UTLS?	Martin Gallagher
09:45	Influence of biomass burning events on black carbon inferred from IAGOS-CARIBIC	Jeannine Ditas
10:00	Aerosol package for IAGOS-core: Setup and first airborne application	Ulrich Bundke
10:15	Multi-instrument Optical Closure Study: laboratory and field approaches	Julia de Faria
10:30	Coffee Break	

SESSION 5: New Technical Developments for Airborne Monitoring

Chair: Martin Gallagher

11:00	The new IAGOS-CARIBIC payload	Andreas Zahn (invited)
11:30	Quality Assurance & Quality Control of IAGOS Measurements: Concept & First Findings Made in IGAS	Herman Smit
11:45	The new IAGOS Data Portal	Damien Boulanger
12:00	Wrap-up and discussion	all
13:00	Conference ends	



Poster Session: Tuesday 15:45 – 17:15

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| #01 | Aerosol Particle Distributions in the UT/LMS measured by the IAGOS-CARIBIC Observatory | Denise Assmann |
| #02 | Two Decades of In-Situ Temperature Measurements within the UTLS by IAGOS | Florian Berkes |
| #03 | Comparing ozone and carbon monoxide measurements from commercial aircraft programs | Romain Blot |
| #04 | Understanding CO ₂ exchanges in the biosphere-boundary layer-free troposphere system during the South Asian Monsoon using CARIBIC ¹³ C and ¹⁸ O measurements | Sergey Gromov |
| #05 | Fluxes of Airborne Sulphur Compounds IN Atmospheric Troposphere-stratosphere Exchange (FASCINATE) | Einar Karu |
| #06 | Observations of long-lived trace gases in the upper troposphere and stratosphere | Johannes Laube |
| #07 | A new DOAS instrument aboard the CARIBIC passenger aircraft | Lara Penth |
| #08 | First experiences from the testing phase of the processing and implementation of Near-Real Time data provision of IAGOS-Humidity data for Atmospheric Services | Susanne Rohs |
| #09 | An Aerodyne mini-AMS for UT/LMS aerosol measurements within IAGOS-CARIBIC | Florian Rubach |
| #10 | A new cavity ring-down instrument for airborne monitoring of N ₂ O ₅ , NO ₃ , NO ₂ and O ₃ in the upper troposphere lower stratosphere | Andy Ruth |
| #11 | Investigating African trace gas sources, transport and oxidation using measurements made at 10 km between 2009 and 2011 from IAGOS-CARIBIC | Ute Thorenz |
| #12 | Global model replication of methane observations by the flying CARIBIC observatory with special focus on the resuming increase in 2007 | Peter Zimmermann |