

CURRICULUM VITAE

Dr. ADRIANA PREDOI-CROSS



POSITION: Professor

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EDUCATION:

Doctorate Physics, University of New Brunswick, Canada 1997

Bachelor of Science, Engineering Physics, University of Bucharest, Romania, 1990

AWARD: NSERC University Faculty Award, 2005-2012

RESEARCH INTERNSHIPS:

- DAAD (German Academic Exchange Service) Fellowship, Physikalisch-Chemisches Institut, Molekulespektroskopisches Labor, Justus-Liebig University, Gießen, Germany
- Guest Researcher Fellowship, International Center for Theoretical Physics, Trieste, Italy

EMPLOYMENT:

- July 2013- present *Professor*, Department of Physics and Astronomy, University of Lethbridge, Lethbridge, Canada
- April 2008-June 2013 *Associate Professor*, Department of Physics and Astronomy, University of Lethbridge, Lethbridge, Canada
- July 2003-March 2008 *Assistant Professor*, Department of Physics and Astronomy, University of Lethbridge, Lethbridge, Canada
- December 2002-July 2003 *Sessional Lecturer*, University of Ottawa and Carleton University, Ottawa, Canada
- September 2002-July 2003 *Technical Consultant*, Ottawa, Canada
- December 1999-September 2002 *Application Engineer* JDS Uniphase Corp., Ottawa, Canada
- March 1997-December 1999 *Postdoctoral Fellow*, University of Toronto, Physics Department, Toronto, Canada
- Sept. 1992-Sept. 1996 *Research Assistant*, University of New Brunswick, Fredericton, Canada
- Aug. 1990-Sept. 1992 *Scientific Researcher*, Institute of Optoelectronics, Bucharest, Romania

EVIDENCE OF IMPACT AND CONTRIBUTIONS:

a. Reviewer and other professional activities

- a) Reviewer for the Journal of Molecular Spectroscopy, Nature, Nature Geoscience, Journal of Quantitative Spectroscopy and Radiative Transfer, Journal of Photochemistry and Photobiology A, Journal of Chemical Physics, Chemical Physics Letters, Journal of Raman Spectroscopy.
- b) Named as *one of the top reviewers of 2012* by Elsevier.
- c) Selected as a member of the NASA Planetary Atmospheres (PATM) Spectroscopy review panel
- d) Guest Editor for two special issues of the Canadian Journal of Physics (1) "*Spectroscopy at UNB*" honouring spectroscopists at the University of New Brunswick" (87, 5, (2009)); (2) "*Mid- and Far-Infrared Spectroscopy: Techniques and Applications*", a special issue in memoriam of our colleague Arvid Schultz (2013).
- e) Reviewer for the Canadian Foundation for Innovation, Alberta Ingenuity (2007,2008), NASA.
- f) Contributor to the HITRAN and GEISA spectroscopic databases used worldwide by the atmospheric

community to interpret spectroscopic remote sensing data.

g) Associate Editor for the *Canadian Journal of Physics* (since August 2010), member of the Editorial Board of *Physics in Canada* (since June 2011), member of the Editorial Board of *Journal of Molecular Spectroscopy* (since August 2014) and of the *Journal of Quantitative Spectroscopy and Radiative Transfer* (since fall 2014), member of the Editorial Board of *Scientific Reports* (since February 2014), member of the Editorial Board of *Dataset Papers in Science* (since 2013).

h) Guest Editor for two special issues of *Physics in Canada* on research done at the Canadian Light Source (2011 and 2014) and on a special issue on Women in Physics (2015).

b. Selected committee memberships

a) Member on the General Faculties Council at the University of Lethbridge (2008-2009, 2014-2015), Arts and Sciences Executive Committee at the University of Lethbridge (2008-2009), Women's Studies Program Advisory Committee at Univ. of Lethbridge (2008-2010), Daycare Advisory Committee at the University of Lethbridge (2007-2012, 2014-2016), Task Force on Graduate Studies in Sciences (2008-2009), Curriculum Committee (2013-2016), University Research Committee (2014-2016).

b) Co-Chair of the *Women Scholars Speaker Series*, University of Lethbridge (2010-2012)

c) Member on both the Local and the International Organizing Committee of the *International Conference on Spectral Line Shapes* (2008 – present) and Editor of the Conference Proceedings in 2010.

d) Member on both the Local Organizing Committee of the 5th *IUPAP International Conference on Women in Physics* (Waterloo, August 2014) and co-Editor on a special issue of *Physics in Canada dedicated to Women in Physics*.

e) Member on both the Local and the Technical Program Committee of the *The 30th Canadian Symposium on Remote Sensing* (June 2009).

f) Member on the Local Organizing Committee of the 5th *International Workshop on Infrared Microscopy and Spectroscopy with Accelerator Based Sources* and Editor of the Conference Proceedings.

g) Chair of Graduate Committee in the Physics Department at the University of Lethbridge (2004-2010)

h) Member of the NSERC Scholarship Selection Committee at the University of Lethbridge (2008)

i) Credit Transfer Advisor for the Physics Department at the University of Lethbridge (2004-2007)

COMMUNITY / PUBLIC SERVICE ACTIVITIES:

a) Our research group has been featured in several articles published in local publications. I was invited to be a speaker at a panel discussion on Women in Science organized by the University of Lethbridge Women Scholars Speaker Series. Highlights of our discussions are featured in a short article "*Women Scholars Discuss Women in Science*" published in *The Legend* (publication of University of Lethbridge), 5, issue 5 (2006). The article, "*Have Lab Coat, Will Travel*" published in the Legend, November (2006) discussed the experiences of two group members that traveled to Germany on DAAD Research Internships in Science and Engineering program. My research profile and scientific activities were presented in: "*Changing the Climate*", an article published in the Fall 2008 issue of Lethbridge Living and in the "*Spotlight on Discovery*" publication of the Canadian Light Source, 2010-2011 Annual Report.

b) In the summers of 2005, 2007 and 2008, 2009 I organized a very successful seminar series "*Summer Physics Research Seminars*" for undergraduate and graduate students at the University of Lethbridge.

c) At the local community level, I participated in the "*Job Shadow*" program (2004-2008) and "*Operation Minerva*" (2009,2010, 2014) for students interested in careers in Physics. I was a judge at both local (March 2009) and regional (April 2009,2011, 2014) Science Fairs.

d) I served the physics community represented by the Canadian Association of Physicists (CAP) as Team Leader at the 3rd and 4th International Union of Pure and Applied Physics (IUPAP) International Conference on Women in Physics (Seoul, South Korea, October 2008 and Stellenbosch, South Africa, 2011).

GRADUATE SUPERVISORY COMMITTEES AND RELATED ACTIVITIES

a) *M.Sc. students*: Anildev Vasudevan, Hoimonti Rozario (2010-2012), Amr Ibrahim (2008-2011), Chad Povey (2008-2010), Robab Hashemi (April 2013-December 2014), Piklu Sutradhar (September 2013-present), Koorosh Esteki (January 2014-present), Nazrul Islam (September 2014-present), Shibli Mashwood (September

2014), Arif Arifuzzaman (2015 – present).

b) *Ph. D. students*: Nnamdi Okeke (2007), Chad Povey (2010-2013), Hoimonti Rozario (2013-present), Robab Hashemi (2015-present)

c) Member in the supervisory committees of the following M.Sc. students:

- Ian Schofield (supervisor Dr. David Naylor, graduated in August 2005)
- Regan Dahl (supervisor Dr. David Naylor, graduated in May 2008)
- Richard Querel (supervisor Dr. David Naylor, graduated in September 2007)
- Pouya Maraghechi (supervisor Dr. Steve Patitsas, graduated in spring 2006)
- Scott Jones (supervisor Dr. David Naylor, graduated summer 2010)
- Gibion Makiwa (supervisor Dr. David Naylor, graduated May 2011)
- Yuan Zhang (supervisor Dr. David Naylor, graduated May 2011)
- Praveen Chaudhary (supervisors Drs. Paul Hazendonk and Michael Gerken, graduated May 2011)
- Evan Booth (supervisors Jim Byrne and Hester Jiskoot, graduated in May 2011)
- Subir Chowdhury (co-supervisors Dr. Karl Staenz, Dr. Derek Peddle, graduated in December 2012)
- Ilia Parshakov (co-supervisors Dr. Karl Staenz, Dr. Craig Coburn, graduated in December 2012)
- Logan Pryor (co-supervisors Dr. Karl Staenz, Dr. Craig Coburn, graduated in December 2012)
- Gairik Roy (supervisor Dr. Phillippe Teillet, Dr. Derek Peddle, graduated in December 2012)
- Shohreh Rahmati (supervisor Arundhati Dasgupta, graduated in September 2012)
- Tanner Heggie (supervisor Dr. David Naylor, since September 2012)
- Grace Trimboli (supervisor Dr. David Naylor, since September 2012)
- Sherif Abdelazim (supervisor Dr. David Naylor, since January 2013)
- Tanner Heggie (supervisor Dr. David Naylor, since September 2012)
- Hossein Nasser (supervisor Dr. Behnam Seyed-Mahmoud, since September 2012)
- Ali Moradi (supervisor Dr. Behnam Seyed-Mahmoud, since May 2013)

d) Member in the supervisory committees of the following Ph.D. students:

- Gibion Makiwa (supervisor Dr. David Naylor, since May 2011)
- Praveen Chaudhary (supervisors Drs. Paul Hazendonk and Michael Gerken, since May 2011)
- Ilia Parshakov (supervisor Dr. Derek Peddle)

e) I chaired the M.Sc. Thesis Defences of the following students:

- Yvonne Wong (Neuroscience Department, supervisor Dr. Ian Wishaw, graduated in May 2004)
- Greg Silasi (Neuroscience Department, supervisor Dr. Brian Kolb, graduated in August 2005)
- Mini Goyal (Math and Computer Science Department, supervisor Dr. Shahadat Hossain, graduated in Fall 2005)
- Jennifer Geddes (Biological Sciences Department, supervisors Drs. Brent Selinger, Francois Eudes (Research Station) , graduated in December 2006)
- Callie Clark (Neuroscience Department, supervisor Dr. Ian Wishaw, graduated in October 2008)
- Tammi Mills (Geography Department, supervisor Dr. Shawn Bubel, graduated in May 2009)
- Jennifer Przybylski (Chemistry Department, supervisor Dr. Stacey Wetmore, graduated in July 2009)

TEACHING ACTIVITIES

Teaching activities prior to joining University of Lethbridge:

Spring 1998: PHY237F Physics of the Climate System, University of Toronto at Mississauga, Toronto), enrolment 17 students

Fall 1999: PHY237F Physics of the Climate System, University of Toronto at Mississauga, Toronto), enrolment 12 students

Spring 2003: PHY2361 Modern Physics, University of Ottawa, Ottawa, enrolment 25 students; PHY75.107/108 Elementary University Physics laboratory, Carleton University, Ottawa); enrolment over 300 students

Teaching activities at the University of Lethbridge:

Fall 2003: PHYS 3650 Optics (lecture and laboratory) enrolment 7 students

Spring 2004: PHYS 2150 Quantum Mechanics I, enrolment 1 student;

- PHYS 1050 Laboratory, enrolment 50 students;
- Fall 2004:* PHYS 2120 Fundamentals of Physics III, enrolment 12 students;
- Spring 2005:* PHYS 2000 Fundamentals of Physics II, enrolment 15 students;
 PHYS 2150 Quantum Mechanics I, enrolment 14 students;
 PHYS 1050 Laboratory, enrolment 17 students;
- Fall 2005:* PHYS 2120 Fundamentals of Physics III, enrolment 12 students;
- Fall 2006:* PHYS 2000 Fundamentals of Physics II, enrolment 14 students;
 PHYS 2120 Fundamentals of Physics III, enrolment 28 students;
- Spring 2008:* PHYS 2130 Waves, Optics and Sound (lecture and laboratory) enrolment 32 students;
 PHYS 1050 Laboratory, enrolment 14 students;
- Spring 2009:* PHYS 2130 Waves, Optics and Sound (lecture) enrolment 31 students;
 PHYS 2000 Fundamentals of Physics II, enrolment 14 students;
- Fall 2009:* PHYS 5850 Quantitative Spectroscopy for Atmospheric Remote Sensing, enrolment 4 students
- Fall 2011:* PHYS 3650/7650 Optics (lecture and laboratory) enrolment 5 students
- Fall 2012:* PHYS 2120 Fundamentals of Physics III, enrolment 9 students;
 PHYS5850 Experimental Physics (I am teaching a 4th of the term), enrolment 4 students;
- Spring 2013:* PHYS 2150 Quantum Mechanics I, enrolment 9 students;
 PHYS 2850 Imaging Science and Technology in Today's World, enrollment 16 students;
- Fall 2013:* PHYS 2120 Fundamentals of Physics III, enrolment 11 students;
 PHYS 4850/5850/7850B Quantitative Spectroscopy, enrolment 8 students;
- Fall 2014:* PHYS 2120 Fundamentals of Physics III, enrolment 15 students;
- Spring 2015:* PHYS 2150 Quantum Mechanics I, enrolment 12 students;
 PHYS 4650/5650/7650B Physics of Remote Sensing, enrolment 11 students;

Undergraduate and Graduate Independent Study Courses:

- Summer 2005:* PHYS 3990 A Emission Studies in Linear Molecules
 PHYS 3990 B Lineshape Studies for Greenhouse Gases
- Spring 2005:* PHYS 3990 A Optical and Mechanical Design for Spectroscopic Applications,
 PHYS 2990 Fundamentals of Molecular Spectroscopy
- Spring 2006:* PHYS 2990A Fundamentals of Molecular Spectroscopy
- Spring 2007:* PHYS 3990A Spectroscopic Lineshape Studies
 PHYS 3990B Fundamentals of Molecular Spectroscopy
 PHYS 7990 Molecular Spectroscopy
- Fall 2007:* PHYS 3990 Quantitative Spectroscopy for Atmospheric Research
- Fall 2014:* PHYS5990 Modern Spectroscopic Techniques and Instrumentation
 PHYS5990A High Resolution Spectroscopy and Instrumentation
 PHYS5990B Spectroscopic techniques for remote sensing

RESEARCH FUNDING

My present and past research funding comes from NSERC Discovery and Equipment grants, NSERC University Faculty Award, NSERC/BIOCAP Strategic Grant, Canadian Foundation for Innovation–On-going New Opportunities, Alberta Science and Research Authority, University of Lethbridge Research Fund and matching funds, NSERC Research and Capacity Development Grant, Summer Temporary Employment program of the Alberta government, Summer Career Placement.

A detailed list of research funds is given below:

- 2003 – Start-up grant, *Spectroscopic Studies of Atmospheric Gases* (\$25,000)
- 2004 - University of Lethbridge Research Fund, *Low Temperature Gas Cell for Lineshape Studies* (\$4,500)
- 2004 – NSERC Discovery Grant, *Laboratory and Ground Based Spectroscopic Studies of Molecules of Atmospheric and Astrophysical Interest* (\$15,000)
- 2004 - Summer Career Placement, *Emission Studies in HCN* (\$1,652)
- 2004 - Summer Temporary Employment Program, *High Resolution Lineshape Studies of Methane* (\$3,168)

- 2005 - CFI, ASRA, University of Lethbridge, *Research Facility for Laboratory Spectroscopy of Terrestrial and Outer Planetary Molecules* (\$295,072)
- 2005 – NSERC Equipment Grant, University of Lethbridge, *Components for a Research Facility for Molecular Spectroscopy of Molecules of Planetary Atmospheres* (\$65,000)
- 2005 – 2008 - NSERC Discovery Grant and UFA Award, *Spectroscopic Studies of Molecular Physics for Remote Sensing Applications* (\$21,000 /year)
- 2005 - Summer Temporary Employment Program, *Optical Design of a Laboratory Spectroscopic Facility* (\$3,168)
- 2005 - Summer Career Placement, *Spectroscopic Hot Gas Emission Studies* (\$1,652)
- 2005-2008 NSERC, BIOCAP, *Spectroscopic Studies and Instrumentation to Enable Accurate Simultaneous Measurements of Sources and Sinks of Methane, Carbon Dioxide and Nitrous Oxide* (\$41,000/year for 3 years)
- 2005 NSERC Aid to Small Universities Grant (\$30,000 partial allocation)
- 2006 University of Lethbridge Research Fund, *Laboratory Spectroscopic Measurements for Atmospheric Remote Sensing Applications* (\$4,500)
- 2006 Two student scholarships (Kyle Hambrook and Chad Povey) from the German Academic Exchange (DAAD) RISE program (about \$5,000)
- 2007 NSERC Aid to Small Universities Grant (\$15,000 partial allocation)
- 2007 University of Lethbridge matching funds (Dean’s Office) *Spectroscopic Studies and Instrumentation to Enable Accurate Simultaneous Measurements of Sources and Sinks of Methane, Carbon Dioxide and Nitrous Oxide* (\$15,000)
- 2008 NSERC Aid to Small Universities Grant (\$27,000 partial allocation)
- 2008 - 2013 - NSERC Discovery Grant *Molecular Spectroscopic Studies for Remote Sensing of Earth and Planetary Atmospheres* (\$26,540/year for 5 years)
- 2008 - University of Lethbridge Research Fund *Spectroscopic Study of Carbon Dioxide for Atmospheric Remote Sensing Applications* (\$4,500)
- 2010 –2015 NSERC CREATE Grant (\$35,000/year for six years (partial allocation))
- 2012 Student scholarship (Jolene Garber) from the German Academic Exchange (DAAD) RISE program (about \$5,000)
- 2012 - University of Lethbridge Research Fund *Spectroscopic study of carbon dioxide to enable isotopic fractionation studies of the Martian atmosphere* (\$4,500)
- 2012- University of Lethbridge Teaching Fund *Attracting Young Girls to Science* (\$2000)
- 2014 – 2019 NSERC Discovery Grant *Merging Complementary Techniques in Laboratory Spectroscopy for Remote Sensing Applications* (\$27,000/year for 5 years)
- 2014 Undergraduate student research scholarship (Mark Derksen) from the German Academic Exchange (DAAD) RISE program (about \$5,000)
- 2014 - Summer Undergraduate Chinook Scholarship (Roderick MacCrimmon), *Infrared Spectroscopy of Nitrogen Dioxide for Remote Sensing Applications* (\$5,625)
- 2014 - Summer Undergraduate Chinook Scholarship (Jordan Cramer), *Testing a prototype of greenhouse gas monitoring system* (\$5,625)
- 2015 – Summer Undergraduate Chinook Scholarship (Jordan Cramer), *High resolution molecular spectroscopy and remote sensing* (\$5,625)
- 2015 – MITACS Globalink Research Intern (Neeraj Prakash, Indian Institute of Technology Calicut, India), *Spectroscopic studies and instrumentation to enable simultaneous measurements of trace gases* (estimated at \$5,000)

REFEREED PUBLICATIONS

Note: In the following sections the names of highly qualified personnel are in bold font.

(74) R.M. Lees, M. Jackson, G. Moruzzi, Adriana Predoi-Cross, B.E. Billinghurst, *Assignment of far-infrared laser lines of O-17 methanol by synchrotron FTIR spectroscopy and laser frequency measurements*, Journal of Molecular Spectroscopy, available online 14 March 2015.

- (73) Adriana Predoi-Cross, V. Malathy Devi, Keeyoon Sung, Tetyana Sinyakova, Jeanna Buldyreva, D. Chris Benner, Mary Ann H. Smith, Arlan Mantz, *Temperature dependences of N_2 -broadening and shift coefficients in the ν_6 perpendicular band of $^{12}CH_3D$* , Journal of Quantitative Spectroscopy and Radiative Transfer 163, 120-141 (2015).
- (72) **Robab Hashemi, Jolene Garber, Chad Povey, Mark Derksen, Hossein Naseri**, Adriana Predoi-Cross, *Doppler Thermometry of Acetylene for Accurate Measurements of the Boltzmann Constant*, Journal of Chemical Physics 141 21, 1-7 (2014).
- (71) Adina Ceausu-Velcescu, Petr Pracna, Adriana Predoi-Cross, *Rovibrational spectra of DCF_3 in the 2000 cm^{-1} region: high-resolution study of the $\nu_5=2$ and $\nu_2=\nu_5=1$ levels*, Journal of Molecular Spectroscopy 305 1-9 (2014).
- (70) Adriana Predoi-Cross, **Hoimonti Rozario**, Gianfranco Di Lonardo, Luciano, Fusina, Filippo Tamassia, *Far-Infrared Spectra and Spectroscopic Parameters of $^{15}NH_2D$ in the Ground State*, Journal of Molecular Spectroscopy 301 13-14 (2014).
- (69) **Robab Hashemi, Hoimonti Rozario, Chad Povey**, Adriana Predoi-Cross, *Line-shape models testing on six acetylene transitions in the $\nu_1+\nu_3$ band broadened by N_2* , Journal of Quantitative Spectroscopy and Radiative Transfer 140 58-66 (2014).
- (68) Adriana Predoi-Cross, **Eric Johnson, Darrel Hemsing, Hoimonti Rozario**, Georg Ch. Mellau, *Climbing up the vibrational ladder of $HC^{15}N$: High-temperature near-infrared emission measurements*, Journal of Molecular Spectroscopy, 293-294 27-32 (2013).
- (67) **Chad Povey, Mileno Guillorel-Obregon**, Adriana Predoi-Cross, Sergey V. Ivanov, Oleg G. Buzykin, Franck Thibault, *Low pressure line shape study of nitrogen perturbed acetylene transitions in the $\nu_1+\nu_3$ band over a range of temperatures*, Canadian Journal of Physics 91(11) 896-905 (2013).
- (66) **Hoimonti Rozario, Robab Hashemi, Amr Ibrahim**, Adriana Predoi-Cross, *Line shape study of the carbon dioxide laser band I*, Canadian Journal of Physics 91(11) 924-936 (2013).
- (65) **Amr Ibrahim**, Adriana Predoi-Cross, **Chad Povey**, *Handling Techniques for Channel Spectra in Synchrotron-Based Fourier Transform Spectra*, Canadian Journal of Physics 91(11) 910-923 (2013).
- (64) M.A.H. Smith, D. Chris Benner, A. Predoi-Cross, V. Malathy Devi, *Air- and self-broadened half widths, pressure-induced shifts, and line mixing in the ν_2 band of $^{12}CH_4$* , Journal of Quantitative Spectroscopy and Radiative Transfer 133 217-234 (2014).
- (63) Adriana Predoi-Cross, Michel Herman, Luciano Fusina, Gianfranco Di Lonardo, *The infrared spectrum of $^{13}C_2H_2$ in the 60 - 2600 cm^{-1} region: bending states up to $\nu_4 + \nu_5 = 4$* , Molecular Physics 110 Issue 21/22 (2012) 2621-2632.
- (62) **Chad Povey**, Adriana Predoi-Cross, Daniel R. Hurtmans, *Low pressure line shape study of acetylene transitions in the $\nu_1+\nu_2+\nu_4+\nu_5$ band over a range of temperatures*, Molecular Physics 110 Issue 21/22 (2012) 2633-2644.
- (61) **Hoimonti Rozario, Jolene Garber, Chad Povey**, Daniel Hurtmans, Jeanna Buldyreva, Adriana Predoi-Cross, *Experimental and theoretical study of N_2 -broadened acetylene line parameters in the $\nu_1+\nu_3$ band over a range of temperatures*, Molecular Physics. 110 Issue 21/22 (2012) 2645-2663.
- (60) A. Predoi-Cross, Michel Herman, Luciano Fusina, Gianfranco Di Lonardo, *The far infrared spectrum of trans-formic acid: An extension up to 175 cm^{-1}* , Journal of Quantitative Spectroscopy & Radiative Transfer 113 (2012) 1034-1137.
- (59) J.P. Bouanich, A. Predoi-Cross, *Theoretical calculations for line-broadening and pressure-shifting in the $\nu_1+\nu_2+\nu_4+\nu_5$ band of acetylene over a range of temperatures*, Molecular Physics 109 (17-18) (2011) 2071-2081.
- (58) **C. Povey**, A. Predoi-Cross, D. R. Hurtmans, *Line shape study of acetylene transitions in the $\nu_1+\nu_2+\nu_4+\nu_5$ band over a range of temperatures*, Journal of Molecular Spectroscopy 268 (2011) 177-188.
- (57) A. Ceausu-Velcescu, P. Pracna, A. Predoi-Cross, *Rovibrational spectra of DCF_3 in the 1000 cm^{-1} region: the $\nu_5=1$ and $\nu_6=2$ levels revisited*, Journal of Molecular Spectroscopy 267 (2011) 150-157.
- (56) G. Moruzzi, **R.J. Murphy, J. Vos**, R.M. Lees, A. Predoi-Cross, B.E. Billinghurst, *Fourier transform synchrotron spectroscopy of torsional and CO-stretching bands of $CH_3^{17}OH$* , Journal of Molecular Spectroscopy 268 (2011) 211-220.

- (55) B.E. Billinghamurst, R.M. Lees, A.R.W. McKellar, A. Predoi-Cross, *Astrophysics and Atmospheric Sciences at the CLS: The Far Infrared Beamline*, Physics in Canada, 67 (2011) 11-16.
- (54) N. Jacquinet-Husson, L. Crepeau, R. Armante, C. Boutammine, A. Chedin, N.A. Scott, C. Crevoisier, V. Capelle, C. Boone, N. Poulet-Crovisier, A. Barbe, A. Campargue, Y. Benilan, D.C. Benner, B. Bézard, V. Boudon, L.R. Brown, L.H. Coudert, A. Coustenis, V. Dana, S. Fally, A. Fayt, J.-M. Flaud, A. Goldman, M. Herman, G. J. Harris, D. Jacquemart, A. Jolly, I. Kleiner, A. Kleinböhl, F. Kwabia-Tchana, N. Lavrenjeva, N. Lacombe, J.-Y. Mandin, A. Maki, V. Malathy Devi, S. Mikhailenko, C.E. Miller, N. Moazzen-Ahmadi, A. Nikitin, J. Orphal, V. Perevalov, A. Perrin, D.T. Petkie, A. Predoi-Cross, C. P. Rinsland, J. Remedios, M. Rotger, K. Sung, S. Tashkun, J. Tennyson, R.A. Toth, A-C. Vandaele, J. Vander Auwera, L-H Xu, *The 2009 edition of the GEISA spectroscopic database*, Journal of Quantitative Spectroscopy & Radiative Transfer 112 (2011) 2395–2445.
- (53) A. Dasgupta, A. Predoi-Cross, *Women in physics*, The Encyclopedia of Women in Today's World, SAGE Publications (2011).
- (52) M.A.H. Smith, D. Chris Benner, A. Predoi-Cross, V. Malathy Devi, *A multispectrum analysis of the ν_4 band of $^{13}\text{CH}_4$: Widths, shifts, and line mixing coefficients*, Journal of Quantitative Spectroscopy and Radiative Transfer, 112 (2011) 952–996.
- (51) A. Predoi-Cross, M. Herman, L. Fusina, G. Di Lonardo, *The far-infrared spectrum of $^{12}\text{C}_2\text{HD}$* , Molecular Physics, 109 (4), 559–563 (2011).
- (50) (a) A. Predoi-Cross, **W. Liu, R. Murphy, C. Povey**, R.R. Gamache, A.L. Laraia, A.R.W. McKellar, D.R. Hurtmans, V. Malathy Devi, *Measurement and computations for temperature dependences of self-broadened carbon dioxide transitions in the 30012←00001 and 30013←00001 bands*, JQSRT, 111 (9) 2010, 1065–1079. (b) Corrigendum to "Measurement and computations for temperature dependences of self-broadened carbon dioxide transitions in the 30012←00001 and 30013←00001 bands" [JQSRT, 111 (9) (2010) 1065–1079] JQSRT (2015) 256.
- Adriana Predoi-Cross, W. Liu, Reba Murphy, Chad Povey, R. Gamache, A. Laraia, A.R.W. McKellar, Daniel Hurtmans, V.M. Devi
- (49) B. Amyay, M. Herman, A. Fayt, L. Fusina, A. Predoi-Cross, *High resolution FTIR investigation of $^{12}\text{C}_2\text{H}_2$ in the FIR spectral range using synchrotron radiation*, Chemical Physics Letters, 491 (1-3) (2010) 17–19.
- (48) A. Predoi-Cross, **A. Ibrahim**, M. Herman, L. Fusina, G. Nivellini, G. Di Lonardo, *The high resolution infrared spectrum of the ν_4 band of 1,1,1-trifluoro-ethane*, Mol. Phys. 108 (18) (2010) 2303-2307.
- (47) G. Moruzzi, **R.J. Murphy**, R.M. Lees, A. Predoi-Cross, B.E. Billinghamurst, *High-resolution synchrotron-based Fourier transform spectroscopy of $\text{CH}_3^{17}\text{OH}$ in the 120-350 cm^{-1} far-infrared region*, Mol. Phys. 108 (18) (2010) 2343-2353.
- (46) M.A.H. Smith, D. Chris Benner, A. Predoi-Cross, V. Malathy Devi, *Multispectrum analysis of $^{12}\text{CH}_4$ in the ν_4 spectral region: II. Self-broadened half widths, pressure-induced shifts, temperature dependences and line mixing*, Database, Journal of Quantitative Spectroscopy and Radiative Transfer, 111 (9) (2010) 1152-1166.
- (45) P. Pracna, A. Ceausu-Velcescu, A. Predoi-Cross, Š. Urban, *Rovibrational spectroscopy of the Fermi-interacting $\nu_4 = 1$ and $\nu_3 = \nu_6 = 1$ levels of DCF_3* , J. Mol. Spec. 259 (2010) 1-10.
- (44) A. Predoi-Cross, D. Tokaryk, *Foreword*, Canadian Journal of Physics, special issue dedicated to the spectroscopists at University of New Brunswick, 87 (5) (2009) iii.
- (43) M.A.H. Smith, D. Chris Benner, A. Predoi-Cross, V. Malathy Devi, *Multispectrum Analysis of $^{12}\text{CH}_4$ in the ν_4 band: I. Air-broadened half widths, pressure-induced shifts, temperature dependences and line mixing*, Journal of Quantitative Spectroscopy and Radiative Transfer, 110 (9-10) (2009) 639-653.
- (42) **C. Povey** and A. Predoi-Cross, *Computations of temperature dependences for line shape parameters in the 30012 ← 00001 and 30013 ← 00001 bands of pure CO_2* , J. Mol. Spec., 257 (2) 2009, 187-199.
- (41) L.S. Rothman, I.E. Gordon, A. Barbe, D. Chris Benner, P.F. Bernath, M. Birk, V. Boudon, L.R. Brown, A. Campargue, J.-P. Champion, K. Chance, L.H. Coudert, V. Dana, V.M. Devi, S. Fally, J.-M. Flaud, R.R. Gamache, A. Goldman, D. Jacquemart, I. Kleiner, N. Lacombe, W.J. Lafferty, J.-Y. Mandin, S.T. Massie, S. Mikhailenko, C.E. Miller, N. Moazzen-Ahmadi, O.V. Naumenko, A. Nikitin, J. Orphal, A. Predoi-Cross, V. Perevalov, A. Perrin, C.P. Rinsland, M. Rotger, M. Šimečková, M.A.H. Smith, K. Sung, S. Tashkun, J.

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- (36) A. Predoi-Cross, **K. Hambrook**, R. Keller, D. Hurtmans, **C. Povey**, H. Over, G. Mellau, *Spectroscopic Lineshape Study of the Self-Perturbed Oxygen A-Band*, Journal of Molecular Spectroscopy, 248 (2008) 85-110.
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- (2) N. Iftimia, Adriana Predoi and F. Serban, *Heterodyne Detection Technique in Pollutants Monitoring*, Studies and Researches in Physics, Acad. Ed., No. 2/ 1992, Romania (1992).
- (1) M. Bursanescu, Adriana Predoi and M. Pearsica, *Hollow Metallic Waveguide CO_2 Laser*, Studies and Researches in Physics, Acad. Ed., No. 2, Romania, (1992).

PAPERS IN PEER REVIEWED CONFERENCE PROCEEDINGS

- (2) G. Moruzzi, A. Predoi-Cross, **R.J. Murphy**, R. M. Lees, *High resolution study of the 120-350 cm^{-1} range of $CH_3^{17}OH$ using synchrotron based spectra*. Proceedings of the 5th International Workshop on Infrared Microscopy and Spectroscopy (WIRMS) with Accelerator Based Sources, Banff, Alberta, American Institute of Physics, 1214 (2009) 91-93.
- (1) **A. Ibrahim**, A. Predoi-Cross, P.M. Teillet, *Techniques for Handling and Removal of Spectral Channels in Fourier Transform Synchrotron Based Spectra*, Proceedings of the 5th International Workshop on Infrared Microscopy and Spectroscopy (WIRMS) with Accelerator Based Sources, Banff, Alberta, American Institute of Physics, 1214 (2009) 97-99.

PAPERS IN NON-REFEREED CONFERENCE PROCEEDINGS

- (24) V. Malathy Devi, D. Chris Benner, Keeyoon Sung, Mary Ann H. Smith, Arlan Mantz, Adriana Predoi-Cross, *Self- and air-broadened line shape parameters of $^{12}CH_4$: 4500-4620 cm^{-1}* , Proceedings of the HITRAN Conference, Cambridge, MA, USA, June (2014) 90.
- (23) V. Malathy Devi, D. Chris Benner, Keeyoon Sung, Adriana Predoi-Cross, Mary Ann H. Smith, Arlan Mantz, T. Sinyakova, J. Buldyreva, *Measured and Theoretical Self- and N_2 -Broadened Line Parameters in the ν_6 band of CH_3D* , Proceedings of the HITRAN Conference, Cambridge, MA, USA, June (2014) 91-92.
- (22) **Robab Hashemi, Hoimonti Rozario, Chad Povey, Jolene Garber, Mark Derksen**, Adriana Predoi-Cross, *Recent line-shape and Doppler thermometry studies involving transitions in the $\nu_1 + \nu_3$ band of acetylene*, Proceedings of the HITRAN Conference, Cambridge, MA, USA, June (2014) 93.
- (21) A. Predoi-Cross, R.M. Lees, G. Moruzzi, **R.J. Murphy, J. Vos**, B.E. Billinghurst, *Fourier transform spectra and vibrational coupling for O-17 methanol*, 2010 CLS Research Report, (2010) 20-21.
- (20) A. Predoi-Cross, **A. Ibrahim**, M. Herman, L. Fusina, G. Nivellini, G. Di Lonardo, *Spectroscopic Study of the ν_4 Band of CH_3CF_3 Using Synchrotron Based Fourier Transform Spectra*, 2009 CLS Activity report, (2010) 78-79.

- (19) G. Moruzzi, **R.J. Murphy**, R.M. Lees, A. Predoi-Cross, B. Billinghurst, *High-Resolution FIR Spectra of the O-17 Isotopologue of Methanol for Astrophysical Applications*, 2009 CLS Activity report, (2010) 76-77.
- (18) **C. Povey**, A. Predoi-Cross, **J. Sorell**, **A. Chatelet**, *Line shape study of R-branch transitions in the $\nu_1+\nu_2+\nu_4+\nu_5$ band of acetylene over a range of temperatures*, Proceedings of the 20th International Conference on Spectral Line Shapes, St. John's, Newfoundland, American Institute of Physics, 1290 (2010) 189-194.
- (17) **A. Ibrahim**, A. Predoi-Cross, P.M. Teillet, *Techniques for Handling Channeling in High Resolution Fourier Transform Spectra Recorded with Synchrotron Sources*, Proceedings of the 20th International Conference on Spectral Line Shapes, St. John's, Newfoundland, American Institute of Physics, 1290 (2010) 147-151.
- (16) A. Predoi-Cross, **A. Ibrahim**, B. Billinghurst, *Spectroscopic Studies of Atmospheric Constituents Enabled by Synchrotron Techniques*, 2008 CLS Activity report, (2009) 88-89.
- (15) A. Predoi-Cross, R. Austin, S. Bhadra, J. McKenna, L.-H. Xu, M. Steinitz, *Women Physicists in Canada*, Physics in Canada, October 2008.
- (14) A. Predoi-Cross, **C. Povey**, A.R.W. McKellar, **W. Liu**, **R. Murphy**, D. Hurtmans, *Lineshape study of carbon dioxide transitions for tropospheric remote sensing applications*, Proceedings of the 30th Canadian Symposium on Remote Sensing, paper 536.
- (13) P. Pracna, A. Ceausu-Velcescu, A. Predoi-Cross, and B. Billinghurst, *Spectroscopic studies of deuterated fluoroform in the context of atmospheric greenhouse gas monitoring*, Proceedings of the 30th Canadian Symposium on Remote Sensing, paper 534.
- (12) A. Predoi-Cross, R. Austin, S. Bhadra, J. McKenna, L.-H. Xu, Michael Steinitz, *Women Physicists in Canada, Proceedings of the 3rd IUPAP Conference of Women in Physics*, American Institute of Physics, 1119 (2008) 95-96.
- (11) François Rohart, Georges Wlodarczak, Adriana Predoi-Cross, *Molecular absorption lineshapes: analysis of departures from Voigt profile*, Proceedings Atmospheric Spectroscopy and Applications, Reims, France (2008) 10-13.
- (10) François Rohart, Georges Wlodarczak, Adriana Predoi-Cross, *Forme des raies d'absorption moléculaire : comment interpréter les écarts au profil de Voigt?*, Colloque de la division de Physique Atomique, Moléculaire et Optique de la Société Française de Physique Journées de Spectroscopie Moléculaire, Lille, France, (2008), Proceedings, 275.
- (9) M. A. H. Smith, D. Chris Benner, V. Malathy Devi, A. Predoi-Cross, *Self- and Air-Broadening, Shifts, and Line Mixing in the ν_4 and ν_2 Bands of CH_4* , Proceedings of the 10th International HITRAN Meeting, Boston MA, USA (2008) 28.
- (8) D. Chris Benner, V. Malathy Devi, A. Predoi-Cross, A. R. W. McKellar, L. R. Brown, R. A. Toth., C. E. Miller, *Temperature Dependence of Air-Broadened Half Width and Pressure Shift Coefficients in the $30012 \leftarrow 00001$ Band of $^{12}\text{C}^{16}\text{O}_2$* , Proceedings of the 10th International HITRAN Meeting, Boston MA, USA (2008) 25.
- (7) A. Predoi-Cross, *Molecular spectroscopic studies for remote sensing of earth and planetary atmospheres*, American Institute of Physics, 15 (2008) 289-297.
- (6) A. Predoi-Cross, A.R.W. McKellar, D. R. Hurtmans, *High accuracy line profile study of transitions in the $30012 \leftarrow 00001$ and $30013 \leftarrow 00001$ bands of carbon dioxide*, Proceedings of the International Conference on Spectral Line Shapes, American Institute of Physics, 15 (2008) 265-273.
- (5) A. Predoi-Cross, J.-P. Bouanich, F. Rohart, D.R. Hurtmans, *Xe-Broadened CO Line Shapes In The Fundamental Band At 349 K*, Proceedings of the International Conference on Spectral Line Shapes, American Institute of Physics, 15 (2008) 178-181.
- (4) A. Predoi-Cross, **K. Hambrook**, **H. Heung**, **C. Povey**, **I. Schofield**, R. Keller, G.Ch. Mellau, D. Hurtmans, *Lineshapes for atmospheric remote sensing – the case of the oxygen molecule*, Proc. Multi. Grad. Res. Conf. 1 (2007) 158-169, invited contributed paper.
- (3) A.V. **Unni**, **A.V. Unni**, **H. Heung**, V.M. Devi, D.C. Benner, L.R. Brown, A. Predoi-Cross, *Spectroscopic study of line mixing effects in the $\nu_2+\nu_3$ band of methane*, Proc. Multi. Grad. Res. Conf. 1 (2007) 109-118.

(2) J. McKenna, M. Kilfoil, A. Predoi-Cross, M. Steinitz, *Women in physics in Canada: Progress and shortcomings*, Proceedings of the 2nd IUPAP Conference of Women in Physics, Rio de Janeiro, Brazil, May (2005) 103-104.

(1) A. Predoi-Cross, V. Malathy Devi, D.C. Benner, L.R. Brown, M.A.H. Smith, and J.R. Drummond, *Precise line parameters of methane in the MOPITT CO and methane channels*, OSA meeting on Fourier Transform Spectroscopy, June (1999).

INVITED AND PLENARY TALKS

(26) A. Predoi-Cross, *Challenges and applications of synchrotron based and laser based - line shape studies*, The XVIIIth Symposium and School on High Resolution Molecular Spectroscopy, Tomsk, Russia (June 2015).

(25) A. Predoi-Cross, *Spectroscopic Line-shape Studies for Environmental and Metrologic Applications*, 2015 CAP Congress - University of Alberta, Edmonton, Canada (June 2015) (unable to attend due to work related problems).

(24) A. Predoi-Cross, *Synchrotron based spectroscopic line shape studies*, Synchrotron Based Far-Infrared Vibrational-Rotational Spectroscopy Workshop, University of Illinois, Urbana Champaign, USA (June 2015) (unable to attend due to work related problems).

(23) A. Predoi-Cross, *Challenges of line shape studies for remote sensing applications*, Solvay workshop "Atomic and molecular collision mechanisms", Bruxelles, Belgium (March 2015) (unable to attend due to illness).

(22) **Robab Hashemi, Hoimonti Rozario, Chad Povey, Jolene Garber, Mark Derksen**, Adriana Predoi-Cross, *Acetylene line-shape study in $\nu_1 + \nu_3$ band for Doppler thermometry*, The International French-German summer school "New experimental and theoretical developments in molecular spectroscopy - pushing the limits", SPECMO_2014, Corsica, France (September 2014).

(21) A. Predoi-Cross, *Opening Address to the Participants of ICWIP14, on Behalf of the Canadian Association of Physicists*, 5th IUPAP International Conference on Women in Physics, Waterloo (August 2014).

(20) A. Predoi-Cross, *Challenges and Applications of Line-Shape Studies of Acetylene Transitions in the 1.55 microns range*, Dipartimento di Chimica Industriale "Toso Montanari", University of Bologna, Bologna, Italy (August 28, 2014).

(19) A. Predoi-Cross, *Fundamentals of spectroscopy for atmospheric remote sensing*, AMETHYST Workshop on Hyperspectral Imaging Science & Technology 2013, Canada, Alberta, Lethbridge (June 2013).

(18) A. Predoi-Cross, *Academic Writing*, AMETHYST Workshop on Career Development and Workforce Preparation 2013, Canada, Alberta, Lethbridge (February 2013).

(17) **H. Rozario**, A. Predoi-Cross, *High Resolution Spectroscopy of Acetylene and Hydrogen Cyanide*, AMETHYST Program Committee Meeting #6, Alberta, Lethbridge (December 2012).

(16) **C. Povey**, A. Predoi-Cross, *High Resolution Spectroscopy and Applications*, AMETHYST Program Committee Meeting #4, Alberta, Lethbridge (December 2011).

(15) A. Predoi-Cross, *Progress and Challenges for Canadian Women Physicists*, Women in Physics Canada, Waterloo (July 2011).

(14) A. Predoi-Cross, *Attracting girls to physics at all academic levels: a Canadian perspective*, 4th IUPAP International Conference on Women in Physics, Workshop on "Attracting girls to physics", Stellenbosch, South Africa, April 2011 (declined).

(13) A. Predoi-Cross, *Remote sensing detection of molecular species of Earth and planetary atmospheres*, 4th Annual University of Lethbridge GSA Conference, Lethbridge (March 2010).

(12) A. Predoi-Cross, *Molecular absorption lineshapes: experimental techniques and analysis of departures from traditional lineshape models*, Univ. Lethbridge (January 2010).

(9-11) A. Predoi-Cross, *Spectroscopic Studies for Atmospheric Work: Problems and Solutions*, Prairies Universities seminar Series, Univ. Saskatchewan, Canadian Light Source, Univ. Regina (January 2010).

(8) A. Predoi-Cross, *Progress and Challenges for Canadian Women Physicists*, Women's Way into Science: Lesson Learned and New Challenges for gender Equality, PRAGES, Rome, Italy (December 2009).

(7) A. Predoi-Cross, *Molecular Spectroscopy Applied to Remote Sensing of Planetary Atmospheres*, The 4th Canada-America-Mexico Graduate Student Physics Conference, Acapulco, Mexico, October (2009) invited talk.

- (6) A. Predoi-Cross, Spectroscopic studies of atmospheric constituents enabled by synchrotron techniques, Saskatoon Synchrotron Summer School, Canadian Light Source, Saskatoon, Canada (June 2009), invited talk.
- (5) A. Predoi-Cross, *Molecular spectroscopic studies for remote sensing of earth and planetary atmospheres*, International Conference on Spectral Line Shapes, Valladolid, Spain, June (2008) invited talk I21.
- (4) A. Predoi-Cross, A.R.W. McKellar, D. Hurtmans, *High accuracy line profile study of transitions in the 30012 ← 00001 and 30013 ← 00001 bands of carbon dioxide*, International Conference on Spectral Line Shapes, Valladolid, Spain, June (2008) plenary talk I14.
- (3) A. Predoi-Cross, *Laboratory Spectroscopy for Planetary Remote Sensing*, Canadian Association of Physicists Congress, Quebec City, Canada, June (2008) invited talk MO-A9-4.
- (2) A. Predoi-Cross, K. Hambrook, C. Povey, I. Schofield, R. Keller, G.Ch. Mellau, D. Hurtmans, *Oxygen spectral lineshapes for remote sensing applications*, 90th Canadian Chemistry Conference and Exhibition, Winnipeg MB, Canada, May (2007) invited talk.
- (1) Adriana Predoi, *FTIR Spectroscopy and FIR Laser Emission in the CH₃-Rocking Band of C13-Methanol*, Institute of Optoelectronics, Bucharest, Romania, September 1993 (invited lecture).

RECENT SEMINAR AND CONFERENCE PRESENTATIONS

- (148) **Koorosh Esteki, Abdullah Al Mashwood, Hoimonti Rozario**, Adriana Predoi-Cross, *Spectroscopic line-shape studies of acetylene broadened by carbon dioxide in the $\nu_1 + \nu_3$ band over a range of temperatures and pressures*, The SPEC-ATMOS summer school, Fréjus, France, June (2015) poster.
- (147) **Piklu Sutradhar, Neeraj Prakash, Vince Weiler, Jordan Cramer, Adriana Predoi-Cross**, *Simulation of instrumental setup of a tunable diode laser absorption spectrometer using trace gas monitoring*, The SPEC-ATMOS summer school, Fréjus, France, June (2015) poster.
- (146) A. Predoi-Cross, **H. Rozario**, E. Cané, L. Fusina, G. Di Lonardo, M. Herman, *The far-infrared spectrum of $^{15}\text{NH}_3$* , The SPEC-ATMOS summer school, Fréjus, France, June (2015) poster.
- (145) **R. Hashemi, A. Arifzaman**, V. Malathy Devi, D. Chris Benner, K. Sung, L. Brown, M.A.H. Smith, Adriana Predoi-Cross, *High Resolution Spectroscopy of Methane for Climate Research Applications*, The SPEC-ATMOS summer school, Fréjus, France, June (2015) poster.
- (144) **Koorosh Esteki, Abdullah Al Mashwood, Hoimonti Rozario, Chad Povey**, Adriana Predoi-Cross, Ronald M. Lees, *Recent Line-shape studies of acetylene broadened by carbon dioxide in the $\nu_1 + \nu_3$ band*, Congress of Canadian Association of Physicists, Edmonton, June (2015) poster.
- (143) R. Hashemi, A. Arifzaman, V. Malathy Devi, D. Chris Benner, K. Sung, L. Brown, M.A.H. Smith, Adriana Predoi-Cross, A. Mantz, *Self- and Air-Broadened Line Shape Parameters of Methane in the 2.3 Microns Region*, Congress of Canadian Association of Physicists, Edmonton, June (2015).
- (142) Adriana Predoi-Cross, Hoimonti Rozario, Michel Herman, Elisabetta Cané, Gianfranco Di Lonardo, Luciano Fusina, *The spectrum of $^{15}\text{NH}_3$ in the 66-2000 cm^{-1} region*, Congress of Canadian Association of Physicists, Edmonton, June (2015).
- (141) **Hoimonti Rozario, Robab Hashemi, Jolene Garber, Chad Povey**, Jeanna Buldyreva, Georg Ch. Mellau, Adriana Predoi-Cross, *Spectroscopic Study of Acetylene and Hydrogen Cyanide*, The International French-German summer school "New experimental and theoretical developments in molecular spectroscopy - pushing the limits", SPECMO-2014, Corsica, France September (2014) poster.
- (140) Adriana Predoi-Cross, **Hoimonti Rozario**, Elisabetta Canè, Gianfranco Di Lonardo, Luciano Fusina, Michel Herman, *The far-infrared Spectrum of $^{15}\text{NH}_3$* , The 23rd International Conference on High Resolution Molecular Spectroscopy, Bologna, Italy, September (2014) poster WP14.
- (139) Adina-Adriana Ceausu-Velcescu, Petr Pracna, Adriana Predoi-Cross, *Rovibrational spectra of DCF_3 in the 2000 cm^{-1} region: high-resolution study of the $\nu_5=2$ and $\nu_2=\nu_5=1$ levels*, The 23rd International Conference on High Resolution Molecular Spectroscopy, Bologna, Italy, September (2014) poster TP15.
- (138) **Robab Hashemi, Hoimonti Rozario, Chad Povey, Jolene Garber, Mark Derksen**, Adriana Predoi-Cross, *Recent Line-Shape and Doppler Thermometry Studies Involving Transitions in the $\nu_1 + \nu_3$ band*, The 23rd International Conference on High Resolution Molecular Spectroscopy, Bologna, Italy, September (2014) talk SC04.

- (137) T. Sinyakova, J. Buldyreva, V.M. Devi, D.C. Benner, K. Sung, A. Predoi-Cross, M.A.H. Smith, A. Mantz, *Experimental and theoretical collisional parameters of CH_3D-N_2 lines for remote sensing of planetary atmospheres: J- and K-dependences and temperature exponents*, The 23rd International Conference on High Resolution Molecular Spectroscopy, Bologna, Italy, September (2014) talk WC07.
- (136) V. Malathy Devi, D. Chris Benner, Keeyoon Sung, Mary Ann H. Smith, Arlan Mantz, Adriana Predoi-Cross, *Self- and air-broadened line shape parameters of $^{12}CH_4$: 4500-4620 cm^{-1}* , HITRAN Conference, Cambridge, MA, USA, June (2014) poster PII-13.
- (135) V. Malathy Devi, D. Chris Benner, Keeyoon Sung, Adriana Predoi-Cross, Mary Ann H. Smith, Arlan Mantz, T. Sinyakova, J. Buldyreva, *Measured and Theoretical Self- and N_2 -Broadened Line Parameters in the ν_6 band of CH_3D* , HITRAN Conference, Cambridge, MA, USA, June (2014) poster PII-14.
- (134) **Robab Hashemi, Hoimonti Rozario, Chad Povey, Jolene Garber, Mark Derksen**, Adriana Predoi-Cross, *Recent line-shape and Doppler thermometry studies involving transitions in the $\nu_1 + \nu_3$ band of acetylene*, HITRAN Conference, Cambridge, MA, USA, June (2014) poster PII-15.
- (133) V. Malathy Devi, D. Chris Benner, Keeyoon Sung, Mary Ann H. Smith, Arlan Mantz, Adriana Predoi-Cross, *Self- and air-broadened line shape parameters of $^{12}CH_4$: 4500-4620 cm^{-1}* , International Symposium on Molecular Spectroscopy 69th Meeting, Champaign-Urbana, Illinois, USA June (2014) oral presentation.
- (132) V. Malathy Devi, D. Chris Benner, Keeyoon Sung, Mary Ann H. Smith, Arlan Mantz, Adriana Predoi-Cross, *Multispectrum analysis of methane from 4500 to 4620 cm^{-1} : self- and air-broadened widths, shifts and line mixing coefficients*, GEISA Workshop: Towards a new vision of spectroscopic databases, Paris, France, June (2014) poster.
- (131) V. Malathy Devi, D. Chris Benner, Keeyoon Sung, Adriana Predoi-Cross, Mary Ann H. Smith, Arlan Mantz, *Temperature dependences of self- and N_2 -broadened line parameters in the ν_6 band of CH_3D* , GEISA Workshop: Towards a new vision of spectroscopic databases, Paris, France, June (2014) oral presentation.
- (130) **Robab Hashemi, Hoimonti Rozario, Chad Povey, Jolene Garber, Mark Derksen**, Adriana Predoi-Cross, *Recent line-shape and Doppler thermometry studies involving transitions in the $\nu_1 + \nu_3$ band of acetylene*, GEISA Workshop: Towards a new vision of spectroscopic databases, Paris, France, June (2014) poster.
- (129) **J. Garber, M. Derksen**, A. Predoi-Cross, *Using Tunable Diode Infrared Laser Spectroscopy to Determine the Boltzmann Constant*, Physics and Astronomy Summer Seminar Series, Canada, Alberta, Lethbridge (August 2013).
- (128) **C. Povey**, A. Predoi-Cross, *Fundamentals of High Resolution Spectroscopy*, Physics and Astronomy Summer Seminar Series, Canada, Alberta, Lethbridge (June 2013).
- (127) **R. Hashemi**, A. Predoi-Cross, *High resolution and high accuracy study of spectroscopic lineshape models*, Physics and Astronomy Summer Seminar Series, Canada, Alberta, Lethbridge (July 2013).
- (126) **H. Rozario**, A. Predoi-Cross, *High Resolution Emission Spectroscopy Of $H^{12}C^{15}N$* , Physics and Astronomy Summer Seminar Series, Canada, Alberta, Lethbridge (July 2013).
- (125) **H. Rozario**, A. Predoi-Cross, *Laboratory Spectroscopy of HDO for Validations of Venus Express and the Mars Reconnaissance Orbiter*, AMETHYST Research and Development Review Meeting, Canada, Alberta, Lethbridge (April 2013).
- (124) **H. Rozario**, A. Predoi-Cross, *High temperature infrared emission measurements of HCN*, AMETHYST Student Internship Presentations, Canada, Alberta, Lethbridge (October 2012).
- (123) **C. Povey, H. Rozario, J. Garber**, A. Predoi-Cross, D. Hurtmans, *Line shape study of acetylene transitions in the $\nu_1 + \nu_3$ and $\nu_1 + \nu_2 + \nu_4 + \nu_5$ bands over a range of temperatures*, FASE Solvay Workshop, Brussels (2012).
- (122) **C. Povey**, A. Predoi-Cross, D. Hurtmans, *Dicke narrowing of acetylene transitions in the $\nu_1 + \nu_2 + \nu_4 + \nu_5$ band over a range of temperatures*, Congress of the Canadian Association of Physicists, Calgary (2012).
- (121) **C. Povey**, A. Predoi-Cross, D. Hurtmans, *Dicke narrowing of acetylene transitions in the $\nu_1 + \nu_2 + \nu_4 + \nu_5$ band over a range of temperatures*, AMETHYST Research and Development Review Meeting (2012).
- (120) A. Predoi-Cross, *Synchrotron enabled spectroscopic study of formic acid and C-13 enriched acetylene*, AMETHYST Research and Development Review Meeting (2012).
- (119) **H. Rozario**, A. Predoi-Cross, *Spectroscopic Study Of Acetylene Line Parameters In The $\nu_1 + \nu_3$ Band Over A Range Of Temperature*, AMETHYST Research and Development Review Meeting (2012).

- (118) **H. Rozario**, A. Predoi-Cross, *Spectroscopic Study Of Acetylene Line Parameters In The $\nu_1 + \nu_3$ Band Over A Range Of Temperature*, Alberta Graduate Conference, Edmonton (2012).
- (117) **H. Rozario**, A. Predoi-Cross, *Spectroscopic Study Of Acetylene Line Parameters In The $\nu_1 + \nu_3$ Band Over A Range Of Temperature*, 6th GSA Conference, Lethbridge (2012).
- (116) **H. Rozario**, A. Predoi-Cross, *Fourier Transform Synchrotron Spectroscopy of Torsional and Co-Stretching Bands of $\text{CH}_3^{17}\text{OH}$* , CLS Summer School, Saskatoon (2011).
- (115) **H. Rozario**, A. Predoi-Cross, *Spectroscopic Study Of Trace Atmospheric Gases*, Women in Physics Canada, Waterloo, (2011).
- (114) **H. Rozario**, A. Predoi-Cross, *Spectroscopic Study Of Trace Atmospheric Gases*, AMETHYST Research and Development Review Meeting (2011).
- (113) **H. Rozario, J. Garber, C. Povey**, A. Predoi-Cross, D.R. Hurtmans, *Spectroscopic study of acetylene line parameters in the $\nu_1 + \nu_3$ band over a range of temperatures*, The 22nd Colloquium on High-Resolution Molecular Spectroscopy, Dijon, poster O37 (2011).
- (112) A. Ceausu-Velcescu, P. Pracna, A. Predoi-Cross, *Rovibrational spectra of DCF_3 in the 1000 cm^{-1} region: the $\nu_5=1$ and $\nu_6=2$ levels revisited*, The 22nd Colloquium on High-Resolution Molecular Spectroscopy, Dijon, poster Q8 (2011).
- (111) G. Moruzzi, **R.J. Murphy, J. Vos**, R.M. Lees, A. Predoi-Cross, B.E. Billingham, *Fourier transform synchrotron spectroscopy of torsional and CO-stretching bands of $\text{CH}_3^{17}\text{OH}$* , The 22nd Colloquium on High-Resolution Molecular Spectroscopy, Dijon, poster N37 (2011).
- (110) **C. Povey**, A. Predoi-Cross, D.R. Hurtmans, *Line shape study of acetylene transitions in the $\nu_1 + \nu_2 + \nu_4 + \nu_5$ band of acetylene over a range of temperatures*, The 22nd Colloquium on High-Resolution Molecular Spectroscopy, Dijon, poster F2 (2011).
- (109) Arundhati Dasgupta, Adriana Predoi-Cross, *Leaving and entering a career in physics in Canadian academia*, 4th IUPAP International Conference on Women in Physics, South Africa, poster (2011).
- (108) Arundhati Dasgupta, Roby Austin, Adriana Predoi-Cross, *Improving the workplace environment for women in physics in Canada*, 4th IUPAP International Conference on Women in Physics, South Africa, poster (2011).
- (107) Adriana Predoi-Cross, Arundhati Dasgupta, *Canadian gender studies and the role of women in physics*, 4th IUPAP International Conference on Women in Physics, South Africa, poster (2011).
- (106) Marina Milner-Bolotin, Adriana Predoi-Cross, Li-Hong Xu, Roby Austin, Shohini Ghose, *Physics outreach activities in elementary, secondary and post-secondary schools in Canada: an university – government-industry collaboration*, 4th IUPAP International Conference on Women in Physics, South Africa, poster (2011).
- (105) Adriana Predoi-Cross, *Attracting girls to physics at all academic levels: a Canadian perspective*, 4th IUPAP International Conference on Women in Physics, South Africa, poster (2011).
- (104) Adriana Predoi-Cross, Arundhati Dasgupta, Marina Milner-Bolotin, Michael Steinitz, Li-Hong Xu, Roby Austin, Shohini Ghose, *Women in Physics in Canada*, 4th IUPAP Conference on Women in Physics, South Africa, poster (2011).
- (103) A. Ceausu-Velcescu, P. Pracna, A. Predoi-Cross, *Recent developments in the high resolution study of the rovibrational spectrum of DCF_3 in the 1000 cm^{-1} region*, The 21st Colloquium on High-Resolution Molecular Spectroscopy, Poznan, poster (2010).
- (102) A. Predoi-Cross, **C. Povey**, *Measurement and computations for temperature dependences of self-broadened carbon dioxide transitions*, 20th International Conference on Spectral Line Shapes.
- (101) **C. Povey**, A. Predoi-Cross, **J. Sorell, A. Chatelet**, *Line shape study of R-branch transitions in the $\nu_1 + \nu_2 + \nu_4 + \nu_5$ band of acetylene over a range of temperatures*, 20th International Conference on Spectral Line Shapes, St. John's, NF (June 2010).
- (100) **A. Ibrahim**, A. Predoi-Cross, P.M. Teillet, *Techniques for Handling Channeling in High Resolution Fourier Transform Spectra Recorded with Synchrotron Sources*, 20th International Conference on Spectral Line Shapes, St. John's, NF (June 2010).
- (99) **A. Ibrahim**, A. Predoi-Cross, P.M. Teillet, *Techniques for Handling Channel Spectra in Synchrotron Source Fourier Transform Spectroscopy*, Annual Users Meeting, Canadian Light Source, Saskatoon, Canada, invited student talk (June 2010).

- (98) **A. Ibrahim**, A. Predoi-Cross, P.M. Teillet, *Techniques for Handling Channel Spectra in Synchrotron Source Fourier Transform Spectroscopy*, 4th Annual University of Lethbridge GSA Conference, Lethbridge (March 2010).
- (97) **C. Povey**, A. Predoi-Cross, *Tunable diode laser spectrometer*, 4th Annual University of Lethbridge GSA Conference, Lethbridge (March 2010).
- (96) **Chad Povey**, A. Predoi-Cross, *Line mixing in the 30012←00001 and 30013←00001 bands of CO₂*, The 4th Canada-America-Mexico Graduate Student Physics Conference, Acapulco, Mexico (October 2009)
- (95) G. Moruzzi, A. Predoi-Cross, **R.J. Murphy**, R.M. Lees, *High resolution study of the 120-350 cm⁻¹ range of the CH₃¹⁷OH using synchrotron based spectra*, 5th International Workshop on Infrared Microscopy and Spectroscopy with Accelerator Based Sources, Banff, Canada, September (2009) poster.
- (94) **A. Ibrahim**, A. Predoi-Cross, P. Teillet, *Techniques for handling and removal of spectral channels in Fourier transform synchrotron based spectra*, 5th International Workshop on Infrared Microscopy and Spectroscopy with Accelerator Based Sources, Banff, Canada, September (2009) talk.
- (93) P. Pracna, A. Ceausu-Velcescu, A. Predoi-Cross, B. Billinghurst, S. Urban, *Recent developments in the high resolution spectroscopy of the Fermi-interacting $\nu_4=1$ and $\nu_3=\nu_6=1$ levels of DCF₃*, The 21st Colloquium on High-Resolution Molecular Spectroscopy, Castellamare di Stabia, poster K20 (2009).
- (92) G. Moruzzi, A. Predoi-Cross, **R.J. Murphy**, R.M. Lees, *High resolution study of the 120-350 cm⁻¹ range of the CH₃¹⁷OH using synchrotron based spectra*, Colloquium on High-Resolution Molecular Spectroscopy, Castellamare di Stabia, poster D13 (2009).
- (91) **E. Johnson**, **D. Hemsing**, A. Predoi-Cross, G. Ch. Mellau, *Near-infrared emission measurements of HC¹⁵N*, Colloquium on High-Resolution Molecular Spectroscopy, Castellamare di Stabia, B6 (2009).
- (90) Adriana Predoi-Cross, *Spectroscopy for atmospheric remote sensing*, Infrared and Visible Observing Systems meeting, Lethbridge, August (2009).
- (89) **C. Povey**, *Collisional Effects In Molecular Spectra*, University of Lethbridge, Lethbridge AB, Canada, July (2009) seminar.
- (88) P. Pracna, A. Ceausu-Velcescu, A. Predoi-Cross, B. Billinghurst, *Spectroscopic studies of deuterated fluoroform in the context of atmospheric greenhouse gas monitoring*, Canadian Symposium on Remote Sensing in Lethbridge, Alberta, Canada, June (2009) talk 534.
- (87) A. Predoi-Cross, **C. Povey**, A.R.W. McKellar, W. Liu, R. Murphy, D. Hurtmans, *Lineshape study of carbon dioxide transitions for tropospheric remote sensing applications*, Canadian Symposium on Remote Sensing in Lethbridge, Alberta, Canada, June (2009) talk.536.
- (86) A. Predoi-Cross, R. Austin, S. Bhadra, J. McKenna, L.H. Xu, M. Steinitz, *Women in Physics in Canada: Slow but Sure Progress*, The 3rd IUPAP Conference of Women in Physics, Seoul, Korea, October (2008) poster C12.
- (85) A. Predoi-Cross, V.M. Devi, **C. Povey**, D.C. Benner, B. Billinghurst, *Line positions, intensities, and Q-branch line mixing in the 12201-03301 and 11101-10002 bands of pure carbon dioxide*, the 20th International Conference on High Resolution Molecular Spectroscopy, Prague, Czech Republic, September (2008) poster J11.
- (84) A. Predoi-Cross, **R.-J. Murphy**, R.M. Lees, S. Zhao, L.-H. Xu, G. Moruzzi, *High resolution FTIR Spectroscopy of the CO-Stretch Bands of CH₃¹⁷OH and CH₃¹⁸OH*, the 20th International Conference on High Resolution Molecular Spectroscopy, Prague, Czech Republic, September (2008) poster D23.
- (83) P. Pracna, A. Ceausu-Velcescu, A. Predoi-Cross, B. Billinghurst, *Rovibrational spectroscopy of the Fermi-interacting $\nu_4=1$ and $\nu_3 = \nu_6 = 1$. Levels of DCF₃*, the 20th International Conference on High Resolution Molecular Spectroscopy, Prague, Czech Republic, September (2008) poster D22.
- (82) François Rohart, Georges Wlodarczak, Adriana Predoi-Cross, *Molecular absorption lineshapes: analysis of departures from Voigt profile*, Atmospheric Spectroscopy and Applications 2008, Reims, France (2008) talk O1c.

- (81) François Rohart, Georges Wlodarczak, Adriana Predoi-Cross, *Forme des raies d'absorption moléculaire : comment interpréter les écarts au profil de Voigt?*, Colloque de la division de Physique Atomique, Moléculaire et Optique de la Société Française de Physique Journées de Spectroscopie Moléculaire, Lille, France, July (2008) poster AO 87.
- (80) D. Chris Benner, V. Malathy Devi, A. Predoi-Cross, A. R. W. McKellar, L. R. Brown, R. A. Toth., C. E. Miller, *Temperature Dependence of Air-Broadened Half Width and Pressure Shift Coefficients in the 30012←00001 Band of $^{12}\text{C}^{16}\text{O}_2$* , 63rd Ohio State University International Symposium on Molecular Spectroscopy, Columbus OH, USA, June (2008), paper TI10.
- (79) M. A. H. Smith, D. Chris Benner, V. Malathy Devi, A. Predoi-Cross, *Self- and Air-Broadening, Shifts, and Line Mixing in the ν_2 Band of CH_4* , 63rd Ohio State University International Symposium on Molecular Spectroscopy, Columbus OH, USA, June (2008), paper TE06.
- (78) M. A. H. Smith, D. Chris Benner, V. Malathy Devi, A. Predoi-Cross, *Self- and Air-Broadening, Shifts, and Line Mixing in the ν_4 and ν_2 Bands of CH_4* , The 10th International HITRAN Meeting, Boston MA, USA, June (2008), poster PI-10.
- (77) D. Chris Benner, V. Malathy Devi, A. Predoi-Cross, A. R. W. McKellar, L. R. Brown, R. A. Toth., C. E. Miller, *Temperature Dependence of Air-Broadened Half Width and Pressure Shift Coefficients in the 30012←00001 Band of $^{12}\text{C}^{16}\text{O}_2$* , The 10th International HITRAN Meeting, Boston MA, USA, June (2008), poster PI-7.
- (76) A. Predoi-Cross, *Laboratory Spectroscopy for Planetary Remote Sensing*, seminar, Physics Department, University of Lethbridge, AB, Canada, June 2008.
- (75) A. Predoi-Cross, F. Rohart, J.P. Bouanich, D. Hurtmans, *Xe-broadened CO line shapes in the fundamental band at 349 K*, International Conference on Spectral Line Shapes, Valladolid, Spain, June (2008) poster P69.
- (74) A. Predoi-Cross, F. Rohart, J.P. Bouanich, D. Hurtmans, Comparison of lineshape models in CO-Xe at 349 K, Canadian Association of Physicists Congress, Quebec City, Canada, June (2008) poster MO-POS-13.
- (73) A. Predoi-Cross, A.R.W. McKellar, V. M. Devi, D. Chris Benner, L.R. Brown, C. Miller, R. Toth, *Temperature dependence of spectroscopic line parameters of carbon dioxide in the 30012-00001 vibrational band*, Canadian Association of Physicists Congress, Quebec City, Canada, June (2008) poster MO-POS-12.
- (72) A. Predoi-Cross, M.A.H. Smith, D. Chris Benner, V.M. Devi, *Collision effects on methane lineshapes in the fundamental bands*, Canadian Association of Physicists Congress, Quebec City, Canada, June (2008) poster MO-POS-11.
- (71) A. Predoi-Cross, **C. Holladay**, **C. Povey**, J.P. Bouanich, G.Ch. Mellau, R. Keller, D. Hurtmans, *Nitrogen-Broadened Lineshapes in the A-Band of Oxygen: Experimental Results and Theoretical Calculations*, Canadian Association of Physicists Congress, Quebec City, Canada, June (2008) talk WE-A8-5.
- (70) A. Predoi-Cross, A.R.W. McKellar, V.M. Devi, D.C. Benner, D. Hurtmans, *High precision spectroscopic line parameters of carbon dioxide in the near infrared*, 91th Canadian Chemistry Conference and Exhibition, Special Symposium dedicated to Mike Gerry, Edmonton AB, Canada, May (2008), talk EN2-1020.
- (69) L. R. Brown, B.J. Drouin, C. E. Miller, J.C. Pearson, G.S. Orton, R.A. Toth, D.C. Benner, V.M. Devi, T.A. Blake, T. Masiello, R.L. Sams, R.A.H. Butler, J.P. Champion, P. Chelin, A. Dehayem, I. Kleiner, J. Orphal, R.R. Gamache, C.M. Humphrey, A. Predoi-Cross, **A.V. Unni**, **W. Liu**, H.S.P. Muller, A. Nikitin, C.P. Rinsland, M.A.H. Smith, *Laboratory spectroscopy of planetary molecules*, NASA planetary workshop, Maryland, USA, November (2007).
- (68) M.A.H. Smith, D.C. Benner, V.M. Devi, A. Predoi-Cross, *Pressure broadening, shifts and line mixing in the ν_4 bands of $^{12}\text{CH}_4$ and $^{13}\text{CH}_4$* , The Twentieth Colloquium on High Resolution Molecular Spectroscopy, Dijon, France, September (2007), poster F31.
- (67) A. Predoi-Cross, **A.V. Unni**, **W. Liu**, **I. Schofield**, **C. Holladay**, A.R.W. McKellar, D. Hurtmans, *Line shape parameters measurement and computations for self-broadened carbon dioxide transitions in the 30012 ← 00001 and 30013 ← 00001 bands, line mixing and speed dependence*, The Twentieth Colloquium on High Resolution Molecular Spectroscopy, Dijon, France, September (2007), poster J17.
- (66) A. Predoi-Cross, **K. Hambrook**, R. Keller, G.Ch. Mellau, **I. Schofield**, D. Hurtmans, *Lineshape study of the oxygen A-band*, The Twentieth Colloquium on High Resolution Molecular Spectroscopy, Dijon, France,

September (2007), poster J16.

(65) L. R. Brown, B.J. Drouin, C. E. Miller, J.C. Pearson, G.S. Orton, R.A. Toth, D.C. Benner, V.M. Devi, T.A. Blake, T. Masiello, R.L. Sams, R.A.H. Butler, J.P. Champion, P. Chelin, A. Dehayem, I. Kleiner, J. Orphal, R.R. Gamache, C.M. Humphrey, A. Predoi-Cross, **A.V. Unni, W. Liu**, H.S.P. Muller, A. Nikitin, C.P. Rinsland, M.A.H. Smith, *Laboratory spectroscopy of planetary molecules*, EPSC 2007-European Planetary Science Congress, Potsdam, Germany, August (2007), poster.

(64) **C. Holladay**, A. Predoi-Cross, **A.V. Unni, W. Liu, I. Schofield**, A.R.W. McKellar, D. Hurtmans, *Carbon Dioxide Lineshapes for Atmospheric Applications*, Physics Department, University of Lethbridge, Lethbridge AB, Canada, July (2007), seminar.

(63) M.A.H. Smith, D.C. Benner, V.M. Devi, A. Predoi-Cross, *Pressure broadening, shifts and line mixing in the ν_4 band of $^{12}\text{CH}_4$* , 62nd Ohio State University International Symposium on Molecular Spectroscopy, Columbus OH, USA, June (2007), paper TE04.

(62) A. Predoi-Cross, **A.V. Unni, H. Heung**, V.M. Devi, D.C. Benner, L.R. Brown, *Line mixing effects in the $\nu_2 + \nu_3$ band of methane*, 62nd Ohio State University International Symposium on Molecular Spectroscopy, Columbus OH, USA, June (2007), paper MG08.

(61) **N. Okeke**, A. Predoi-Cross, E. Johnson, D. Hemsing, G. Mellau, *Climbing up the vibrational ladder of HC^{15}N* , Canadian Association of Physicists Congress, Saskatoon SK, Canada, June (2007), poster MO-POS-23.

(60) A. Predoi-Cross, **A. V. Unni, H. Heung**, *Methane speed-dependent line mixing profiles*, Canadian Association of Physicists Congress, Saskatoon SK, Canada, June (2007), poster MO-POS-22.

(59) A. Predoi-Cross, **A.V. Unni, W. Liu, I. Schofield**, A.R.W. McKellar, D. Hurtmans, *High accuracy near-infrared spectroscopy of carbon dioxide for atmospheric applications*, Canadian Association of Physicists Congress, Saskatoon SK, Canada, June (2007), talk TU-A9-5.

(58) A. Predoi-Cross, **K. Hambrook, C. Povey, I. Schofield**, G. Mellau, R. Keller, D. Hurtmans, *Collisional-broadened and Dicke-narrowed lineshapes of oxygen*, Canadian Association of Physicists Congress, Saskatoon SK, Canada, June (2007), talk MO-A6-5.

(57) A. Predoi-Cross, K. Vos, S. Das, *Teaching Physics in an interactive classroom setting*, Canadian Association of Physicists Congress, Saskatoon SK, Canada, June (2007), talk SU-P5-4.

(56) A. Predoi-Cross, **A. V. Unni, H. Heung**, *Methane speed-dependent line mixing profiles*, 90th Canadian Chemistry Conference and Exhibition, Winnipeg MB, Canada, May (2007), poster 855.

(55) A. Predoi-Cross, **A.V. Unni, W. Liu, I. Schofield**, A.R.W. McKellar, D. Hurtmans, *High accuracy near-infrared spectroscopy of carbon dioxide for atmospheric applications*, 90th Canadian Chemistry Conference and Exhibition, Winnipeg MB, Canada, May (2007), poster 856.

(54) A. Predoi-Cross, **K. Hambrook, C. Povey, H. Heung, I. Schofield**, R. Keller, D. Hurtmans, H. Over, G. Mellau, *Spectroscopic analysis of the oxygen A-band*, The 20th International Conference on High Resolution Molecular Spectroscopy, Prague, Czech Republic, September (2006), Paper H21.

(53) R. Keller, **K. Hambrook**, A. Predoi-Cross, **C. Povey, H. Heung, I. Schofield**, D. Hurtmans, H. Over, G. Mellau, *Spectroscopic analysis of the oxygen A-band: Experimental details*, Justug-Liebig University, Giessen, Germany, July (2006), seminar.

(52) **K. Hambrook**, R. Keller, A. Predoi-Cross, **C. Povey, H. Heung, I. Schofield**, D. Hurtmans, H. Over, G. Mellau, *Spectroscopic analysis of the oxygen A-band: self-broadening, self-shift and line mixing coefficients*, Justug-Liebig University, Giessen, Germany, July (2006), seminar.

(51) **A.V. Unni, H. Heung**, A. Predoi-Cross, L.R. Brown, D.C. Benner, V.M. Devi, *Spectroscopic study of line mixing effects in the $\nu_2 + \nu_3$ band of methane*, GSA Conference, University of Lethbridge, Lethbridge AB, Canada, July (2006), poster P22.

(50) **A.V. Unni, H. Heung**, A. Predoi-Cross, L.R. Brown, D.C. Benner, V.M. Devi, *Spectroscopic study of line mixing effects in the $\nu_2 + \nu_3$ band of methane*, The 9th International HITRAN Meeting, Boston MA, USA, June (2006), poster 1.10.

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NON-REFEREED INDUSTRIALLY RELEVANT CONTRIBUTIONS

As a JDS Uniphase employee I researched and prepared reports on the following main topics:

- (1) Measurements and simulations of polarization mode dispersion (PMD), group delay ripple and chromatic dispersion (CD) in fiber optic components such as: WDM, DWDM, switches, fiber Bragg, AWG devices, circulators and optical modules.
- (2) Simulations for chromatic CD and PMD in high-speed long-haul and metro networks

My work has been presented in reports, internal seminars, presentations to scientists from other fiber-optic companies. Due to a non-disclosure agreement signed with the company I am not able to provide more details.