

University of Toronto Atmospheric Observatory (TAO)

Publications and Presentations

November 2008

Refereed Papers

- [1] Y. Zhao, Y. Kondo, F.J. Murcray, X. Liu, M. Koike, H. Irie, K. Strong, K. Suzuki, M. Sera, and Y. Ikegami. Seasonal Variations of HCN over Northern Japan Measured by Ground-Based Infrared Solar Spectroscopy. *Geophys. Res. Lett.*, 27 (14), 2085-2088, 2000.
- [2] Y. Zhao, K. Strong, Y. Kondo, M. Koike, Y. Matsumi, H. Irie, C.P. Rinsland, N.B. Jones, K. Suzuki, H. Nakajima, H. Nakane, and I. Murata. Spectroscopic Measurements of Tropospheric CO, C₂H₆, C₂H₂, and HCN in Northern Japan Including a Detection of Enhanced Emissions from the Eastern Siberia Fires in 1998. *J. Geophys. Res.*, 107 (D18), 4343-4358, 2002.
- [3] E. Mahieu, R. Zander, P. Duchatelet, J.W. Hannigan, M.T. Coffey, S. Mikuteit, F. Hase, T. Blumenstock, A. Wiacek, K. Strong, J.R. Taylor, R. Mittermeier, H. Fast, C.D. Boone, S.D. McLeod, K.A. Walker, P.F. Bernath, and C.P. Rinsland. Comparisons Between ACE and Ground-Based Measurements of Stratospheric HCl and ClONO₂ Loadings at Northern Latitudes. *Geophys. Res. Lett.*, 32, L15S08, doi:10.1029/2005GL022396, 2005.
- [4] A. Wiacek, N.B. Jones, K. Strong, J.R. Taylor, R.L. Mittermeier, and H. Fast. First Detection of Mesospheric Nitric Oxide (NO) by Ground-Based FTIR Solar Absorption Spectroscopy. *Geophys. Res. Lett.*, 33 (3), L03811, doi:10.1029/2005GL024897, 2006.
- [5] B. Dils, M. De Mazière, T. Blumenstock, M. Buchwitz, R. de Beek, P. Demoulin, P. Duchatelet, H. Fast, C. Frankenberg, A. Gloudemans, D. Griffith, N. Jones, T. Kerzenmacher, I. Kramer, E. Mahieu, J. Mellqvist, R. L. Mittermeier, J. Notholt, C. P. Rinsland, H. Schrijver, D. Smale, A. Strandberg, A. G. Straume, W. Stremme, K. Strong, R. Sussmann, J. Taylor, M. van den Broek, T. Wagner, T. Warneke, A. Wiacek, S. Wood. Comparisons between SCIAMACHY and Ground-Based FTIR Data for Total Columns of CO, CH₄, CO₂ and N₂O. *Atmospheric Chemistry and Physics*, 6, 1953-1976, 2006.
- [6] A. Wiacek, J.R. Taylor, K. Strong, R. Saari, T. Kerzenmacher, N.B. Jones and D.W.T Griffith. Ground-Based Solar Absorption FTIR Spectroscopy: Characterization of Retrievals and First Results from a Novel Optical Design Instrument at a New NDACC Complementary Station. *J. Atmos. Oceanic Technology*, 24 (3), 432-448, 2007.
- [7] D. Wunch, J.R. Taylor, D. Fu, P.F. Bernath, J.R. Drummond, C. Midwinter, K. Strong, and K.A. Walker. Simultaneous Ground-Based Observations of O₃, HCl, N₂O, and CH₄ over Toronto, Canada by Three Fourier Transform Spectrometers with Different Resolutions. *Atmos. Chem. Phys.* (MANTRA Special Issue), 7, 1275-1292, 2007.
- [8] J.R. Taylor, K. Strong, C.A. McLinden, D.A. Degenstein, and C.S. Haley. Comparison of OSIRIS Stratospheric O₃ and NO₂ Measurements with Ground-based Fourier Transform Spectrometer Measurements at the Toronto Atmospheric Observatory. *Can. J. Phys.* (Odin Special Issue), 85, 1301-1316, 2007.
- [9] W.K. Hocking, T. Carey-Smith, D.W. Tarasick, P.S. Argall, K. Strong, Y. Rochon, I. Zawadzki, P.A. Taylor. Detection of Stratospheric Ozone Intrusions by Windprofiler Radars. *Nature*, 450, 281-284, doi:10.1038/nature06312, 2007.
- [10] M. De Mazière, C. Vigouroux, P.F. Bernath, P. Baron, T. Blumenstock, C. Boone, C. Brogniez, V. Catoire, M. Coffey, P. Duchatelet, D. Griffith, J. Hannigan, Y. Kasai, I. Kramer, N. Jones, E. Mahieu, G.L. Manney, C. Piccolo, C. Randall, C. Robert, C. Senten, K. Strong, J. Taylor, C. Tétard, K.A. Walker, and S. Wood. Validation of ACE-FTS v2.2 methane profiles from the upper troposphere to lower mesosphere. *Atmos. Chem. Phys.*, 8, 2421-2435, 2008 (ACE Validation Special Issue).

- [11] C. Clerbaux, M. George, S. Turquety, K.A. Walker, B. Barret, P. Bernath, C. Boone, T. Borsdorff, J.P. Cammas, V. Catoire, M. Coffey, P.-F. Coheur, M. Deeter, M. De Mazière, J. Drummond, P. Duchatelet, E. Dupuy, R. de Zafra, F. Eddounia, D.P. Edwards, L. Emmons, B. Funke, J. Gille, D.W.T. Griffith, J. Hannigan, F. Hase, M. Höpfner, N. Jones, A. Kagawa, Y. Kasai, I. Kramer, E. Le Flochmoën, N.J. Livesey, M. López-Puertas, M. Luo, E. Mahieu, D. Murtagh, Ph. Nédélec, A. Pazmino, H. Pumphrey, P. Ricaud, C.P. Rinsland, C. Robert, M. Schneider, C. Senten, G. Stiller, A. Strandberg, K. Strong, R. Sussmann, V. Thouret, J. Urban, and A. Wiacek. CO measurements from the ACE-FTS satellite instrument: data analysis and validation using ground-based, airborne and spaceborne observations. *Atmos. Chem. Phys.*, 8, 2569-2594, 2008 (ACE Validation Special Issue).
- [12] J.R. Taylor, D. Wunch, C. Midwinter, A. Wiacek, J.R. Drummond, and K. Strong, An Extended Intercomparison of Simultaneous Ground-Based Fourier Transform Spectrometer Measurements at the Toronto Atmospheric Observatory. *J. Quant. Spectrosc. Radiat. Transfer*, 109 (12-13), 2244-2260, 2008.
- [13] A. Wiacek and K. Strong. Effects of Vertical Grid Discretization in Infrared Transmission Modeling. *J. Quant. Spectrosc. Radiat. Transfer*, 109, 2463-2490, 2008.
- [14] K. Strong, M.A. Wolff, T.E. Kerzenmacher, K.A. Walker, P.F. Bernath, T. Blumenstock, C. Boone, V. Catoire, M. Coffey, M. De Mazière, P. Demoulin, P. Duchatelet, E. Dupuy, J. Hannigan, M. Höpfner, N. Glatthor, D.W.T. Griffith, J.J. Jin, N. Jones, K. Jucks, H. Kuellmann, J. Kuttippurath, A. Lambert, E. Mahieu, J.C. McConnell, J. Mellqvist, S. Mikuteit, D.P. Murtagh, J. Notholt, C. Piccolo, C. Robert, M. Schneider, O. Schrems, K. Semeniuk, C. Senten, G.P. Stiller, A. Strandberg, J. Taylor, C. Tétard, M. Toohey, J. Urban, T. Warneke, and S. Wood. Validation of ACE-FTS N₂O measurements, *Atmos. Chem. Phys.*, 8, 4759-4786, 2008 (ACE Validation Special Issue).
- [15] T. Kerzenmacher, M.A. Wolff, K. Strong, E. Dupuy, K.A. Walker, L.K. Amekudzi, R.L. Batchelor, P.F. Bernath, G. Berthet, T. Blumenstock, C.D. Boone, K. Bramstedt, C. Brogniez, S. Brohede, J.P. Burrows, V. Catoire, J. Dodion, J.R. Drummond, D.G. Dufour, B. Funke, D. Fussen, F. Goutail, D.W.T. Griffith, C.S. Haley, F. Hendrick, M. Höpfner, N. Huret, N. Jones, J. Kar, I. Kramer, E.J. Llewellyn, M. López-Puertas, G. Manney, C.T. McElroy, C.A. McLinden, S. Melo, S. Mikuteit, D. Murtagh, F. Nichitui, J. Notholt, C. Nowlan, C. Piccolo, J.-P. Pommereau, C. Randall, P. Raspollini, M. Ridolfi, A. Richter, M. Schneider, O. Schrems, M. Silicani, G.P. Stiller, J. Taylor, C. Tétard, M. Toohey, F. Vanhellemont, T. Warneke, J.M. Zawodny, and J. Zou. Validation of NO₂ and NO from the Atmospheric Chemistry Experiment (ACE), *Atmos. Chem. Phys.*, 8, 5801-5841, 2008 (ACE Validation Special Issue).
- [16] E. Mahieu, P. Duchatelet, P. Demoulin, K.A. Walker, E. Dupuy, L. Froidevaux, C. Randall, V. Catoire, K. Strong, C.D. Boone, P.F. Bernath, J.-F. Blavier, T. Blumenstock, M. Coffey, M. De Mazière, D. Griffith, J. Hannigan, F. Hase, N. Jones, K.W. Jucks, A. Kagawa, Y. Kasai, Y. Mebarki, S. Mikuteit, R. Nassar, J. Notholt, C.P. Rinsland, C. Robert, O. Schrems, C. Senten, D. Smale, J. Taylor, C. Tétard, G.C. Toon, T. Warneke, S.W. Wood, R. Zander and C. Servais. Validation of ACE-FTS v2.2 measurements of HCl, HF, CCl₃F and CCl₂F₂ using space-, balloon- and ground-based instrument observations, *Atmos. Chem. Phys.*, 8, 6199-6221, 2008 (ACE Validation Special Issue).

Non-Refereed Articles

- [1] K. Strong. Brief Report on the University of Toronto Atmospheric Observatory in section on “News from Stations”. *Newsletter of the Network for the Detection of Stratospheric Change*, Vol. 2, No. 1, p. 43, November 2005.

Manuscripts Submitted for Publication

- [1] E. Dupuy, K.A. Walker, J. Kar, C.D. Boone, C.T. McElroy, P.F. Bernath, J.R. Drummond, R. Skelton, S.D. McLeod, R.C. Hughes, C.R. Nowlan, D.G. Dufour, J. Zou, F. Nichitiu, K. Strong, P. Baron, R.M. Bevilacqua, T. Blumenstock, G.E. Bodeker, T. Borsdorff, A.E. Bourassa, H. Bovensmann, I.S. Boyd, A. Bracher, C. Brogniez, J.P. Burrows, V. Catoire, S. Ceccherini, S. Chabrillat, T. Christensen, M.T. Coffey, U. Cortesi, J. Davies, C. De Clercq, D.A. Degenstein, M. De Mazière, P. Demoulin, J. Dodion, B. Firanski, H. Fischer, G. Forbes, L. Froidevaux, D. Fussen, P. Gerard, S. Godin-Beekman, F. Goutail, J. Granville, D. Griffith, C.S. Haley, J.W. Hannigan, M. Höpfner, J.J. Jin, A. Jones, N.B. Jones, K. Jucks, A. Kagawa, Y. Kasai, T.E. Kerzenmacher, A. Kleinböhl, A.R. Klekociuk, I. Kramer, H. Kullmann, J. Kuttippurath, E. Kyröla, J.-C. Lambert, N.J. Livesey, E.J. Llewellyn, N.D. Lloyd, E. Mahieu, G.L. Manney, B.T. Marshall, J.C. McConnell, M.P. McCormick, I.S. McDermid, M. McHugh, C.A. McLinden, J. Mellqvist, K. Mizutani, Y. Murayama, D.P. Murtagh, H. Oelhaf, A. Parrish, S.V. Petelina, C. Piccolo, J.-P. Pommereau, C.E. Randall, C. Robert, C. Roth, J.M. Russell III, M. Schneider, C. Senten, T. Steck, A. Strandberg, K.B. Strawbridge, R. Sussmann, D.P. J. Swart, D.W. Tarasick, J.R. Taylor, C. Tétard, L.W. Thomason, A.M. Thompson, M.B. Tully, J. Urban, F. Vanhellemont, T. von Clarmann, P. von der Gathen, C. von Savigny, J.W. Waters, J.C. Witte, M. Wolff, and J.M. Zawodny. Validation of ozone measurements from the Atmospheric Chemistry Experiment (ACE), *Atmos. Chem. Phys. Discuss.*, 8, 2513-2656, 2008 (ACE Validation Special Issue).

Theses

- A. Wiacek, MSc Report. *Fourier Transform Spectroscopy at the Toronto Atmospheric Observatory Using a Bomem DA8 Instrument*. University of Toronto, 2001.
- A. Fraser, MSc Report. *Diffraction Grating Spectroscopy: Instrument Characterization and Ozone, NO₂, and NO₃ Measurements from Toronto*. University of Toronto, 2003.
- J. Taylor, MSc Report. *Instrument Characterization of a Fourier Transform Spectrometer at the Toronto Atmospheric Observatory*. University of Toronto, 2003.
- R. Saari, ESC499Y Thesis. *Derived Tropospheric Ozone over Downtown Toronto: Studies with a Ground-based FTS*. University of Toronto, 2005.
- K. Hurley, ESC499Y Thesis. *Suntracker Design for Infrared Solar Spectroscopy*. University of Toronto, 2007.
- A. Wiacek, PhD Thesis. *First Trace Gas Measurements Using Fourier Transform Infrared Solar Absorption Spectroscopy at the University of Toronto Atmospheric Observatory*. University of Toronto, 2006.
- J. R. Taylor, PhD Thesis. *Assessment of Trace Gas Observations from the Toronto Atmospheric Observatory*. University of Toronto, 2008.

Conference Presentations with Papers Published in Proceedings

- [1] A. Wiacek, D. Yashcov, K. Strong, L. Boudreau, L. Rochette, and C. Roy. A New High-Resolution Fourier Transform Infrared Spectrometer for Ground-Based Atmospheric Measurements in Toronto. International Geoscience and Remote Sensing Symposium (IGARSS), Toronto, Canada, June 24-28, 2002. *Proceedings of IGARSS 2002*, IEEE, Piscataway, NJ, USA, pp. 48-50, 2002. Oral presentation.
- [2] D. Yashcov, A. Wiacek, and K. Strong. Ground-Based Fourier Transform Infrared Measurements of Atmospheric Trace Gases over Toronto, Canada. International Geoscience and Remote Sensing Symposium (IGARSS), Toronto, Canada, June 24-28, 2002. *Proceedings of IGARSS 2002*, IEEE, Piscataway, NJ, USA, pp. 2121-2122, 2002. Poster presentation.
- [3] D. Yashcov, A. Wiacek, K. Strong, and N. Faridi. A New High-Resolution Fourier Transform Infrared Spectrometer for Atmospheric Remote Sensing in Toronto. Optical Society of America Topical

- Meeting on Fourier Transform Spectroscopy, Quebec City, PQ, Canada, February 3-6, 2003. In *Fourier Transform Spectroscopy*, OSA Technical Digest, Optical Society of America, Washington, D.C., pp. 142-146, 2003. Oral presentation.
- [4] M. De Mazière, B. Barret, T. Blumenstock, M. Buchwitz, R. De Beek, P. Demoulin, H. Fast, A. Gloudemans, A. Griesfeller, D. Griffith, D. Ionov, K. Janssens, N. Jones, E. Mahieu, J. Mellqvist, R.L. Mittermeier, J. Notholt, C. Rinsland, H. Schrijver, A. Schultz, D. Smale, A. Strandberg, K. Strong, R. Sussmann, T. Warnecke, and S. Wood. Comparisons Between SCIAMACHY Scientific Products and Ground-Based FTIR Data for Total Columns of CO, CH₄, and N₂O. *Proceedings of the Second Workshop on the Atmospheric Chemistry Validation of ENVISAT (ACVE-2)*, ESA-ESRIN, Frascati, Italy, 3-7 May 2004. ESA SP-562, August 2004, ESC02MDM, 8 pp.

Conference Presentations with Abstracts

- [1] K. Strong, M.R. Bassford, J.R. Drummond, E. Farahani, C. Heald, B. Tolton, and Y. Zhao. The University of Toronto Atmospheric Observatory - TAO. CRESTech Innovation Network '99, Toronto, ON, Canada, September 29, 1999. Poster presentation.
- [2] A. Wiacek, D. Yashcov, K. Strong, L. Rochette and C. Roy. Ground-Based Atmospheric Measurements from Toronto Using a DA8 Fourier Transform Infrared Spectrometer. 6th Workshop on Infrared Emission Measurements by FTIR. Quebec City, PQ, Canada, February 6-8, 2002. Oral presentation.
- [3] A. Wiacek, D. Yashcov, K. Strong, L. Boudreau, L. Rochette, and C. Roy. Ground-Based Atmospheric Measurements from Toronto Using a DA8 Fourier Transform Infrared Spectrometer. Canadian Space Agency's 4th Atmospheric Environment Workshop, London, ON, Canada, May 15-17, 2002. Poster presentation.
- [4] N. Faridi, A. Wiacek, D. Yashcov, and K. Strong. Ground-Based Fourier Transform Spectroscopy and the Study of Ozone Trends and Urban Air Pollution at the University of Toronto. Canadian Undergraduate Physics Conference, Halifax, NS, Canada, October 23-27, 2002. Oral presentation. Received an HONORABLE MENTION.
- [5] A. Wiacek, D. Yashcov, K. Strong, L. Boudreau, L. Rochette, and C. Roy. Ground-Based Measurements of Vertical Profiles and Columns of Atmospheric Trace Gases over Toronto Using a New High-Resolution Fourier Transform Infrared Spectrometer. 2002 Fall Meeting of the American Geophysical Union, San Francisco, CA, USA, December 6-10, 2002. Oral presentation.
- [6] K. Strong, Measurements of Chemical Constituents in the Stratosphere from Balloon-Borne and Ground-Based Instruments. 37th Congress of the Canadian Meteorological and Oceanographic Society, Ottawa, ON, Canada, June 2-5, 2003. INVITED PLENARY TALK.
- [7] D. Yashcov, A. Wiacek, and K. Strong. Characterization of Vertical Profiles and Column Amounts of Atmospheric Trace Gases Retrieved from a Ground-Based Fourier Transform InfraRed Spectrometer at Toronto, Canada. 37th Congress of the Canadian Meteorological and Oceanographic Society, Ottawa, ON, Canada, June 2-5, 2003. Poster presentation.
- [8] A. Wiacek, D. Yashcov, J. Taylor, C. McLandress, T.G. Shepherd, and K. Strong. Comparison of Atmospheric Trace Gases Measured Over Toronto Using a Ground-Based FTIR Spectrometer with Output from the Canadian Middle Atmosphere Model. 37th Congress of the Canadian Meteorological and Oceanographic Society, Ottawa, ON, Canada, June 2-5, 2003. Oral presentation.
- [9] K. Strong, Observations of Atmospheric Composition Using Balloon-Borne and Ground-Based Instruments. 2003 Canadian Association of Physicists (CAP) Congress, Charlottetown, PEI, Canada, June 8-11, 2003. INVITED TALK.
- [10] J. Taylor, D. Yashcov, A. Wiacek, K. Strong, R. Berman, H. Fast, R. Mittermeier, and S. Pal. Instrument Characterization and Ozone Measurements from the Ground-Based Fourier-Transform InfraRed Spectrometer at Toronto. 2003 Canadian Association of Physicists (CAP) Congress, Charlottetown, PEI, Canada, June 8-11, 2003. Oral presentation.

- [11] A. Fraser, E. Farahani, S.M.L. Melo, and K. Strong. Measurements of Ozone and NO₂ Using a Ground-Based UV-Visible Grating Spectrometer. 2003 Canadian Association of Physicists (CAP) Congress, Charlottetown, PEI, Canada, June 8-11, 2003. Poster presentation.
- [12] A. Wiacek, D. Yashcov, J. Taylor, C. McLandress, T. Shepherd, and K. Strong. Comparison of Ground-Based FTIR Measurements of Trace Gases over Toronto, Canada, with Outputs of the Canadian Middle Atmosphere Model. 1st ENVISAT Data Assimilation Summer School, ESA ESRIN, Frascati, Italy, August 18-29 2003. Poster presentation.
- [13] A. Wiacek, J. Taylor, D. Yashcov, C. McLandress, T. Shepherd, K. Strong, L. Boudreau, L. Rochette and C. Roy. Ground-Based Atmospheric Measurements from Toronto Using a New-Design Bomem DA8 Fourier Transform Spectrometer. CRESTech's Innovation Network 2003, Toronto, ON, October 9, 2003. Poster presentation.
- [14] J. Taylor, A. Wiacek, D. Wunch, O. Mikhailov, K. Strong and J.R. Drummond. Mini-MANTRA: An Intercomparison of Atmospheric Constituent Measurements by Ground-Based Fourier Transform Spectrometers. Canadian Association of Physicists, Division of Atmospheric and Space Physics 2004 Winter Workshop, London, ON, Canada, February 19-20, 2004. Oral presentation.
- [15] A. Wiacek, J. Taylor, K. Strong, N. Jones, D. Griffith, J. Notholt, and V. Velasco. Network for the Detection of Stratospheric Change (NDSC) Activities at the Toronto Atmospheric Observatory (TAO). Canadian Association of Physicists, Division of Atmospheric and Space Physics 2004 Winter Workshop, London, ON, Canada, February 19-20, 2004. Oral presentation.
- [16] A. Wiacek, J.R. Taylor, K. Strong, J. Liu, H. Bremer, J.R. Drummond. Total Columns and Vertical Profiles of Carbon Monoxide Measured Over Toronto Using a Ground-Based Fourier Transform InfraRed (FTIR) Spectrometer: Comparisons With Measurements of Pollution in the Troposphere (MOPITT) Data (Jan 2002 - Sep 2003). 2004 Spring Meeting of the American Geophysical Union, Montreal, PQ, Canada, May 17-21, 2004. Poster presentation.
- [17] J. Taylor, A. Wiacek, R. Saari, C. Avis, T. Kerzenmacher, and K. Strong. Ozone Observations over Toronto: A Comparison between a Ground-Based Fourier Transform InfraRed (FTIR) Spectrometer and the Optical Spectrograph and InfraRed Imager System (OSIRIS). 2004 Fall Meeting of the American Geophysical Union, San Francisco, CA, USA, December 13-17, 2004. Poster presentation.
- [18] J.R. Taylor, A. Wiacek, K. Strong, P. Bernath, C. Boone, and K. Walker. Comparisons Between ACE-FTS and Ground-Based FTS Observations at the Toronto Atmospheric Observatory. ASSFTS 12th Workshop (Atmospheric Science from Space using Fourier Transform Spectroscopy), Quebec City, Quebec, Canada, May 18-20, 2005. Oral presentation.
- [19] A. Wiacek, N.B. Jones, K. Strong, J.R. Taylor, R.L. Mittermeier, and H. Fast. First detection of meso-thermospheric Nitric Oxide (NO) by ground-based FTIR solar absorption spectroscopy. European Geosciences Union General Assembly, Vienna, Austria, April 2-7, 2006. Poster presentation.
- [20] J. Taylor, D. Wunch, D. Fu, C. Midwinter, K. Walker, K. Strong, J. Drummond, and P. Bernath. The Mini-MANTRA Campaign: An Intercomparison of Three Ground-Based Fourier Transform Spectrometers. 40th Congress of the Canadian Meteorological and Oceanographic Society, Toronto, ON, May 29 - June 1, 2006. Oral presentation.
- [21] J. Taylor, A. Wiacek, K. Strong, K. Walker, C. Boone, P. Bernath, H. Fast, and R. Mittermeier. Satellite and ground-based validation of Fourier Transform Spectrometer observations at the Toronto Atmospheric Observatory. 40th Congress of the Canadian Meteorological and Oceanographic Society, Toronto, ON, May 29 - June 1, 2006. Poster presentation.
- [22] A. Wiacek, N.B. Jones, K. Strong, J.R. Taylor, R.L. Mittermeier, and H. Fast. First detection of meso-thermospheric Nitric Oxide (NO) by ground-based FTIR solar absorption spectroscopy. 40th Congress of the Canadian Meteorological and Oceanographic Society, Toronto, ON, May 29 - June 1, 2006. Poster presentation.

Oral Presentations at International Workshops and Meetings

- [1] K. Strong, A. Wiacek, and D. Yashcov, A New High-Resolution FTS for Atmospheric Measurements in Toronto, Network for the Detection of Stratospheric Change InfraRed Working Group Meeting, Boulder, CO, May 6-8, 2002.
- [2] K. Strong, D. Yashcov, J. Taylor, A. Wiacek, Brige Chugh, and N. Faridi. "Progress with the University of Toronto FTIR Spectrometer. Network for the Detection of Stratospheric Change InfraRed Working Group Meeting, Bremen, Germany, June 17-20, 2003.
- [3] A. Wiacek, K. Strong, N. Jones, and D. Griffith. Constraining SFIT-2 in an Intercomparison: Experience during the Toronto/Wollongong/Lauder Intercomparison. Network for the Detection of Stratospheric Change InfraRed Working Group Meeting, Queenstown, New Zealand, November 9-12, 2004.
- [4] J. Taylor, A. Wiacek, R. Saari, C. Avis, T. Kerzenmacher, and K. Strong. Current Observations at the Toronto Atmospheric Observatory: A Complementary Site Report of the NDSC Infrared Working Group. Network for the Detection of Stratospheric Change InfraRed Working Group Meeting, Queenstown, New Zealand, November 9-12, 2004.
- [5] A. Wiacek on behalf of K. Strong and K. Walker. ACE: Current Status and Validation Plans. Network for the Detection of Stratospheric Change InfraRed Working Group Meeting, Queenstown, New Zealand, November 9-12, 2004.
- [6] J. Taylor on behalf of K. Strong, J.R. Drummond, and the CANDAC Science Team. The Future of the Eureka Site: CANDAC and PEARL. Network for the Detection of Stratospheric Change InfraRed Working Group Meeting, Queenstown, New Zealand, November 9-12, 2004.
- [7] K. Strong, J. Taylor, A. Wiacek, T. Kerzenmacher, C. Avis, M. Jensen, R. Saari, and K. MacQuarrie. The University of Toronto Atmospheric Observatory: Complementary Site Report to the NDSC IRWG. Network for the Detection of Stratospheric Change InfraRed Working Group Meeting, Toronto, ON, June 13-15, 2005.
- [8] J. Taylor, A. Wiacek, K. Strong, H. Fast, R. Mittermeier, and M. de Maziere. An Investigation of Methane Retrievals Using SFIT2. Network for the Detection of Stratospheric Change InfraRed Working Group Meeting, Toronto, ON, June 13-15, 2005.
- [9] A. Wiacek, J. Taylor, and K. Strong. Constructing VMR *a priori* Profiles and S_a and S_e Covariances for Toronto. Network for the Detection of Stratospheric Change InfraRed Working Group Meeting, Toronto, ON, June 13-15, 2005.
- [10] A. Wiacek, J. Taylor, and K. Strong. In Search of an Optimal Altitude Grid for SFIT-2. Network for the Detection of Stratospheric Change InfraRed Working Group Meeting, Toronto, ON, June 13-15, 2005.
- [11] K. Strong, J. Taylor, A. Wiacek, T. Kerzenmacher, M. Jensen, D. Edwards, and G. Hassanpour. The University of Toronto Atmospheric Observatory: Complementary Site Report to the NDACC IRWG. Network for the Detection of Atmospheric Composition Change InfraRed Working Group Meeting, Tsukuba, Japan, May 8-10, 2006.
- [12] A. Wiacek, N.B. Jones, K. Strong, J.R. Taylor, R.L. Mittermeier, and H. Fast. First Detection of Mesospheric Nitric Oxide (NO) by Ground-Based Solar Absorption FTIR Spectroscopy. Network for the Detection of Atmospheric Composition Change InfraRed Working Group Meeting, Tsukuba, Japan, May 8-10, 2006.
- [13] J.R. Taylor, D. Wunch, C. Midwinter, J.R. Drummond, K. Strong, D. Fu, K.A. Walker, and P. Bernath. The Mini-MANTRA Campaign: An Intercomparison of Three Ground-Based Fourier Transform Spectrometers. Network for the Detection of Atmospheric Composition Change InfraRed Working Group Meeting, Tsukuba, Japan, May 8-10, 2006.

- [14] A. Wiacek and K. Strong, Some Effects of Vertical Grid Discretization on Profile Retrievals from Ground-based Solar Absorption FTIR Spectra. Network for the Detection of Atmospheric Composition Change InfraRed Working Group Meeting, Tenerife, April 30 – May 4, 2007.
- [15] J. Taylor, R. Lindenmeier, R. Batchelor, M. Wolff, T. Kerzenmacher, and K. Strong, The University of Toronto Atmospheric Observatory: Complementary Site Report. Network for the Detection of Atmospheric Composition Change InfraRed Working Group Meeting, Tenerife, Spain, April 30 – May 4, 2007.
- [16] K. Strong, J. Taylor, and A. Wiacek, The University of Toronto Atmospheric Observatory: Complementary Site Report. Network for the Detection of Atmospheric Composition Change InfraRed Working Group Meeting, Pasadena, USA, 12-14 May 2008.
- [17] K. Strong, D. Hudak, N.T. O'Neill, and K.A. Walker. Validation of GOSAT Measurements Using Ground-Based and Satellite Data. GOSAT Research Announcement Principal Investigator Workshop. Tokyo, Japan, 5-7 November 2008.

Presentations at National Workshops and Meetings

- [1] A. Wiacek, J. Taylor, and K. Strong. Characterization of Trace Gas Retrievals from Ground-Based Fourier Transform InfraRed (FTIR) Solar Absorption Spectra Recorded at Toronto. Canadian Space Agency's 5th Atmospheric Environment Workshop, Banff, AB, Canada, May 5-7, 2005. Poster presentation.
- [2] J.R. Taylor, A Wiacek, R. Saari, K. Strong, C. Boone, K. Walker, and P. Bernath. Initial Comparisons of CH₄, N₂O, and O₃ measured by a Ground-Based Fourier Transform Spectrometer and the ACE-FTS, SCIAMACHY, and OSIRIS Satellite Instruments. Canadian Space Agency's 5th Atmospheric Environment Workshop, Banff, AB, Canada, May 5-7, 2005. Poster presentation.
- [3] J.R. Taylor, A. Wiacek, K. Strong, P. Bernath, C. Boone, K. Walker, E. Llewellyn, M. Buchwitz and R. de Beek. The Use of Ground-based FTS Observations in Satellite Validation: Results from the Toronto Atmospheric Observatory. Atmospheric Environment Workshop on the "Niche Satellite Mission", Canadian Space Agency, St. Hubert, QC, Sept. 29-30, 2005. Poster presentation.
- [4] M. Toohey, K. Strong, B.M. Quine, T.G. Shepherd, C. McLandress, P.F. Bernath, C.D. Boone, and K.A. Walker. Validation and Statistical Comparisons of Chemical Profiles Measured by Satellite and Balloon-based Instruments, and Modeled by the CMAM. Atmospheric Environment Workshop on the "Niche Satellite Mission", Canadian Space Agency, St. Hubert, QC, Sept. 29-30, 2005. Poster presentation.
- [5] K. Strong, J. Taylor, T. Kerzenmacher, and A. Wiacek, The Toronto Atmospheric Observatory and Stratosphere-Troposphere Exchange, IONS Data Workshop, Environment Canada, Toronto, November 16-17, 2006.