

## Appendix B

### Publications, Accepted or In Press

- Deng, F., D. B. A. Jones, D. K. Henze, N. Bousserez, K. W. Bowman, J. B. Fisher, R. Nassar, C. O'Dell, D. Wunch, P. O. Wennberg, E. A. Kort, S. C. Wofsy, T. Blumenstock, N. M. Deutscher, D. Griffith, F. Hase, P. Heikkinen, V. Sherlock, K. Strong, R. Sussmann, and T. Warneke (2014): "Inferring regional sources and sinks of atmospheric CO<sub>2</sub> from GOSAT XCO<sub>2</sub> data." *Atmos. Chem. Phys.*, **14**, 3703-3727.
- Griffin, D., K. A. Walker, J. E. Franklin, M. Parrington, C. Whaley, J. Hopper, J. R. Drummond, P. I. Palmer, K. Strong, T. J. Duck, I. Abboud, P. F. Bernath, C. Clerbaux, P.-F. Coheur, K. R. Curry, L. Dan, E. Hyer, J. Kliever, G. Lesins, A. Saha, K. Tereszchuk, M. Maurice, and D. Weaver (2013): Investigation of CO, C<sub>2</sub>H<sub>6</sub> and aerosols in a boreal fire plume over Eastern Canada during BORTAS 2011 using ground- and satellite-based observations, and model simulations. *Atmos. Chem. Phys.*, **13**, 10227-10241.
- Ivanescu, L., K. Baibakova, N. T. O'Neill, J.-P. Blanchet, Y. Blanchard, A. Saha, M. Rietzec and .-H. Schulz (2014): "Challenges in operating an Arctic telescope", Proc. SPIE 9145, Ground-based and Airborne Telescopes V, 914549 doi:10.1117/12.2071000.
- Ryan, Niall J. and Kaley A. Walker (2015): "Characterization and simulation of a ground-based millimeter wave observation system for Arctic atmospheric research." *J. Quant. Spectrosc. Rad. Transfer*, **151**, 26-37.
- Sepúlveda, E., M. Schneider, F. Hase, S. Barthlott, D. Dubravica, O.E. García, A. Gomez-Pelaez, Y. González, J.C. Guerra, M. Gisi, R. Kohlhepp, S. Dohe, T. Blumenstock, K. Strong, D. Weaver, M. Palm, A. Sadeghi, N.M. Deutscher, T. Warneke, J. Notholt, N. Jones, D.W.T. Griffith, D. Smale, G.W. Brailsford, J. Robinson, F. Meinhardt, M. Steinbacher, T. Aalto, and D. Worthy (2014): "Tropospheric CH<sub>4</sub> signals as observed by NDACC FTIR at globally distributed sites and comparison to GAW surface in-situ measurements." *Atmos. Meas. Tech.*, **7**, 2337–2360.
- Takahashi, T., S. Nozawa, M. Tsutsumi...A.H. Manson et al. (2014): "A case study of gravity wave dissipation in the polar MLT region using sodium LIDAR and radar data." *Ann. Geophys.*, **32**, 1195-1205, doi:10.5194/angeo-32-1195-2014.
- Tomasi, C., A. A. Kokhanovsky, A. Lupi, C. Ritter, A. Smirnov, N. T. O'Neill, R. S. Stone, B. N. Holben, S. Nyeki, C. Wehrli, A. Stohl, M. Mazzola, C. Lanconelli, V. Vitale, K. Stebel, V. Aaltonen, G. de Leeuw, E. Rodriguez, A. B. Herber, V. F. Radionov, T. Zielinski, T. Petelski, S. M. Sakerin, D. M. Kabanov, Y. Xue, L. Mei, L. Istomina, R. Wagener, B. McArthur, P. S. Sobolewski, R. Kivi, Y. Courcoux, P. Larouche, S. Broccardo and S. J. Piketh (2014): "Aerosol remote sensing in polar regions." *Earth Science Reviews*. Accepted
- Viatte, C., K. Strong, C. Paton-Walsh, J. Mendonca, N. T. O'Neill, and J. R. Drummond (2013): Measurements of CO, HCN, and C<sub>2</sub>H<sub>6</sub> total columns in smoke plumes transported from the 2010 Russian boreal forest fires to the Canadian High Arctic. *Atmos.-Ocean*, **51** (5), 522-531, doi:10.1080/07055900.2013.823373.
- Viatte, C., K. Strong, K.A. Walker, and J.R. Drummond (2014): "Five years of CO, HCN, C<sub>2</sub>H<sub>6</sub>, C<sub>2</sub>H<sub>2</sub>, CH<sub>3</sub>OH, HCOOH, and H<sub>2</sub>CO total columns measured in the Canadian High Arctic." *Atmos. Meas. Tech.*, **7**, 1547-1570.

### Publications, Submitted

- Barthlott, S., M. Schneider, F. Hase, A. Wiegeler, E. Christner, Y. González, T. Blumenstock, S. Dohe, O. E. García, E. Sepúlveda, K. Strong, J. Mendonca, D. Weaver, M. Palm, N.M. Deutscher, T.

- Warneke, J. Notholt, B. Lejeune, E. Mahieu, N. Jones, D.W.T. Griffith, V.A. Velazco, D. Smale, J. Robinson, R. Kivi, P. Heikkinen, and U. Raffalski (2014): “Using XCO<sub>2</sub> retrievals for assessing the long-term consistency of NDACC/FTIR data sets.” *Atmos. Meas. Tech. Discuss.*, **7**, 10513-10558.
- Ryan, Niall J. and Kaley A. Walker (2014): “The effect of spectroscopic parameter inaccuracies on ground-based millimeter wave remote sensing of the atmosphere.” *J. Quant. Spectrosc. Rad. Transfer.*, submitted.
- Viatte, C., K. Strong, J. Hannigan, E. Nussbaumer, L. Emmons, S. Conway, C. Paton-Walsh, J. Hartley, J. Benmergui, and J. Lin (2014): “Identifying fire plumes in the Arctic with tropospheric FTIR measurements and transport models.” *Atmos. Chem. Phys. Discuss.*, **14**, 26349–26401.

## Theses

- Baibakov, Konstantin. **Pan-Arctic Characterization of Polar Winter Aerosols**. Ph.D. thesis, Université de Sherbrooke and University of Bremen, April 2014
- Daou, D. **Caractérisation des aérosols par inversion des données combinées des photomètres solaires et lidars au sol**. Ph.D. thesis, Université de Sherbrooke, Sherbrooke, Québec, October 2014
- Lutsch, Erik. **FTIR Measurements of Biomass Burning Species in the Arctic**. M.Sc. Theses, University of Toronto, Toronto, Ontario, September 2014.
- Mariani, Zen. **Infrared Emission Measurements of Radiation and Trace Gas Variability in the High Arctic**. Ph.D. Thesis, University of Toronto, Toronto, Ontario, September 2014.
- Pugliese, Anthony. **Seasonal and annual trends for CFC-11, CFC-12, and HCFC-22 at three different latitudes**. M.Sc. Theses, University of Toronto, Toronto, Ontario, September 2014.
- Roche, Sébastien. **Investigating Atmospheric composition using Fourier transform infrared spectroscopy**. M.Sc. Thesis, Claude Bernard Lyon 1 University (visiting University of Toronto), September 2014.
- Ryan, Niall J. **The Application of Millimeter Wave Spectroscopy to Ground-Based Remote Sensing of the Atmosphere**. Ph.D. Thesis, University of Toronto, Toronto, Ontario, October 2014

## Conference Presentations

- Chaubey, J. P., N. T. O'Neill, D. R. Hudak, P. Rodriguez, L. Ivanescu, E. Eloranta, and T. Duck. “Aerosols and Precipitation Retrievals over Eureka by Remote Sensing: Validation of Space Based Profiling Retrievals.” Presentation at the American Geophysical Union (AGU) Fall Meeting, San Francisco, California, United States, December 2014.
- Chaubey, J. P., Gaige Kerr, N. T. O'Neill, P. Hayes, D. E. Atkinson. “Identification of absorbing organic (brown carbon) aerosols through Sun Photometry: results from AEROCAN / AERONET stations in high Arctic and urban Locations.” Presentation at the American Geophysical Union (AGU) Fall Meeting, San Francisco, California, United States, December 2014.
- Drummond, J. “The Canadian Network of Northern Research Operators.” Presentation at the Arctic Observing Summit (AOS), Helsinki, Finland, April 2014.
- Drummond, J.R., J. E. Franklin, A. Tikhomirov, S. Wise, K. R. Curry, C. Midwinters, O. Colebatch, C. Adams. “Solar tracker development in support of groundbased solar absorption spectrometry”, Presentation at the Arctic Observing Summit (AOS), Helsinki, Finland, April 2014.
- Goutail, F., F. Lefevre, J.-P. Pommereau, A. Pazmino, M. Chipperfield, W. Feng, M. Van Roozendael, P. Eriksen, K. Stebel, V. Dorokhov, R. Kiwi, X. Zhao, and K. Strong. “Total ozone loss during the 2013/14 Arctic winter and comparison to previous years.” Presentation at the European Geosciences Union General Assembly 2014, Vienna, Austria, 27 April - 1 May 2014.
- Griffin, D., D. Weaver, K. Walker, K. Strong, F. Kolonjari, R. Lindenmaier, L. Dan, G. Manney, C. Boone, P. Bernath, and J.R. Drummond. “Investigating the stratosphere of the High Arctic using

- three Fourier transform spectrometers: instrument intercomparison and validation between 2011 and 2013.” Presentation at the 9th Annual Scientific Meeting (ASM2013), Halifax, Nova Scotia, December 2013.
- Hesaraki, S., N. T. O'Neill, A. Saha, J. P. Chaubey, R. V. Martin, G. Lesins, and I. Abboud. “Aerosol comparisons between sunphotometry / sky radiometry and the GEOS-Chem model.” Presentation at the American Geophysical Union (AGU) Fall Meeting, San Francisco, California, United States, December 2014.
- Holl, G., K. Walker, S. Conway, N. Saitoh, C. Boone, K. Strong and J. R. Drummond. “Methane Cross-Validation Between Spaceborne Solar Occultation Observations from ACE-FTS, Spaceborne Nadir Sounding from Gosat, and Ground-Based Solar Absorption Measurements, at a High Arctic Site.” Presentation at the American Geophysical Union (AGU) Fall Meeting, San Francisco, California, United States, December 2014.
- Ivanescu, L., N. T. O'Neill, J.-P. Blanchet, K. Baibakov, J. P. Chaubey, C. W. Perro and T. J. Duck. “Multi-Sensor Investigation of a Regional High-Arctic Cloudy Event.” Presentation at the American Geophysical Union (AGU) Fall Meeting, San Francisco, California, United States, December 2014.
- Kolonjari, K., K. Walker, E. Mahieu, R. L. Batchelor, P. F. Bernath, C. Boone, S. A. Conway, L. Dan, D. Griffin, A. Harrett, Y. Kasai, A. Kagawa, R. Lindenmaier, K. Strong, and C. Whaley. “Validation of ACE-FTS measurements of CFC-11, CFC-12, and HCFC-22 using ground-based FTIR spectrometers.” Presentation at the American Geophysical Union (AGU) Fall Meeting, San Francisco, California, 9-13 December 2013.
- Mariani, Z., K. Strong, P.M. Rowe, V.P. Walden, and J. R. Drummond. “The Impact of Changing Cloud Cover on the High Arctic’s Primary Cooling-to-space Windows.” Presentation at the European Geosciences Union General Assembly 2014, Vienna, Austria, 27 April - 1 May 2014.
- McCullough, E., C. Perro, S. Gamage, J. Hopper, R. J. Sica, T. J. Duck, K. A. Walker, J. R. Drummond. “Clouds in the Canadian Arctic troposphere during polar night: A multi-year depolarization lidar study of liquid, mixed-phase, and cold ice clouds at Eureka, Nunavut.” Presentation at the Arctic Change 2014, Ottawa, Ontario, December 2014.
- McCullough, E., C. Perro, S. Gamage, J. Hopper, R. J. Sica, T. J. Duck, K. A. Walker, J. R. Drummond. “Impacts of depolarization calibration methods on cloud phase interpretation at Eureka during 2013 and 2014 CRL lidar measurement campaigns.” Presentation at the American Geophysical Union Fall Meeting, San Francisco, United States, December 2014.
- Ryan, Niall J., Kaley A. Walker, and Uwe Raffalski. “Interannual variability of winter-time O3 above Kiruna and a comparison of ground-based radiometer measurements in winter 2012/13.” Presentation at the American Geophysical Union (AGU) Fall Meeting, San Francisco, California, 9-13 December 2013.
- Saha, A., N.T. O'Neill, K. Strong, T. Nakajima, O. Uchino, and M. Shiobara. “Empirical analysis of aerosol and thin cloud optical depth effects on CO2 retrievals from GOSAT.” Presentation at the American Geophysical Union (AGU) Fall Meeting, San Francisco, California, United States, December 2014.
- Walker, K. and K. Strong. “The Canadian Arctic Atmospheric Chemistry Experiment (ACE) Validation Project: Overview and results from ten years of ACE operations.” Presentation at the European Geosciences Union General Assembly 2014, Vienna, Austria, 27 April - 1 May 2014.
- Walker, K., K. Strong, J. R. Drummond, and the Canadian Arctic ACE/OSIRIS Validation Campaign Team. “Eleven Years of Validating Satellite Observations Over the Canadian High Arctic: The Canadian Arctic ACE/OSIRIS Validation Project at PEARL.” Presentation at the Arctic Change 2014, Ottawa, Ontario, December 2014.
- Weaver, D., K. Strong, M. Schneider, K.A. Walker, T. Uttal, N. O'Neill, C.T. McElroy, C. Sioris, Z. Mariani, P. Rowe, V.P. Walden, and H. Vomel. “Expanding our understanding of atmospheric water vapour in the High Arctic.” Presentation at the 9th Annual Scientific Meeting (ASM2013), Halifax,

Nova Scotia, December 2013.

Zhao, X., C. Adams, K. Strong, T. Duck, C. Perro, D. Hudak, and P. Rodriguez. "Cloud identification in the Canadian High Arctic using the UV-visible colour index." Presentation at the European Geosciences Union General Assembly 2014, Vienna, Austria, 27 April - 1 May 2014.

## **Workshop Presentations**

Conway, S., D. Weaver, J. Mendonca, C. Viatte, E. Lutsch, A. Pugliese, and K. Strong. "Eureka site report." Presentation at the Detection of Atmospheric Composition Change (NDACC) Infrared Working Group (IRWG) Meeting, Bad Sulza, Germany, May 2014.

Conway, S. and K. Strong. "Retrievals of Strato-Mesospheric Species at Eureka: A First Look." Presentation at the Detection of Atmospheric Composition Change (NDACC) Infrared Working Group (IRWG) Meeting, Bad Sulza, Germany, May 2014.

Drummond, J.R., "Atmospheric Measurements in the Canadian High Arctic: The PEARL Experience", Presentation at the NORS/NDACC/GAW Workshop, Brussels, Belgium, November 2014

Drummond, J.R., Pierre F. Fogal, Kaley A. Walker, and the CANDAC/PAHA Science Team. "Validation Capacity in the Canadian High Arctic: The Polar Environment Atmospheric Research Laboratory (PEARL)." Presentation at the 1st Arctic Products Validation and Evolution Workshop, Ottawa, Ontario, November 2014.

Griffin, D., K. Walker, K. Strong, F. Kolonjari, S. Conway, L. Dan, G. Manney, C. Boone, P. Bernath, and J. R. Drummond. "Investigating the stratosphere of the High Arctic using three Fourier transform spectrometers instrument intercomparison and validation between 2011 and 2013." Presentation at the Atmospheric Chemistry Experiment (ACE) Science Team Meeting, Waterloo, Ontario, 22-23 October 2014.

Holl, G., K. Walker, S. Conway, and K. Strong. "Comparisons of CH<sub>4</sub> from ACE, GOSAT, PEARL." Presentation at the Atmospheric Chemistry Experiment (ACE) Science Team Meeting, Waterloo, Ontario, May 2014.

Holl, G., K. Walker, S. Conway, N. Saitoh, C. D. Boone, K. Strong, and J. R. Drummond. "Cross-validation between PEARL, GOSAT and ACE for methane measurements." Presentation at the Atmospheric Chemistry Experiment (ACE) Science Team Meeting, Waterloo, Ontario, October 2014.

Mendonca, J. and K. Strong. "Fitting CO<sub>2</sub> Lab spectra to improve TCCON Airmass Dependence." Presentation at the Total Column Carbon Observing Network (TCCON) Meeting, Bad Sulza, Germany, May 2014.

Mendonca, J. and K. Strong. "Ground-based FTIR measurements of greenhouse gases in the Arctic: improving retrievals at high air masses." Presentation at the Environment Canada - Carbon Assimilation Workshop, Toronto, May 2014.

Ryan, N. J. and K. Walker. "Microwave radiometer development at University of Toronto." Presentation at the International Atmospheric Radiative Transfer Simulator (ARTS) Community Workshop, Kristineberg, Sweden, June 2014.

Strong, Kim. "Discussion: High-Latitude TCCON stations." Presentation at the Total Column Carbon Observing Network (TCCON) Meeting, Bad Sulza, Germany, May 2014.

Strong, Kim and CAFTON team. "The Canadian FTIR Observing Network: Probing Atmospheric Composition over Canada using Ground-based FTIR Spectroscopy." Presentation at the Environment Canada - Carbon Assimilation Workshop, Toronto, May 2014.

Strong, K., D. Hudak, N.T. O'Neill, K.A. Walker, S. Conway, D. Griffin, G. Holl, J. Mendonca, D. Weaver, C. Whaley, P. Rodriguez, and A. Saha. "Update on GOSAT Validation Using Eureka and Toronto Ground-Based Measurements and ACE, CloudSat, and CALIPSO Satellite Data." Presentation at the Sixth GOSAT Research Announcement Principal Investigator Workshop,

Tsukuba, Japan, June 2014.

- Tran, S., Z. Mariani, D. Weaver, K. Strong, P. Rowe, V. P. Walden, and M. Palm. “Trace gas retrievals and radiance trends using emission spectroscopy.” Presentation at the Detection of Atmospheric Composition Change (NDACC) Infrared Working Group (IRWG) Meeting, Bad Sulza, Germany, May 2014
- Tran, S., P. Fogal, K. Walker, K. Strong and the Canadian Arctic ACE Validation Team. “Update on the Canadian Arctic ACE Validation Project: 2014.” Presentation at the Detection of Atmospheric Composition Change (NDACC) Infrared Working Group (IRWG) Meeting, Bad Sulza, Germany, May 2014
- Viatte, C., E. Lutsch, K. Strong, J. Hannigan, E. Nussbaumer, L. Emmons, S. Conway, C. Paton-Walsh, J. Hartley, J. Benmergui, J. Lin and Y. Kasai.” FTIR measurements of tropospheric species in the high Arctic to investigate pollution events from fires.” Presentation at the Detection of Atmospheric Composition Change (NDACC) Infrared Working Group (IRWG) Meeting, Bad Sulza, Germany, May 2014.
- Walker, K., K. Strong, and the ACE Arctic Campaign Team. “2014 ACE Arctic Validation Campaign – Post-campaign Report.” Presentation at the Atmospheric Chemistry Experiment (ACE) Science Team Meeting, Waterloo, Ontario, May 2014.
- Walker, K., K. Strong, and the ACE Arctic Campaign Team. “2014 ACE Arctic Validation Campaign Update” Presentation at the Atmospheric Chemistry Experiment (ACE) Science Team Meeting, Waterloo, Ontario, October 2014.
- Wright, M.C., and W.K. Hocking. "Tropospheric Gravity Waves in the Arctic and Non- Arctic Atmosphere and Relevance to the 'Universality' of the Universal Spectrum." Presentation at the 14th International Workshop on Technical and Scientific Aspects of MST Radar plus first joint MST and Ionospheric workshop (MST14/iMST1), held at INPE (Brazilian National Institute for Space Research) Auditorium Fernando de Mendonca, Av. dos Astronautas, 1758 Jd da Granja - Sao Jose dos Campos, Brazil, 25-31 May, 2014.
- Zhao, X., K. Strong, C. Adams, X. Yang, U. Friess, R. Schofield, A. Richter, and A. Blechschmidt. “A transported bromine explosion event in the Canadian High Arctic.” Presentation at the International Workshop on Chemical Atmosphere-Snow-Sea Ice Interactions, Cambridge, UK, October 2014.

## **PAHA/CREATE Workshops**

Plus 19 presentations at the Connaught Summer Institute in Arctic Science, Allison, Canada, July 2014.  
Plus 41 science presentations at the PAHA/CANDAC workshop and CREATE Research Symposium

## **Seminars**

- Holl, Gerrit. “Methane cross-validation using PEARL FTIR-retrieved profiles: comparisons with satellite measurements from ACE-FTS and GOSAT.” Seminar Series for PAHA Post Doctorate Fellows, Telecom format to Co-Is, Research Scientists, Grads and collaborating MSC-EC Scientists and Administrators, October 2014.
- Li, Z., C. Meek, A. Manson.” Sea Surface Temperature, Stationary Waves and Polar Vortex's Impacts on Winter "Cold Events" of North America” Seminar Series for PAHA Post Doctorate Fellows, Telecom format to Co-Is, Research Scientists, Grads and collaborating MSC-EC Scientists and Administrators, October 2014.

## **Reports**

Characteristics of winter 2013/14: SST, PW, ENSO and the Arctic Oscillation (Report:

PDF Zhenhua Li to EC-MSJ; “Cold Events” Central Canada of 65 yrs NCEP and  
'record' Nov 2014.