

BIOGRAPHICAL SKETCH

MARK G. CONDE, Ph.D.

PROFESSIONAL PREPARATION:

Undergraduate

University of Tasmania (Australia)	Physics	B.Sc; 1979-1981
University of Tasmania (Australia)	Physics	B.Sc. Honours (1 st Class); 1982

Graduate

University of Adelaide (Australia)	Physics	Ph.D.; 1983-1991
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Thesis topic: Fabry-Perot spectrometer observations of thermosphere wind and temperature under daytime, twilight, and nighttime conditions.

APPOINTMENTS:

From 2007: Assistant Professor of Physics, University of Alaska Fairbanks.
2004-2006: Senior Lecturer in Physics, La Trobe University (Australia.)
2001-2004: Assistant Professor of Physics, University of Alaska Fairbanks.
1999-2001: Research Assistant Professor, University of Alaska Fairbanks.
1995-1999: Research Associate, University of Alaska Fairbanks.
1993-1995: Postdoctoral Research Fellow, University of Alaska Fairbanks.
1992-1993: Postdoctoral Research Fellow, La Trobe University (Australia and Antarctica).
1990-1992: Computer programmer for marine science, Australian Antarctic Division.
1984-1988: Professional Officer (Physicist), Australian Antarctic Division, and Ph.D. student, University of Adelaide. Spent 33 months working as a physicist in Antarctica during this period.

SYNERGISTIC ACTIVITIES:

- Co-Convener of the NSF Passive Optics Workshop, Boulder, CO, April 2004.
- 2004 and 2008 onward: Panel member of NASA's "Sounding Rocket Working Group."
- Scientific reviewer for international journals and funding programs.
- Web-based auroral forecaster.

GRADUATE ADVISOR:

F. Jacka (Deceased)

GRADUATE ADVISEES:

Completed: M. Krynicki (Ph.D.), J. Holmes (M.Sc.)
In Progress: S. Cooper (Ph.D., Australia), C. Anderson (Ph.D., Australia),
C. Andersen (Ph.D., Alaska)
Total: Five Students

PUBLICATIONS:

- Greet, P., M. Conde, and F. Jacka, Daytime observation of the sodium layer with a Fabry-Perot spectrometer at Mawson, Antarctica, *Geophys. Res. Lett.*, *16*, 871-874, 1989.
- Conde, M., and F. Jacka, Analysis of day-time observations of the 630 nm thermospheric emission over Mawson, Antarctica, *ANARE Res. Notes*, *69*, 125-138, 1989.
- Conde, M., and H. Beggs (eds.), *ANARE Research Notes, 69: Australian upper atmospheric and space physics research in Antarctica, 1988*, vol. 69, Australian Antarctic Division, Kingston, Tasmania, 1989.
- Conde, M., and F. Jacka, Thermospheric wind and temperature measurements from Mawson, Antarctica, spanning 24 hours of local time, *ANARE Res. Notes*, *80*, 243-261, 1990.
- Conde, M., P. Greet, and F. Jacka, The Ring effect in the sodium D2 Fraunhofer line of day skylight over Mawson, Antarctica, *J. Geophys. Res.*, *97*, 11561-11565, 1992.
- Penrose, J. D., M. Conde, and T. J. Pauly, Acoustic detection of ice crystals in Antarctic waters, *J. Geophys. Res.*, *99*, 12573-12580, 1994.
- Conde, M., and P. L. Dyson, Thermospheric vertical winds above Mawson, Antarctica, *J. Atmos. Terr. Phys.*, *57*, 589-596, 1995.
- Conde, M., and P. L. Dyson, Thermospheric horizontal winds above Mawson, Antarctica, *Adv. Space Res.*, *16*, 41-52, 1995.
- Conde, M., and R. W. Smith, Mapping thermospheric winds in the auroral zone, *Geophys. Res. Lett.*, *22*, 3019-3022, 1995.
- Conde, M., and R. W. Smith, Phase compensation of a separation scanned, all-sky imaging Fabry-Perot spectrometer for auroral studies, *Appl. Opt.*, *36*, 5441-5450, 1997.
- Conde, M., and R. W. Smith, Spatial structure in the thermospheric horizontal wind above Poker Flat, Alaska, during solar minimum, *J. Geophys. Res.*, *103*, 9449-9472, 1998.
- Smith, R. W., G. Hernandez, R. G. Roble, P. L. Dyson, M. Conde, R. Crickmore, and M. Jarvis, Observation and Simulation of Winds and Temperatures in the Antarctic Thermosphere for August 2 - 10, 1992, *J. Geophys. Res.*, *103*, 9473-9480, 1998.
- Conde, M., and R. W. Smith, Simultaneous Observations of the Aurora and of Non-Uniform Thermospheric Winds, from Poker Flat, Alaska, *Proc. NIPR Symp. Upper Atmos. Phys.*, *12*, 30-38, 1998.
- Innis, J. L., P. A. Greet, D. J. Murphy, M. Conde, and P. L. Dyson, A large vertical wind in the thermosphere at the auroral oval/polar cap boundary seen simultaneously from Mawson and Davis, Antarctica, *J. Atmos. Sol-Terr. Phys.*, *61*:1047-1058, 1999.
- Greet, P. A., M. Conde, P. L. Dyson, J. L. Innis, A. M. Breed, and D. J. Murphy, Thermospheric wind field over Mawson and Davis, Antarctica; Simultaneous observations by two Fabry-Perot spectrometers of 630 nm emission, *J. Atmos. Sol-Terr. Phys.*, *61*:1025-1045, 1999.
- Rees, D., M. Conde, A. Steen, and U. Brandstrom, The First Daytime Ground-Based Optical Image of the Aurora, *Geophys. Res. Lett.*, *27*:313-316, 2000.
- Conde, M., Analysis of Fabry-Perot spectra of lidar backscatter echoes Morris, R.J., Wilkinson, P.J. (ed.) *ANARE Reports No. 146*. 91-114, 2001.
- Conde, Craven, Immel, Hoch, Stenbaek-Nielsen, Hallinan, Smith, Olson, Wei Sun, Frank, and Sigwarth, Assimilated observations of thermospheric winds, the aurora, and ionospheric currents over Alaska, *J. Geophys. Res.* *106*:10493-10508, 2001.
- Ishii, Conde, Smith, Kryriicki, Sagawa, and Watari,. Vertical wind observations with two Fabry-Perot interferometers at Poker Flat, Alaska, *J. Geophys. Res.* *106*:10537-10551, 2001.
- Conde, M., Deriving wavelength spectra from fringe images from a fixed-gap single-etalon Fabry-Perot spectrometer, *Appl. Opt.*. *41*: 2672-2678, 2002.
- Innis, J. L. and M. Conde, Thermospheric vertical wind activity maps derived from Dynamics Explorer-2 WATS observations, *Geophys. Res. Lett.*, *28*: 3847-3850, 2001.

- Innis, I. L. and M. Conde, High-latitude thermospheric vertical wind activity from Dynamics Explorer-2 WATS observations: Indications of a source region for polar cap gravity waves, *J. Geophys. Res.* 107, No. A8, 10.1029/2001JA009130, 2002.
- Innis and Conde, Characterization of acoustic-gravity waves in the upper thermosphere using Dynamics Explorer 2 Wind & Temperature Spectrometer (WATS) & Neutral Atmospheric Composition Spectrometer data, *J. Geophys. Res.* 107, A12, 10.1029/2002JA009370, 2002.
- Conde, M., Airglow Instrumentation, *The Encyclopaedia Of Atmospheric Science*, Eds. J Holton, J Pyle, J Curry. Academic Press Ltd. London, 2003, pp 1576-1583.
- Ishii M., M. Kubota, M. Conde, R. W. Smith, M. Krynicki, Vertical wind distribution in the polar thermosphere during Horizontal E Region Experiment (HEX) campaign, *J. Geophys. Res.*, 109, A12311, doi:10.1029/2004JA010657, 2004.
- Holmes J. M., M. Conde, C. Deehr, D. Lummerzheim, Morphology of evening sector aurorae in $\lambda 557.7$ -nm Doppler temperatures, *Geophys. Res. Lett.*, 32, L02103, 10.1029/2004GL021553, 2005.
- Oyama S., B. J. Watkins, S. Nozawa, S. Maeda, M. Conde, Vertical ion motion observed with incoherent scatter radars in the polar lower ionosphere, *J. Geophys. Res.*, 110, A04302, doi:10.1029/2004JA010705, 2005
- Cooper, S. L. and M. G. Conde, 2006. Origins of horizontal divergence in the auroral thermosphere: A modelling study, *Geophys. Res. Lett.* 33: doi:10.1029/2006GL027601.
- Hecht J.H., D.J. Strickland, and M.G. Conde, The Application of Ground-based Optical Techniques for Inferring Electron Energy Deposition and Composition Change during Auroral Precipitation Events, *In Press, J. Atmos. Sol. Terr. Phys.*, 2006.
- Wescott, E. M., H. Stenbaek-Nielsen, M. Conde, M. Larsen, and D. Lummerzheim, 2006, The HEX experiment: Determination of the neutral wind field from 120 to 185 km altitude near a stable pre-midnight auroral arc by triangulating the drift of rocket-deployed chemical trails, *J. Geophys. Res.*, 111, A09302, doi:10.1029/2005JA011002.
- Hecht, J. H., T. Mulligan, D. J. Strickland, A. J. Kochenash, Y. Murayama, Y.-M. Tanaka, D. S. Evans, M. G. Conde, E. F. Donovan, F. J. Rich, D. Morrison, Satellite and ground-based observations of auroral energy deposition and the effects on thermospheric composition during large geomagnetic storms: 1. Great geomagnetic storm of 20 November 2003, *J. Geophys. Res.*, 113, A01310, doi:10.1029/2007JA012365, 2008