

Dissemination List 2016

(HQP noted in Bold)

Refereed Papers, Published or In Press

1. **Holl, G.**, Kaley A. Walker, **Stephanie Conway**, Naoko Saitoh, Chris D. Boone, Kimberly Strong, and James R. Drummond Methane cross-validation between three Fourier Transform Spectrometers: SCISAT ACE-FTS, GOSAT TANSO-FTS, and ground-based FTS measurements in the Canadian high Arctic *Atmos. Meas. Tech.*, 9, 1961-1980, doi:10.5194/amt-9-1961-2016.
2. Franco, B., E. Mahieu, L. K. Emmons, Z. A. Tzompa-Sosa, E. V. Fischer, K. Sudo, B. Bovy, **S. Conway**, **D. Griffin**, J. W. Hannigan, K. Strong and K. A. Walker Evaluating ethane and methane emissions associated with the development of oil and natural gas extraction in North America *Environ. Res. Lett.*, 11(4), 044010, doi: 10.1088/1748-9326/11/4/044010
3. O'Neill, N. T., **K. Baibakov**, S. Hesaraki, **L. Ivanescu**, R. V. Martin, **C. Perro**, **J. P. Chaubey**, A. Herber, T. J. Duck, Temporal and spectral screening of polar-winter starphotometry data: impact of homogeneous clouds & low-altitude crystal layers on climatological-scale estimates of aerosol optical depth, *Atmos. Chem. Phys.*, 16, 12753–12765, 2016, doi:10.5194/acp-16-12753-2016
4. Leblanc, Thierry, Robert J. Sica, Joanna A. E. van Gijsel, Sophie Godin-Beekmann, Alexander Haeferle, Thomas Trickl, Guillaume Payen, and Frank Gabarrot, Proposed standardized definitions for vertical resolution and uncertainty in the NDACC lidar ozone and temperature algorithms – Part 1: Vertical resolution, *Atmos. Meas. Tech.*, 9, 4029-4049, doi:10.5194/amt-9-4029-2016, 2016
5. Leblanc, Thierry, Robert J. Sica, Joanna A. E. van Gijsel, Sophie Godin-Beekmann, Alexander Haeferle, Thomas Trickl, Guillaume Payen, and Gianluigi Liberti Proposed standardized definitions for vertical resolution and uncertainty in the NDACC lidar ozone and temperature algorithms -- Part 2: Ozone DIAL uncertainty budget, *Atmos. Meas. Tech.*, 9, 4051-4078, doi:10.5194/amt-9-4051-2016, 2016
6. Leblanc, Thierry, Robert J. Sica, Joanna A. E. van Gijsel, Alexander Haeferle, Guillaume Payen, and Gianluigi Liberti, Proposed standardized definitions for vertical resolution and uncertainty in the NDACC lidar ozone and temperature algorithms – Part 3: Temperature uncertainty budget, *Atmos. Meas. Tech.*, 9, 4079-4101, doi:10.5194/amt-9-4079-2016, 2016
7. Kulawik, S. S., D. Wunch, C. O'Dell, C. Frankenberg, M. Reuter, T. Oda, F. Chevallier, V. Sherlock, M. Buchwitz, G. Osterman, C. Miller, P. Wennberg, D. W. T. Griffith, I. Morino, M. Dubey, N. M. Deutscher, J. Notholt, F. Hase, T. Warneke, R. Sussmann, J. Robinson, K. Strong, M. Schneider, and J. Wolf, Consistent evaluation of GOSAT, SCIAMACHY, CarbonTracker, and MACC through comparisons to TCCON, *Atmos. Meas. Tech.*, 9, 683-709, 2016 doi:10.5194/amt-9-683-2016.
8. **X. Zhao**, K. Strong, **C. Adams**, R. Schofield, X. Yang, A. Richter, U. Friess, A.-M. Blechschmidt, and J.-H. Koo. A case study of a transported bromine explosion event in the Canadian high Arctic, *J. Geophys. Res. Atmos.*, **121 (D1)**, 457–477, doi:10.1002/2015JD023711, 2016.
9. A.-M. Blechschmidt, A. Richter, J.P. Burrows, L. Kaleschke, K. Strong, N. Theys, M. Weber, **X. Zhao**, and A. Zien. An exemplary case of a bromine explosion event linked to cyclone devel-

opment in the Arctic. An exemplary case of a bromine explosion event linked to cyclone development in the Arctic, *Atmos. Chem. Phys.*, **16**, 1773–1788, doi:10.5194/acp-16-1773-2016, 2016.

10. Y. Wang, N.M. Deutscher, M. Palm, T. Warneke, J. Notholt, I. Baker, J. Berry, P. Suntharalingam, N. Jones, E. Mahieu, B. Lejeune, J. Hannigan, **S. Conway**, **J. Mendonca**, K. Strong, J.E. Campbell, A. Wolf, and S. Kremser. Towards understanding the variability in biospheric CO₂ fluxes: using FTIR spectrometry and a chemical transport model to investigate the sources and sinks of carbonyl sulfide and its link to CO₂. *Atmos. Chem. Phys.*, **16**, 2123–2138, doi:10.5194/acp-16-2123-2016, 2016.
11. Z.-C. Zeng, L. Lei, K. Strong, D.B.A. Jones, L. Guo, M. Liu, F. Deng, N.M. Deutscher, M.K. Dubey, D.W.T. Griffith, F. Hase, B. Henderson, R. Kivi, R. Lindenmaier, I. Morino, J. Notholt, H. Ohyama, C. Petri, R. Sussmann, V. Velazco, P.O. Wennberg, and H. Lin. Global land mapping of satellite-observed CO₂ total columns using spatio-temporal geostatistics. *International Journal of Digital Earth*, doi:10.1080/17538947.2016.1156777, pp. 1–31, 2016. J. Mendonca, K. Strong, G.C. Toon, D. Wunch, K. Sung, N. M. Deutscher, D.W.T. Griffith, J.E. Franklin, and P.O. Wennberg. Improving atmospheric CO₂ retrievals using line mixing and speed- dependence when fitting high-resolution ground-based solar spectra. *Journal of Molecular Spectroscopy*, **323**, 15–27 doi:10.1016/j.jms.2016.01.007, 2016.
12. **J. Mendonca**, K. Strong, G.C. Toon, D. Wunch, K. Sung, N. M. Deutscher, D.W.T. Griffith, J.E. Franklin, and P.O. Wennberg. Improving atmospheric CO₂ retrievals using line mixing and speed- dependence when fitting high-resolution ground-based solar spectra. *Journal of Molecular Spectroscopy*, **323**, 15–27 doi:10.1016/j.jms.2016.01.007, 2016.
13. **E. Lutsch**, E. Dammers, **S. Conway**, and K. Strong. Long-range Transport of NH₃, CO, HCN and C₂H₆ from the 2014 Canadian Wildfires. *Geophys. Res. Lett.*, **43**, 8286–8297, doi:10.1002/2016GL070114, 2016.
14. **Z. Mariani**, K. Strong, and J.R. Drummond. Distributions of Downwelling Radiance at 10 and 20 μm in the High Arctic. *Atmosphere-Ocean*, in press, 2016. Published online: 14 Sep 2016. <http://dx.doi.org/10.1080/07055900.2016.1216825>.
15. S.M. Polavarapu, M. Neish, M. Tanguay, C. Girard, J. de Grandpré, K. Semeniuk, S. Gravel, S. Ren, **S. Roche**, D. Chan, and K. Strong. Greenhouse gas simulations with a coupled meteorological and transport model: the predictability of CO₂. *Atmos. Chem. Phys.*, **16**, 12005–12038, doi:10.5194/acp-16-12005-2016, 2016.
16. **X. Zhao**, V. Fioletov, K. Strong, A. Cede, and J. Davies. Accuracy, precision, and temperature dependence of Pandora total ozone measurements estimated from a comparison with the Brewer triad in Toronto. *Atmos. Meas. Tech. Discuss.*, doi:10.5194/amt-2016-252, in press, accepted 9 November 2016. Special Issue: Twenty-five years of operations of the Network for the Detection of Atmospheric Composition Change (NDACC) (AMT/ACP/ESSD inter-journal SI)
17. Seabrook, J., and J. Whiteway, Influence of Mountains on Arctic Tropospheric Ozone, *Journal of Geophysical Research*, **121**, 1935–1942, doi:10.1002/2015JD024114, 2016
18. **Perro, C.**, Lesins, G., Duck, T. J., and Cadeddu, M.: A microwave satellite water vapour column retrieval for polar winter conditions, *Atmos. Meas. Tech.*, **9**, 2241–2252, doi:10.5194/amt-9-2241-2016, 2016.

Refereed Papers, Submitted

1. S. Barthlott, M. Schneider, F. Hase, T. Blumenstock, M. Kiel, D. Dubravica, O. E. Garcia, E. Sepulveda, G. Mengistu Tsidu, S. Takele Kenea, M. Grutter, E.T. Plaza, W. Stremme, K. Strong, D. Weaver, M. Palm, T. Warneke, J. Notholt, E. Mahieu, C. Servais, N. Jones, D.W.T. Griffith, D. Smale, and J. Robinson. Tropospheric water vapour isotopologue data (H_2^{16}O , H_2^{18}O and HD^{16}O) as obtained from NDACC/FTIR solar absorption spectra. *Earth Syst. Sci. Data Discuss.*, doi:10.5194/essd-2016-9, in review, 2016. Submitted 1 March 2016.
2. D.A. Belikov, S. Maksyutov, A. Ganshin, R. Zhuravlev, N.M. Deutscher, D. Wunch, D.G. Feist, R.J. Parker, I. Morino, K. Strong, Y. Yoshida, A. Bril, S. Oshchepkov, R. Kivi, H. Boesch, D. Griffith, M.K. Dubey, W. Hewson, **J. Mendonca**, J. Notholt, M. Schneider, R. Sussmann, V. Velazco, and S. Aoki. Study of the footprints of short-term variation in XCO_2 observed by TCCON sites using NIES and FLEXPART atmospheric transport models. *Atmos. Chem. Phys. Discuss.*, doi:10.5194/acp-2016-201, in review, 2016. Submitted 8 March 2016.
3. **J. Mendonca**, K. Strong, K. Sung, V.M. Devi, G.C. Toon, D. Wunch and J.E. Franklin. Using High-Resolution Laboratory and Ground-Based Solar Spectra to Assess CH_4 Absorption Coefficient Calculations. Submitted to *Journal of Quantitative Spectroscopy and Radiative Transfer* (special issue on Satellite Remote Sensing of the Atmosphere), 21 June 2016.
4. D. Wunch, P.O. Wennberg, G. Osterman, B. Fisher, B. Naylor, C.M. Roehl, C. O'Dell, L. Mandrake, C. Viatte, D.W.T. Griffith, N.M. Deutscher, V.A. Velazco, J. Notholt, T. Warneke, C. Petri, M. De Maziere, M.K. Sha, R. Sussmann, M. Rettinger, D. Pollard, J. Robinson, I. Morino, O. Uchino, F. Hase, T. Blumenstock, M. Kiel, D.G. Feist, S.G. Arnold, K. Strong, **J. Mendonca**, R. Kivi, P. Heikkinen, L. Iraci, J. Podolske, P. Hillyard, S. Kawakami, M. Dubey, H.A. Parker, E. Sepulveda, O.E.G. Rodriguez, Y. Te, P. Jeseck, M.R. Gunson, D. Crisp, and A. Eldering. Comparisons of the Orbiting Carbon Observatory-2 (OCO-2) XCO_2 measurements with TCCON. *Atmos. Meas. Tech. Discuss.*, doi:10.5194/amt-2016-227, in review, 2016. Submitted 6 July 2016.
5. R.R. Buchholz, M.N. Deeter, H.M. Worden, J. Gille, D.P. Edwards, J.W. Hannigan, N.B. Jones, C. Pation-Walsh, D.W.T. Griffith, D. Smale, J. Robinson, K. Strong, **S. Conway**, R. Sussmann, F. Hase, T. Blumenstock, E. Mahieu, and B. Langerock. Validation of MOPITT carbon monoxide using ground-based Fourier transform infrared spectrometer data from NDACC. *Atmos. Meas. Tech. Discuss.*, doi:10.5194/amt-2016-241, in review, 2016. Submitted 18 July 2016.
6. W. Bader, B. Bovy, **S. Conway**, K. Strong, D. Smale, A. J. Turner, T. Blumenstock, C. Boone, A. Coulon, O. Garcia, D. Griffith, F. Hase, P. Hausmann, N. Jones, P. Krummel, I. Murata, I. Morino, H. Nakajima, S. O'Doherty, C. Paton-Walsh, J. Robinson, R. Sandrin, M. Schneider, C. Servais, R. Sussmann, and E. Mahieu. Ten years of atmospheric methane from ground-based NDACC FTIR observations. *Atmos. Chem. Phys. Discuss.*, doi:10.5194/acp-2016-699, in review, 2016. Submitted 2 August 2016. Special Issue: Twenty-five years of operations of the Network for the Detection of Atmospheric Composition Change (NDACC) (AMT/ACP/ESSD inter-journal SI)
7. Z.A. Tzompa-Sosa, E.V. Fischer, E. Mahieu, B. Franco, C.A. Keller, A. Turner, D. Helmig, A. Fried, D. Richter, P. Weibring, J. Walega, T.I. Yacovitch, S.C. Herndon, D.R. Blake, F. Hase, J.W. Hannigan, **S. Conway**, K. Strong, and M. Schneider. Revisiting a global budget of ethane. Submitted to *J. Geophys. Res. Atmos.*, 11 August 2016.
8. **D. Griffin**, K.A. Walker, **S. Conway**, **F. Kolonjari**, K. Strong, **R. Batchelor**, C.D. Boone, **L. Dan**, J.R. Drummond, P.F. Fogal, **D. Fu**, **R. Lindenmaier**, G.L. Manney, and **D. Weaver**.

Multi-year comparisons of ground-based and space-borne Fourier Transform Spectrometers in the high Arctic between 2006 and 2013, *Atmos. Meas. Tech. Discuss.*, submitted 18 Aug 2016. doi:10.5194/amt-2016-272

9. L. Feng, P.I. Palmer, H. Bösch, R.J. Parker, A.J. Webb, C.S.C. Correia, N.M. Deutscher, L.G. Domingues, D. G. Feist, L.V. Gatti, E. Gloor, F. Hase, R. Kivi, Y. Liu, J.B. Miller, I. Morino, R. Sussmann, K. Strong, O. Uchino, J. Wang, and A. Zahn. Consistent regional fluxes of CH₄ and CO₂ inferred from GOSAT proxy XCH₄:XCO₂ retrievals, 2010-2014. *Atmos. Chem. Phys. Discuss.*, doi:10.5194/acp-2016-868, in review, 2016. Submitted 28 September 2016.
10. **D. Weaver**, K. Strong, M. Schneider, P. Rowe, C. Sioris, K. Walker, Z. Mariani, T. Uttal, C.T. McElroy, A. Spassiani, and J.R. Drummond. Intercomparison of atmospheric water vapour measurements in the Canadian high Arctic. Submitted to *Atmos. Meas. Tech.*, submitted 18 Aug 2016. doi:10.5194/amt-2016-272
11. E. Peters, G. Pinardi, A. Seyler, A. Richter, F. Wittrock, T. Bösch, J.P. Burrows, M. Van Roozen-dael, F. Hendrick, T. Drosoglou, A.F. Bais, Y. Kanaya, **X. Zhao**, K. Strong, J. Lampel, R. Volkamer, T. Koenig, I. Ortega, A. Piters, O. Puentedura, M. Navarro, L. Gomez, M.Y. Gonzalez, J. Remmers, Y. Wang, T. Wagner, S. Wang, A. Saiz-Lopez, D. García-Nieto, C.A. Cuevas, N. Benavent, R. Querel, P. Johnston, O. Postlyakov, A. Borovski, A. Elovkov, I. Bruchkovski, C. Li, Q. Hong, H. Liu, C. Rivera, M. Grutter, W. Stremme, M.F. Khokhar, and J. Khayyam. Investigating differences in DOAS retrieval codes using MAD-CAT campaign data. Submitted to *Atmos. Meas. Tech.*, doi:10.5194/amt-2016-358, in review
12. **B. Byrne**, D.B.A. Jones, K. Strong, Z.-C. Zeng, F. Deng, and J. Liu. Sensitivity of CO₂ surface flux constraints to observational coverage. Submitted to *J. Geophys. Res. Atmos.*, 28 October 2016.
13. Hesarakis, S., N. T. O'Neill, Lesins, G., Saha, A., R. V. Martin, V. E. Fioletov, **K. Baibakov** Polar summer comparisons of a chemical transport model with a 4-year analysis of fine and coarse mode aerosol optical depth retrievals over the Canadian Arctic, Submitted to *Atmosphere-Ocean*, 29 August, 2016
14. **Blanchard, Y.**, A. Royer, N. T. O'Neill, D. D. Turner and E. W. Eloranta Thin ice clouds in the Arctic: Cloud optical depth and particle size retrieved from ground-based thermal infrared radiometry Submitted to *Atmos. Chem. Phys. Special Issue: Twenty-five years of operations of the Network for the Detection of Atmospheric Composition Change (NDACC)* (AMT/ACP/ESSD inter-journal SI) doi:10.5194/amt-2016-371, in review
15. Swarnalingam, N., W. K. Hocking, D. Janches, and J. Drummond, Observation of Polar Mesosphere Summer Echoes Using the Northernmost MST Radar at Eureka (80°N), *J. Atmos. Solar-Terr. Phys.*, submitted, 2016.

Theses/Reports for Higher Degrees

1. Bognar, Kristof. Monitoring the stratosphere and detection of a bromine explosion event at 80 ° North. MSc thesis, University of Toronto, Toronto, ON, August 2016.
2. Griffin, Debora, Investigation of tropospheric pollutants and stratospheric ozone using infrared Fourier Transform Spectrometers from the ground, space and balloons, Ph.D. thesis, University of Toronto, Toronto, ON, December 2016
3. Hesarak, Sareh, Les comparaisons d'été polaires d'un modèle de transport chimique avec une analyse de 4 ans des mesureurs d'épaisseur optique des aérosols en composantes fines et grossières dans l'Arctique canadien, Mémoire de maîtrise (MSc thesis), accepted with minor revisions, Université de Sherbrooke, October, 2016
4. 4. Sandrin, Rodrigue. Trend analysis of trace gas species over Toronto and Eureka (Arctic). MSc report, Claude Bernard Lyon 1 University, Lyons, France, September 2016 (international visiting MSc student).

Conference and Workshop Presentations (first author is almost always the presenter)

1. **Shayamila Mahagammulla Gamage**, Robert Sica, Alexander Haeefe, "Rotational Raman Temperature Retrievals Using the RALMO Measurements: Traditional Method and Towards Developing a Forward Model for the OEM" NDACC Lidar Group Meeting 2016, Switzerland
2. **VanKerkhove, J.**, Sica, R., Wing, R., Argall, S., Characterizing the Purple Crow Lidar Water Vapour Lidar to investigate potential sources of bias, NDACC Lidar Working Group Meeting, MeteoSwiss, Payerne, Switzerland
3. **Hicks, Shannon**, Sica, R.J., Haeefe, Alexander, A Multi-year Water Vapour Mixing Ratio Climatology using the MeteoSwiss RALMO Step 1: Lidar Calibration, NDACC Lidar Working Group Meeting . MeteoSwiss, Payerne, Switzerland.
4. **Ali Jalali**, R.J. Sica, Purple Crow Lidar Rayleigh-scatter temperature climatology determined using an optimal estimation method, NDACC Lidar Working Group Meeting . MeteoSwiss, Payerne, Switzerland.
5. **Ghazal Farhani**, The Stratospheric Ozone Profile Retrieval, Using OEM, NDACC Lidar Working Group Meeting, Switzerland, June, 2016.
6. **Bauer, R.**, K. A. Walker, **S. Conway**, K. Strong, C. D. Boone, and P. F. Bernath, Validation of satellite measurements of ozone depleting substances over the Canadian high Arctic, Atmospheric Chemistry Experiment (ACE) Science Team Meeting, Waterloo, ON, 24-45 October 2016
7. Fogal, P., K. Walker, K. Strong, and the ACE/OSIRIS Arctic Campaign Team, ACE/OSIRIS Arctic Validation Campaign at Eureka – 2016, Joint TCCON / NDACC IRWG Meeting, Jeju, Korea, 30 May - 3 June 2016.
8. Walker, K.A., K. Strong, and the ACE/OSIRIS Arctic Campaign Team 2016, ACE/OSIRIS Arctic Validation Campaign Update, Atmospheric Chemistry Experiment (ACE) Science Team Meeting, Waterloo, ON, 24-45 October 2016.

9. Walker, K.A., K. Strong, and the ACE/OSIRIS Arctic Campaign Team 2016, ACE/OSIRIS Arctic Validation Campaign Post-campaign Report – 2016, Atmospheric Chemistry Experiment (ACE) Science Team Meeting, Waterloo, ON, 17-18 May 2016
10. McElroy, C. T., and Z. Vaziri Zanjani, Ozone Data from SPS and Brewer Ozone Data for the 2016 ACE Campaign Atmospheric Chemistry Experiment (ACE) Science Team Meeting, Waterloo, ON, 24-25 October 2016.
11. Walker, K.A., K. Strong, P. F. Fogal, J. R. Drummond and the Canadian Arctic ACE/OSIRIS Validation Campaign Team, The Canadian Arctic ACE/OSIRIS Validation Project at PEARL: Validating Satellite Observations Over the High Arctic, European Geosciences Union General Assembly 2016, Vienna, Austria, 17-22 April
12. Aboel Fetouh, Y., N.T.O'Neill, R. Martin, Preliminary model evaluation of second order aerosol parameter's using ground based measurements over the Arctic, AGU fall meeting, San Francisco, CA, Dec. 12-16, 2016
13. Ranjbar, K., O'Neill, N. T., A. Herber, **J. Chaubey**, R. Martin, Y. Aboel Fetouh, Polar winter sea-salt events over the high Arctic over the high-Arctic research station of Ny Alesund, Spitsbergen, AGU fall meeting, San Francisco, CA, Dec. 12-16, 2016
14. **Chaubey, J. P.**, D. Perez Ramirez, N. T. O'Neill, Evaluation and inter-comparison of AERONET inversion parameters from the SDA (Spectral Deconvolution Algorithm) and the Dubovik inversion for distinct aerosol conditions, AGU fall meeting, San Francisco, CA, Dec. 12-16, 2016
15. **Bauer, R.**, K. A. Walker, **S. Conway**, K. Strong, C. D. Boone and P. F. Bernath, Validation of satellite measurements of ozone depleting substances over the Canadian high Arctic, Quadrennial Ozone Symposium, Edinburgh, Scotland, 4-9 September 2016.
16. O'Neill, N. T. An overview of the status of aerosol optical measurements in the high Arctic, 37th Review of Atmospheric Transmission Models Meeting (ATM), July 26, 2016
17. O'Neill, N. T., C. Tomasi, A. Herber, R. Stone, **K. Baibakov**, **L. Ivanescu**, S. Hesaraki, A. Saha, R. Martin, **J. Chaubey**, T. Duck, Y. A. Fetouh, K. Ranjbar, Overview of aerosol remote sensing in the Arctic, AGU fall meeting, San Francisco, CA, Dec. 12-16, 2016
18. J. Hannigan, M. Palm, **S. Conway**, E. Mahieu, D. Smale, E. Nussbaumer, K. Strong, and J. Notholt. Current Trends in Carbon Tetrachloride from several NDACC FTIR stations. SPARC Workshop on "Solving the Mystery of Carbon Tetrachloride", Zurich, Switzerland, 4-6 October 2015.
19. P. Fogal, **S. Conway**, K. Strong, J. Drummond, and R. Mittermeier. Re-analyses of a long term infrared spectral sunrise data set recorded at Eureka, NU, 2000-2008. ArcticNet Annual Scientific Meeting, Vancouver, BC, 7-11 December 2015.
20. K.A. Walker, K. Strong, P.Fogal, J.R. Drummond and the Canadian Arctic ACE/OSIRIS Validation Campaign Team. Validating Canadian Satellite Observations Over the High Arctic: The Canadian Arctic ACE/OSIRIS Validation Project at PEARL. ArcticNet Annual Scientific Meeting, Vancouver, BC, 7-11 December 2015.
21. **S. Tran**, Z. Mariani, M. Palm, **S. Conway**, **E. Lutsch**, P. Rowe, Y. Kasai and K. Strong. Investigation of Seasonal Cycles of CO, CH₄, N₂O, and O₃ in the High Arctic at Eureka (Canada) and Barrow (Alaska) using Infrared Emission Spectroscopy. Fall Meeting of the American Geophysical Union, San Francisco, CA, USA, 14-18 December 2015.

22. S. Polavarapu, M. Neish, M. Tanguay, C. Girard, J. de Grandpré, S. Gravel, K. Semeniuk, **S. Roche**, D. Chan, K. Strong and TCCON partners. Adapting a weather forecast model for greenhouse gas simulation. Fall Meeting of the American Geophysical Union, San Francisco, CA, USA, 14-18 December 2015.
23. A.-M. Blechschmidt, A. Richter, J.P. Burrows, L. Kaleschke, K. Strong, N. Theys, M. Weber, **X. Zhao**, A. Zien, and K.I. Hodges. A satellite based study of tropospheric bromine explosion events and their linkages to polar cyclone development. European Geosciences Union General Assembly 2016, Vienna, Austria, 17-22 April 2016.
24. B. Franco, E. Mahieu, L.K. Emmons, Z.A. Tzompa-Sosa, E.V. Fischer, K. Sudo, B. Bovy, **S. Conway**, **D. Griffin**, J.W. Hannigan, M.G. Schultz, K. Strong and K.A. Walker. Investigating ethane and associated methane increases from the North American oil and gas boom. European Geosciences Union General Assembly 2016, Vienna, Austria, 17-22 April 2016. PICO (Presenting Interactive Content) presentation.
25. F. Goutail, F. Lefèvre, A. Pazmiño, J. P. Pommereau, M. Chipperfield, W. Feng, M. Van Roozendael, P. Eriksen, K. Stebel, R. Kivi, **K. Bogner**, **X. Zhao**, K. Walker, and K. Strong. Ozone loss in the Arctic winter 2015/2016. European Geosciences Union General Assembly 2016, Vienna, Austria, 17-22 April 2016.
26. E. Peters, G. Pinardi, T. Bösch, F. Wittrock, A. Richter, J.P. Burrows, M. Van Roozendael, A. Piters, T. Wagner, T. Drosoglou, A. Bais, S. Wang, A. Saiz-Lopez and the Extended QA4ECV MAXDOAS Team (F. Hendrick, C. Gielen, J. Remmers, Y. Wang, D. Garcia Nieto, C.A. Cuevas, J. Lampel, **X. Zhao**, K. Strong, T. Koenig, I. Ortega, B. Dix, R. Volkamer, Y. Kanaya, O. Puertedura, M. Navarro, L. Gomez, M. Yela Gonzalez, R. Querel, P. Johnston, O. Postylyakov, A. Borovski, I. Bruchkouski, C. Liu, Q. Hong). Intercomparison of MAX-DOAS NO₂ retrieval algorithms. European Geosciences Union General Assembly 2016, Vienna, Austria, 17-22 April 2016.
27. G. Pinardi, E. Peters, F. Hendrick, C. Gielen, M. Van Roozendael, A. Richter, A. Piters, T. Wagner, Y. Wang, T. Drosoglou, A. Bais, S. Wang, A. Saiz Lopez and the extended QA4ECV MAXDOAS Team (T. Boesch, F. Wittrock, J. Lampel, K. Strong, **X. Zhao**, R. Volkamer, I. Ortega, T. Koenig, B. Dix, Y. Kanaya, O. Puertedura, M. Navarro, L. Gomez, M. Yela Gonzalez, J. Remmers, D. Garcia Nieto, C.A. Cuevas, R. Querel, P. Johnston, O. Postylyakov, A. Borovski, I. Bruchkouski, C. Liu, Q. Hong, J. Jin, J. Ma and H. Irie). HCHO and NO₂ MAX-DOAS retrieval strategies harmonization: Recent results from the EU FP7 project QA4ECV. European Geosciences Union General Assembly 2016, Vienna, Austria, 17-22 April 2016.
28. Y. Wang, J. Marshall, M. Palm, N. Deutscher, C. Roedenbeck, T. Warneke, J. Notholt, I. Baker, J. Berry, P. Suntharalingam, N. Jones, E. Mahieu, B. Lejeune, J. Hannigan, **S. Conway**, K. Strong, E. Campbell, A. Wolf, and S. Kremser. Using NDACC column measurements of carbonyl sulfide to estimate its sources and sinks. European Geosciences Union General Assembly 2016, Vienna, Austria, 17-22 April 2016. PICO (Presenting Interactive Content) presentation.
29. **B. Byrne**, D. Jones, and K. Strong. Sensitivity of CO₂ Flux Inversions to the Temporal and Spatial Distribution of Observations. NOAA ESRL Global Monitoring Annual Conference 2016. Boulder, Colorado, USA, 17-18 May 2016.
30. K. Strong, **S. Conway**, **D. Weaver**, **E. Lutsch**, **J. Mendonca**, **S. Roche**, **S. Tran**, and P. Fogal. Eureka Site Report. Joint TCCON / NDACC IRWG Meeting, Jeju, South Korea, 30 May - 3 June 2016.

31. **E. Lutsch**, E. Dammers, **S. Conway**, and K. Strong. Long-range Transport of NH_3 , CO, HCN and C_2H_6 from the 2014 Canadian Wildfires. Joint TCCON / NDACC IRWG Meeting, Jeju, South Korea, 30 May - 3 June 2016.
32. **D. Weaver**, K. Strong, N. Deutscher, M. Schneider and the MUSICA and TCCON teams. Inter-comparison of water vapour products update. Joint TCCON / NDACC IRWG Meeting, Jeju, South Korea, 30 May - 3 June 2016.
33. **S. Roche**, K. Strong, S. Polavarapu, M. Neish, B.J. Connor, and **J. Mendonca**. Eureka TCCON update, model comparisons, line mixing and profile retrievals. Joint TCCON / NDACC IRWG Meeting, Jeju, South Korea, 30 May - 3 June 2016.
34. **S. Tran**, **Z. Mariani**, **E. Lutsch**, **S. Conway**, M. Palm, **X. Zhao**, P. Rowe, G. Manney, L. Millan and K. Strong. Trace Gas Retrievals in the Canadian High Arctic Using InfraRed Emission Spectroscopy. Joint TCCON / NDACC IRWG Meeting, Jeju, South Korea, 30 May - 3 June 2016.
35. K. Strong, “Arctic Science, Present and Future – Briefs from the Arctic Atmosphere”, Institute for 21st Century Questions/Global Brief/Canadian Forces College Conference on The West, Canada & Russia, Toronto, 13-14 June 2016. Invited talk.
36. **S. Tran**, **Z. Mariani**, **E. Lutsch**, **S. Conway**, M. Palm, P. Rowe, G. Manney, L. Millan and K. Strong. Carbon Monoxide and Ozone measurements in the Canadian High Arctic using infrared emission spectroscopy. 2016 Canadian Association of Physicists (CAP) Congress, Ottawa, ON, 13-17 June 2016.
37. **X. Zhao**, V. Fioletov, K. Strong, A. Cede, and J. Davies. Accuracy, precision, and temperature dependence of Pandora total ozone measurements estimated from a comparison with the Brewer Triad in Toronto. Quadrennial Ozone Symposium of the International Ozone Commission, Edinburgh, UK, 4-9 September 2016.
38. F. Goutail, F. Lefèvre, A. Pazmiño, J.P. Pommereau, M. Chipperfield, W. Feng, M. Van Roozendael, P. Eriksen, K. Stebel, R. Kivi, **K. Bognar**, **X. Zhao**, K. Walker, and K. Strong. Twenty-two years Arctic ozone depletion observations and simulations. Is there a trend? Quadrennial Ozone Symposium of the International Ozone Commission, Edinburgh, UK, 4-9 September 2016.
39. C. Vigouroux, M. De Mazière, N. Jones, **E. Lutsch**, M. Makarova, J. Notholt; D. Smale, R. Sussmann, W. Stremme, C.A. Guarin, M. Rettinger, J. Robinson, K. Strong, M. Palm, A. Poberovskii, T. Stavrou, J.-F. Müller, and M. Bauwens. Harmonization of HCHO products from NDACC solar absorption FTIR measurements in view of satellite and model validation. European Space Agency’s fifth workshop on Atmospheric Composition Validation and Calibration (ACVE 2016), ESRIN, Frascati, Italy, 18-20 October 2016.
40. Aboel Fetouh, Y., N.T.O’Neill, R. Martin, Preliminary model evaluation of second order aerosol parameter’s using ground based measurements over the Arctic, AGU fall meeting, San Francisco, CA, Dec. 12-16, 2016
41. Walker, Kaley A., “Using spectroscopy to investigate atmospheric composition”, 99th Canadian Chemistry Conference – symposium on “Spectroscopy: Fundamental Research and Applications”, Halifax, Nova Scotia, 4-9 June 2016. Invited talk
42. W.E. Ward, V.I. Fomichev and J. Du, Effects of Dynamical Variability in the Mesosphere and Lower Thermosphere on Energetics and Constituents, International Symposium on the Whole Atmosphere (ISWA), Tokyo, Japan, September, 2016.

43. W.E. Ward, Alan Manson, Marianna Shepherd, Qian Wu, Wayne Hocking, Chris Meek, Caroline Gi, Sam Kristoffersen and Chris Vail, Dynamics of the Neutral Thermosphere (DNT): Probing coupling between the mesopause and lower thermosphere, 2016 URSI Asia Pacific Radio Science Conference, Seoul, Korea, August, 2016.
44. S. Kristoffersen, W.E. Ward, C. Meek, A. Manson, Mesosphere Wind and Airglow Irradiance Observations in Eureka, Nu., 2016 Joint Scientific Congress of CMOS and CGU, Fredericton, Canada, May 2016.
45. C. Vail, W.E. Ward, S. Kristoffersen, U. Das, Gravity Wave Parameters observed over Eureka, Nunavut using the PEARL All Sky Imager, 2016 Joint Scientific Congress of CMOS and CGU, Fredericton, Canada, May 2016.
46. W.E. Ward, A. Manson, M. Shepherd, Q. Wu, and W. Hocking, Dynamics of the Neutral Thermosphere (DNT): Project Summary – 2015, Geospace Observatory Meeting, Montreal, Canada, May, 2016.
47. W.E. Ward, J. Langille, S. Kristoffersen, C. Vail, Variability in Airglow Observables, 3rd International Antarctic Gravity Wave Instrument Network Workshop. Cambridge, UK, April, 2016.

PAHA-EC Research Teleconference Presentations

1. Polavarapu, Saroja and Sebastien Roche, The ECCO Carbon Assimilation System (EC-CAS): Validation with TCCON observations, PAHA-EC Research Teleconference Presentations, January, 2016
2. Chang, Rachel, Patrick Hayes and Richard Leaitch, Aerosol size and chemical composition at PEARL, PAHA-EC Research Teleconference Presentations, February, 2016
3. Uttal, Taniel, How IASOA develops Cyberinfrastructure and Collaboratory Support for the Integration of Arctic Atmospheric Research Opportunities for PAHA-EC, PAHA-EC Research Teleconference Presentations, March, 2016
4. von Salzen, Knut, Modelling of Arctic Aerosols and Climate, PAHA-EC Research Teleconference Presentations, April, 2016
5. Samy, Yasmin, CCCma / PAHA collaboration on CanAM Arctic comparisons with aerosol optical retrievals : focus on intensive (per particle) regional parameters, PAHA-EC Research Teleconference Presentations, April, 2016
6. Zhao, Xiaoyi, Accuracy, precision, and temperature dependence of Pandora total ozone measurements estimated from a comparison with the Brewer triad in Toronto, PAHA-EC Research Teleconference Presentations, September, 2016
7. Chaubey, Jai, Evaluation and intercomparison of aerosol parameters from the SDA versus the AERONET inversion algorithm over the Arctic, PAHA-EC Research Teleconference Presentations, October, 2016
8. Li, Zhenhua, Stratospheric polar vortex characteristics and winter temperature anomalies in North America, PAHA-EC Research Teleconference Presentations, November, 2016

Annual PAHA/CANDAC Workshop - May 2016

1. J.R. Drummond, “PAHA/CANDAC Report”, Probing the Atmosphere of the High

Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.

2. K. Strong, “Composition Measurements (CM) Theme Overview and Update”, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
3. S. Polavarapu D. Chan and M. Neish, “The EC Carbon Assimilation System: Comparison to Measurements”, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
4. S. Tran, Z. Mariani, E. Lutsch, S. Conway, M. Palm, P. Rowe, G. Manney, L. Millan and K. Strong, Trace gas measurements in the Canadian High Arctic using infrared emission spectroscopy, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
5. Ray Nassar, Chris E. Sioris, Chris McLinden, Tom McElroy, Kaley A. Walker and Dylan B.A. Jones, Plans and Progress Toward Greenhouse Gas Observations in the Arctic and Boreal Regions from a HEO mission, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
6. P. Hayes, R. Chang, B. Croft, J. Drummond, W.R. Leaitch, S. Sharma, F. Kolonjari, N.T. O'Neill and P. Fogal, Aerosol Size and Chemical Composition at PEARL, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
7. K. A Walker, “Update on Satellite Validation (SV) Theme”, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
8. R. Bauer, Kaley A. Walker, Stephanie Conway, Kim Strong, Chris D. Boone and Peter F. Bernath, Validating satellite measurements over the Canadian high Arctic, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
9. P. Fogal, “PEARL Site Report”, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
10. Zen Mariani, Armin Dehghan, Gabrielle Gascon, Paul Joe and Stella Melo, The Iqaluit Supersite for Meteorological Observations, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
11. Alexey B. Tikhomirov, Glen Lesins and James R. Drummond, The PEARL Drone: Probing Arctic Atmosphere with Unmanned Aerial Vehicle, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
12. O'Neill, N. T., K. Baibakov, S. Hesaraki, L. Ivanescu, R. V. Martin, C. Perro, J. P. Chaubey, A. Herber and T. J. Duck, Temporal and spectral cloud screening of polar-winter AODs : climatological-scale impact of homogeneous and inhomogeneous clouds, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
13. Jai Prakash Chaubey, Norman T O'Neill, Gaige Kerr and Knut Vol Salzen, Aerosol Absorption Optical Depth over the Arctic: Regional Statistics and Model Comparisons, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
14. Zhenhua Li Alan Manson and Chris Meek, Polar Vortex and Persistent Cold Weather Events in Central-Eastern North America, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.

15. Q. Libois, L. Ivanescu and J-P. Blanchet, A Far-Infrared Radiometer to Study Optically Thin Ice Clouds at Eureka, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
16. William E. Ward and the DNT Team (Wayne Hocking, Alan Manson, Chris Meek, Marianna Shepherd, Qian Wu, Caroline Gi, Sam Kristoffersen and Chris Vail), Polar Middle Atmosphere: Latitudinal and Vertical Coupling, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
17. Glen Lesins, James Drummond, Alexey Tikhomirov, Yan Tsehtik and Robert Albee, Winter Sensible Heat Flux Measurements from the Eureka Flux Tower, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
18. A. Saha, N.T. O'Neill, I. Abboud, V.Fioletov, K.Strong, R.Stone and A.Herber, Arctic-wide climatology of Aerosol Optical Properties, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
19. A. O'Grady and K. Walker, "CANDAC Outreach Update", Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
20. Y. Tsehtik and J.R. Drummond, "CANDAC Data Management Systems", Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
21. R. J. Sica and A. Haeferle, Retrieval of Temperature and Water Vapor from Multiple Channel Lidar Systems Using an Optimal Estimation Method, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
22. Chris Meek and Alan Manson, The 2015-2016 winter at Eureka as seen by the meteor radar, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
23. Emily McCullough, Chris Perro and J. R. Drummond, CRL Lidar Data Processing Strategies for Comparison with other PAHA Measurements, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.
24. Ludovick S.Pelletier, Q. Libois, E. McCullough and J-P. Blanchet, Far Infrared Radiometer campaign at Eureka. A case study of observed ice clouds, Probing the Atmosphere of the High Arctic/Canadian Network for the Detection of Atmospheric Change PAHA/CANDAC Workshop, Toronto, May 2016.

Annual NSERC CREATE-AAS Research Symposium – May 2016

1. K. Strong, "Welcome and Introduction to the NSERC CREATE-AAS Research Symposium", Natural Sciences and Engineering Council Collaborative Research and Training Experience - Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
2. Ali Jalali and R. J. Sica, Validation of Optimal Estimation Method Using PCL Rayleigh Measurements, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.

3. Joseph Mendonca and Kimberly Strong, Measurements of Greenhouse Gases at Eureka, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
4. Brendan Byrne, Kim Strong, and Dylan Jones, Sensitivity of CO₂ Flux Inversions to the Temporal and Spatial Distribution of Observations, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
5. K. Ranjbar and O'Neill, N. T, Natural Aerosol Events in the Arctic, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
6. Liviu Ivănescu, N.T. O'Neill, K. Baibakov, J-P. Blanchet, Y. Blanchard and K. Schulz, Calibration aspects in star-photometry, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
7. Xiaoyi Zhao, V. Fioletov, K. Strong, A. Cede, and J. Davies, Accuracy, Precision, and Temperature Dependence of Pandora Total Ozone Measurements Estimated From a Comparison with the Brewer Triad in Toronto, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
8. Samuel Kristoffersen, William Ward, Chris Meek, and Alan Manson, Mesosphere Wind and Airglow Observations Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
9. Chris Vail, and William Ward, Gravity Wave Variations Using the All-Sky Imager Between 2013-2014, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
10. Kristof Bogner, Xiaoyi Zhao and Kimberly Strong, Ground Based Spectrometers at PEARL: Preliminary Results and Plans for 2016, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
11. Shannon Hicks, Developing the RALMO Water Vapour Climatology using an Optimal Estimation Method, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
12. Jeff van Kerkhove, Characterizing the Purple Crow Lidar Raman channels to Investigate Potential Sources of Wet Bias, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
13. G. Farhani, A. Tikhomirov, E. McCullough, R. Sica and J. Drummond, Ozone profiles retrieval from the PEARL's Stratospheric Ozone Differential Absorption Lidar Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
14. Erik Lutsch, E. Dammers, S. Conway and K. Strong, Long-range Transport of NH₃, CO, HCN and C₂H₆ from the 2014 Canadian Wildfires, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
15. Sébastien Roche, Kimberly Strong, Saroja Polavarapu, Michael Neish and Brian J. Connor, Validation of GEM-MACH-GHG with TCCON observations, and profile retrievals of CO₂, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.
16. Dan Weaver, Update on Water Vapour Intercomparisons at Eureka, Arctic Atmospheric Science NSERC CREATE-AAS Research Symposium, Toronto, May 2016.

Social Media (Counted by platform rather than individual postings)

1. Twitter (<https://twitter.com/createarcticsci>),
2. Facebook (<https://www.facebook.com/CanadianArcticScience/>),
3. Instagram (<https://www.instagram.com/createarcticsci/>),
4. Blog (createarcticscience.wordpress.com).

Observational Data Records – these are defined as being sent to external international organisations and databases

1. Windprofiler (aka VHF Radar) data are sent on an hourly basis to EC, NOAA and the UK Met Office. NOAA, the UK Met Office and ECMWF use the data in preparing forecasts.
2. Bruker 125HR FTIR mid-infrared data (2006-2014) were reprocessed using SFIT4 and submitted to the NDACC archive in June 2015 (<ftp://ftp.cpc.ncep.noaa.gov/ndacc/station/eureka/hdf/ftir/>). CO data (2006-2016) was recently reanalyzed as part of the European Union project QA4ECV (Quality Assurance for Essential Climate Variables) to support Rapid Delivery of NDACC data to support the model validation activities in the Copernicus Atmosphere Monitoring Service, and these data files were uploaded to NDACC in November 2016. All data from 2015-2016 has been processed and will be uploaded to NDACC shortly.
3. Bruker 125HR FTIR mid-infrared data (2006-2014) were processed to retrieve water vapour using MUSICA analysis protocols and submitted to the NDACC archive in January 2016 (<ftp://ftp.cpc.ncep.noaa.gov/ndacc/MUSICA/eureka/hdf/ftir/>) and on the DOI-registered Zenodo archive in April 2016 (<http://dx.doi.org/10.5281/zenodo.48902>).
4. New Bruker 125HR FTIR near-infrared data (March 2014 to Sept 2015) were processed and added to existing data on TCCON database in October 2015 (<ftp://tccon.ornl.gov/2014Public/eureka01/>). The complete dataset (2006-2016) was reprocessed with some corrections and submitted to the TCCON/CDIAC archive in September 2016 and will be publicly available soon.
5. PEARL-GBS and UT-GBS ozone and NO₂ data (1999-2012) are on the NDACC archive in NASA Ames format (<ftp://ftp.cpc.ncep.noaa.gov/ndacc/station/eureka/ames/uvvis/>). Plans are underway to finish processing the 2013-2016 data and to upload all of the data in HDF format.
6. CIMEL data are submitted to the AERONET archive (http://aeronet.gsfc.nasa.gov/cgi-bin/webtool_opera_v2_new).
7. As part of the CSA-sponsored DNT project, we are archiving data from several upper atmosphere instruments and similar instruments in other Arctic locations. These data are available through our website. These data records are not included in our archive totals below.

Data Analysis Algorithms and/or Model Code

1. Contributions to SFIT4 – a code used by NDACC and other networks for trace gas retrievals from mid-infrared spectra recorded by (mainly) Fourier Transform Spectrometers.
2. Contributions to the GGG/GFIT codes that are used by TCCON for the analysis of near-infrared spectra recorded by Fourier Transform Spectrometers, particularly for the retrieval of CO₂ column amounts.
3. Application of the QDOAS code used for the interpretation of data from Differential Absorption Spectroscopy applied to atmospheric problems.
4. Development of new lidar analysis codes for retrieval of water vapour mixing ratio and temperature which greatly enhance the scientific capabilities of the CANDAC lidars using optimal estimation methods

Reports

1. Probing the Atmosphere of the High Arctic Annual Report to CCAR – December 2016
2. Report to Nunavut Research Institute on Arctic Research Activities (condition of NRI research license) – December 2016
3. CCAR report to support review of CCAR program – February 2016
4. Kaley A. Walker and the ACE/OSIRIS Arctic Campaign Team, “Canadian Arctic ACE/OSIRIS Validation Campaign: Extended Phase-E Validation for 2015-2017”, Interim Year 1 Report for CSA-funded Validation Campaign Project, January 2016 (78 pages).

CANDAC – PAHA Data Archive Holdings

File totals by instrument/campaign

as of 15 November 2016

| DatasetNickName | DatasetName | Last Year | Start of Project |
|---------------------|------------------------------------------------------------------------------------------------------------|------------------|-------------------|
| OVS | OPAL Weather Station | 321 | 1,030 |
| ACE2013_MAESTRO-UV | Measurement of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by Occultation | | 1,739 |
| ACE2013_MAESTRO-VIS | Measurement of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by Occultation | | 1,148 |
| ACE2013_PARIS-IR | Sunrise Campaign 2013 campaign Portable Atmospheric Research Interferometric Spectrometer for the Infrared | | 1,377 |
| ACE2013_SAOZ | Sunrise Campaign 2013 UV-visible spectrometer | | 1,282 |
| ACE2013_SPS | Sunrise Campaign 2013 Sun Photo Spectrometer | | 180 |
| ACE2014_MAESTRO-UV | Measurement of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by Occultation | | 2,197 |
| ACE2014_MAESTRO-VIS | Measurement of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by Occultation | | 2,006 |
| ACE2014_PARIS-IR | Sunrise Campaign 2014 Campaign Portable Atmospheric Research Interferometric Spectrometer for the Infrared | | 1,383 |
| ACE2014_SAOZ | Sunrise Campaign 2014 UV-visible spectrometer | | 2,621 |
| ACE2014_SPS | Sunrise Campaign 2013 Sun Photo Spectrometer | | 200 |
| ACE2015_PARIS | Sunrise Campaign 2014 Campaign Portable Atmospheric Research Interferometric Spectrometer for the Infrared | | 2,796 |
| ACE2015_SAOZ | Sunrise Campaign 2015 UV-visible spectrometer | | 1,436 |
| ACE2015_SPS | Sunrise Campaign 2015 Sun Photo Spectrometer | | 213 |
| ACE2016_MAESTRO-UV | Measurement of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by Occultation | 1,652 | 1,655 |
| ACE2016_MAESTRO-VIS | Measurement of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by Occultation | 365 | 369 |
| ACE2016_PARIS-IR | Sunrise Campaign 2014 Campaign Portable Atmospheric Research Interferometric Spectrometer for the Infrared | 827 | 827 |
| ACE2016_SAOZ | Sunrise Campaign 2016 UV-visible spectrometer | 1,390 | 1,390 |
| ACE2016_SPS | Sunrise Campaign 2016 Sun Photo Spectrometer | 218 | 218 |
| AMS | Aerosol Mass Spectrometer | 288 | 4,701 |
| ASI | All Sky Imager | 479,764 | 1,278,992 |
| BREWER | Brewer Spectrophotometer (EC owned instrument) | | 1,177 |
| BRUKER | Bruker Fourier Transform Infrared Spectrometer | 17,196 | 40,056 |
| BRUKER-TRACKER | BRUKER Tracker | | 598 |
| DIAL | DIAL Stratospheric Ozone lidar | 8,942 | 11,478 |
| EAERI | Extended range Atmospheric Emitted Radiance Interferometer | 20,055 | 109,391 |
| ERWIN | E-Region Wind Interferometer | 824,402 | 4,183,656 |
| FIRR | Far IR Radiometer (CSA-owned instrument) | 2,117,942 | 3,051,754 |
| FLUXTOWER | Flux Tower | 45,908 | 140,536 |
| FP-YEU | Eureka Fabry-Perot Interferometer (US-owned instrument) | 10,833 | 32,547 |
| MBAR-SAFIRE | SAFIRE Microbarometer | 11,074 | 33,574 |
| METEORADAR | SkiYMET VHF Meteor Wind and Temperature Radar | | 477 |
| MMCR | Millimeter Wave Cloud Radar | 30,669 | 122,960 |
| MWR | Eureka Microwave Radiometer | 1,124 | 5,405 |
| OMTI-YEU | Optical Mesosphere Thermosphere Imagers - All-sky imager (Japanese-owned instrument) | 89 | 118 |
| OPC | Optical Particle Counter | 91 | 148 |
| PAX405 | PAX405 | 108 | 108 |
| PAX870 | PAX870 | 104 | 104 |
| PCPN | Precipitation (EC-owned instrument) | 4,398 | 27,304 |
| PEARL-GBS | UV-Visible Grating Spectrometer | 1,499 | 20,773 |
| PWS | PEARL Weather Station | 129 | 476 |
| RADIOSONDE | Radio sonde (EC instrumentation – archived for convenience) | 2,794 | 8,796 |
| RMR | Rayleigh/Mie/Raman Lidar | 248,737 | 334,259 |
| SATI | Spectral Airglow Temperature Imager | 7,816 | 83,791 |
| SHWS | Safeguard Weather Station | 287 | 1,147 |
| SMPS | Scanning Mobility Particle Sizer | 452 | 698 |
| SPM | Star Photometer | 117 | 412 |
| SSR | SAFIRE Surface Radiation | 4,959 | 26,654 |
| UT-GBS | UV-Visible Grating Spectrometer | 6,666 | 24,039 |
| VHFRADAR | Wind and Turbulence Tracker VHF Radar | 15,753 | 108,534 |
| WEBCAM_OPAL | Web camera at OPAL | 41,402 | 172,748 |
| WEBCAM_PEARL | Web camera at PEARL | 41,584 | 180,953 |
| WEBCAM_SAFEHUT | Web camera at Safeguard | | 110,719 |
| WEBCAM_SAFIRE | Web camera at SAFIRE | 40,470 | 169,988 |
| | TOTALS | 3,990,425 | 10,313,138 |