

# Programme of the 9th DOAS Workshop 13–15 July 2020

Version date: 10 July 2020

*Presentation times below are in UTC*

Time differences for some locations:

Auckland:	UTC + 12	Toronto:	UTC - 4
Melbourne:	UTC + 10	Mexico City:	UTC - 5
Seoul:	UTC + 9	Boulder:	UTC - 6
Hefei:	UTC + 8	Los Angeles:	UTC - 7
De Bilt:	UTC + 2	Fairbanks:	UTC - 8

*Oral presentations are 15 minutes + 5 minutes for discussion.*

*Poster pitches are 1 minute with 1 slide.*

## Day 1: Monday 13 July 2020

07:15 - 08:15 *Social event – coffee tables via Slack*

08:30 - 08:40 *Welcome*  
*Gerard van der Steenhoven, director of KNMI*

08:40 - 08:50 *Logistics*  
*Ankie PETERS*

### **Satellite Retrieval & Validation (part 1)** *Chairs: Pinhua Xie & Michel Van Roozendaal*

08:50 - 09:10 *TROPOMI high-spatial resolution observations from space*  
*Pepijn Veeffkind*

09:10 - 09:30 *Status of the Geostationary Environment Monitoring Spectrometer (GEMS) NO<sub>2</sub> operational algorithm*  
*Junsung Park*

09:30 - 09:50 *Causes of low bias in TROPOMI satellite observations of tropospheric NO<sub>2</sub> column densities as explored with co-located MAX-DOAS and Pandora spectrometers at Yokosuka, Japan*  
*Yugo Kanaya*

09:50 - 09:57 *Poster pitches (6 × 1 min.) numbers: 40, 58, 9, 26, 27, 29*

09:57 - 10:20 *break*

### **Satellite Retrieval & Validation (part 2)** *Chairs: Steffen Beirle & Ilse Aben*

10:20 - 10:40 *Sentinel-5p tropospheric NO<sub>2</sub> data assessment using MAX-DOAS and direct sun measurements*  
*Gaia Pinardi*

10:40 - 11:00 *TROPOMI NO<sub>2</sub> slant column retrieval: method, stability, uncertainties and comparisons with OMI*  
*Jos van Geffen*

- 11:00 - 11:20 Retrievals of glyoxal tropospheric vertical columns from TROPOMI observations  
*Christophe Lerot*
- 11:20 - 11:40 Inhomogeneous scene effects in TROPOMI satellite data  
*Andreas Richter*
- 11:40 - 11:45 *In Memoriam Andreas Hilboll*
- 11:45 - 12:40 *break*

### **Satellite Retrieval & Validation (part 3)**

Chairs: **Andreas Richter & Olga Puentedura**

- 12:40 - 13:00 Shipborne MAX-DOAS measurements for validation of TROPOMI NO<sub>2</sub> products  
*Ping Wang*
- 13:00 - 13:20 Uniform glyoxal and formaldehyde retrievals from S5P, OMI, GOME-2, and SCIAMACHY satellite instruments  
*Leonardo Alvarado*
- 13:20 - 13:40 Validation of the S5P formaldehyde L2 product using MAX-DOAS network observations  
*Isabelle De Smedt*
- 13:40 - 14:00 A global perspective on bromine monoxide composition in volcanic plumes derived from S5-P/TROPOMI  
*Simon Warnach*
- 14:00 - 14:06 Poster pitches (5 × 1 min.) numbers: 5, 6, 14, 22, 23
- 14:06 - 14:30 *break*

### **Radiative Transfer Modelling & Spectroscopy**

Chairs: **Elena Spinei Lind & Jochen Stutz**

- 14:30 - 14:50 Quantitative comparison of measured and simulated O<sub>4</sub> absorption for one day with extremely low aerosol load over the tropical Atlantic  
*Thomas Wagner*
- 14:50 - 15:10 Sum over discernible absorption paths: a method to characterize radiative transfer effects on remote sensing of volcanic SO<sub>2</sub>  
*Santiago Arellano*
- 15:10 - 15:30 Optical closure of multispectral aerosol optical properties  
*Christopher Lee*
- 15:30 - 15:50 Spectrally resolved laboratory measurements of oxygen-oxygen collision induced absorption in the 308 – 500 nm range, including the 315, 328, 421, and 495 nm bands  
*Henning Finkenzeller*
- 15:50 - 15:57 Poster pitches (6 × 1 min.) numbers: 10, 33, 7, 4, 11, 12
- 16:15 - 17:15 *Social event – coffee tables via Slack*

**Day 2: Tuesday 14 July 2020**

07:15 - 08:15 *Social event – coffee tables via Slack*

**Atmospheric Measurements & Emissions (part 1)**

Chairs: **Shanshan Wang & Yugo Kanaya**

08:30 - 08:50 O<sub>3</sub> and OH production in Australia studied using MAX-DOAS measurements

*Robert Ryan*

08:50 - 09:10 NO<sub>x</sub> emission flux measuring by multiple mobile-DOAS instruments in Beijing

*Yeyuan Huang*

09:10 - 09:30 Remote sensing of air pollution from satellite and MAX-DOAS network in China

*Cheng Liu*

**Satellite Retrieval & Validation (part 4)**

Chairs: **MariLiza Koukouli & Thomas Wagner**

09:30 - 09:50 First retrieval of aerosol effective height based on O<sub>4</sub> air mass factor at 477 nm: from TROPOMI onboard Sentinel-5P and GEMS onboard GK-2B

*Wonei Choi*

09:50 - 09:58 Poster pitches (6 × 1 min.) numbers: 36, 45, 50, 51, 52, 54, 37

09:58 - 10:20 *break*

10:20 - 10:40 Experiments on high-detailed mapping of tropospheric NO<sub>2</sub> using GSA/Resurs-P observations: results, and validation with models and measurements

*Oleg Postolyakov*

10:40 - 11:00 DOAS measurements of NO<sub>2</sub> and HCHO pollution in Kinshasa

*Rodriguez Yombo Phaka*

11:00 - 11:20 Total column water vapour retrieval from S-5P/TROPOMI in the visible blue spectral range

*Christian Borger*

11:20 - 11:40 Impact of 3D cloud structures on tropospheric NO<sub>2</sub> column measurements from UV-VIS sounders

*Huan Yu*

11:40 - 11:47 Poster pitches (6 × 1 min.) numbers: 30, 34, 35, 44, 46, 48

11:47 - 12:40 *break*

**New/Other Techniques & Concepts (part 1)**

Chairs: **Alexander Cede & Johannes Lampel**

- 12:40 - 13:00 The "ideal spectrometer" for atmospheric observations  
*Ulrich Platt*
- 13:00 - 13:20 Discrete-Wavelength DOAS NO<sub>2</sub> slant column retrievals: feasibility and sensitivity analysis for a future instrument  
*Cristina Ruiz Villena*
- 13:20 - 13:40 High spectral resolution DOAS measurements with a novel compact spectrograph  
*Jonas Kuhn*
- 13:40 - 14:00 Operational ship emission monitoring using Long Path Differential Optical Absorption Spectroscopy  
*Stefan Schmitt*
- 14:00 - 14:07 Poster pitches (6 × 1 min.) numbers: 2, 17, 21, 41, 16, 59
- 14:07 - 14:30 *break*

**Atmospheric Measurements & Emissions (part 2)**

Chairs: **Isabelle de Smedt & Henning Finkenzeller**

- 14:30 - 14:50 Urban air pollution monitoring at micro, local and mesoscales  
*Elena Lind*
- 14:50 - 15:10 Comparison between DOAS and FTIR in different configurations: HCHO and SO<sub>2</sub> case studies in Central Mexico  
*Claudia Rivera Cárdenas*
- 15:10 - 15:30 Mini ozone holes due to dust release of iodine in the remote tropical free troposphere  
*Rainer Volkamer*
- 15:30 - 15:50 Biogenic and fire-sourced formaldehyde above various Arctic biomes in Alaska  
*William Simpson*
- 15:50 - 15:56 Poster pitches (6 × 1 min.) numbers: 3, 32, 38, 39, 20
- 16:15 - 17:15 *Social event – coffee tables via Slack*

## Day 3: Wednesday 15 July 2020

07:15 - 08:15 *Social event – coffee tables via Slack*

### **Atmospheric Measurements & Emissions (part 3)**

Chairs: **Cheng Liu & Hanlim Lee**

08:30 - 08:50 Monitoring air quality in Auckland NZ using MAX-DOAS  
*Jamie Halla*

08:50 - 09:10 Advanced mobile-DOAS techniques for locating and identifying urban area emission sources  
*Zhaokun Hu*

### **New/Other Techniques & Concepts (part 2)**

Chairs: **Denis Pöhler & Anja Schönhardt**

09:10 - 09:30 Imaging Fabry-Perot interferometer correlation spectroscopy – First measurements with a novel imaging technique of atmospheric trace gases  
*Christopher Fuchs*

09:30 - 09:50 Investigation of nighttime vertical distribution of HONO based on IBBCEAS technique  
*Fanhao Meng*

09:50 - 09:58 Poster pitches (7 × 1 min.) numbers: 47, 18, 24, 25, 28, 31, 55

09:58 - 10:20 *break*

10:20 - 10:40 The information content of skylight polarisation in MAX-DOAS trace gas- and aerosol profiling applications  
*Jan-Lukas Tirpitz*

### **Retrieval Methods, Uncertainties & Networks (part 1)**

Chairs: **Udo Frieß & Ankie Pijters**

10:40 - 11:00 New MAX-DOAS retrieval method using WRF-Chem aerosol information for complex aerosol load condition  
*Qihua Li*

11:00 - 11:20 Impact of an elevation angle bias on MAX-DOAS profile retrievals  
*Steffen Beirle*

11:20 - 11:40 Accurate tropospheric NO<sub>2</sub> column retrieval based on combined direct-sun and zenith-sky twilight visible measurements  
*Michel Van Roozendaal*

11:40 - 11:47 Poster pitches (6 × 1 min.) numbers: 1, 13, 15, 19, 49, 53

11:47 - 12:40 *break*

**Retrieval Methods, Uncertainties & Networks (part 2)**

*Chairs: Cristina Prados-Roman & Stefan Schreier*

- 12:40 - 13:00 Influence of horizontal inhomogeneity and noise on MAX-DOAS retrievals  
*Julia Remmers*
- 13:00 - 13:20 Uncertainty of the PGN total column NO<sub>2</sub> product  
*Alexander Cede*
- 13:20 - 13:40 The NDACC MAX-DOAS Central Processing Service  
*François Hendrick*

**Atmospheric Measurements & Emissions (part 4)**

*Chairs: Pepijn Veefkind & Christopher F. Lee*

- 13:40 - 14:00 Estimating real driving emissions from MAX-DOAS measurements at the A60 motorway near Mainz, Germany  
*Bianca Lauster*
- 14:00 - 14:06 Poster pitches (6 × 1 min.) numbers: 8, 42, 43, 56, 60
- 14:06 - 14:30 *break*
- 14:30 - 14:50 Long-term measurements of bromine monoxide and ozone in the Canadian high Arctic  
*Ramina Alwarda*
- 14:50 - 15:10 Remote sensing of radical precursors in wildfires plumes: Synergies between aircraft and satellites  
*Kyle Zarzana*
- 15:10 - 15:30 Expanding CU SOF data products for evaluating the impacts of biomass burning emissions during the 2018 Pacific Northwest wildfire season: emission fluxes and enhancement ratios of CO, NH<sub>3</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, HCN, HCHO, HCOOH, CH<sub>3</sub>OH and PAN  
*Rainer Volkamer*
- 15:30 - 15:50 Mini-DOAS observations of biomass burning plumes during FIREX-AQ  
*Jochen Stutz*
- 15:50 - 16:00 *Closing remarks & Adjourn*
- 16:15 - 17:15 *Social event – coffee tables via Slack*