

Dr Scott M. Collis

CONTACT INFORMATION

ARM Climate Research Facility
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EDUCATION

Australian Bureau of Meteorology, Melbourne, VIC Australia

Graduate Diploma in Meteorology.

- Completed November 2007

Australian National University, Canberra, ACT Australia

Doctor of Philosophy in Physical Sciences and Engineering.

- Doctorate conferred 2007
- Dissertation Topic: "The development of a directional gas injection system for the H-1NF heliac"

The University of Sydney, Sydney, NSW Australia

B.Sc. (Adv.) Hons Physics

- Graduated in 1999 with 1st class Honours
- Honours report title: "A Spectroscopic study of ion micro-channels in a prototype Inertial Electrostatic Confinement reactor"

PROFESSIONAL EXPERIENCE

Argonne National Laboratory, Chicago, IL USA

Radar Meteorologist

June, 2010 - Present

The ARM Climate Research Facility instrument translator responsible for bridging the gap between remote sensing measurements and the geophysical parameters required for the improvement of cloud and climate models. My work involves working with instrument experts and the modeling community to build a suite of retrieval algorithms to work with a global network of precipitation radars.

Centre for Australian Weather and Climate Research, Melbourne, VIC Australia

Postdoctoral Researcher

April, 2008 - Present

Developed a variational analysis system for the analysis of precipitation data. Primarily for the support of the Radiation Measurement Program of the United States of America Department of Energy. I have also been involved in the South East Queensland Cloud Seeding Research Program where I supported a long term field program as a radar meteorologist and operational aviation forecaster in support of research aircraft operations as well as being involved in post field program analysis.

National Meteorological and Oceanographic Centre, Australian Bureau of Meteorology, Melbourne, VIC Australia

Meteorologist

November, 2007 - April 2008

Worked as an operation Meteorologist preparing significant weather analyses and forecasts. Responsible for the issue of aviation warnings for icing and turbulence. Responsible for the initial stages of the implimentation of a gridded forecasting system for the preparation of high seas forecast.

Cochlear, Sydney, NSW Australia

Researcher

November, 1999 - February, 2000

Worked with the design department in the bionic ear manufacturer Cochlear. The exact details of my project are subject to a non disclosure agreement. The project involved the design and testing of a novel microphone.

PUBLICATIONS

J. Khachan, S. Collis Measurements of ion energy distributions by Doppler shift spectroscopy in an inertial-electrostatic confinement device. *Physics of Plasmas*, vol.8, no.4, April 2001, pp.1299-304.

S. M. Collis, J. Howard, G. B. Warr, C. A. Michael, J. H. Harris, B. D. Blackwell, and D. G. Pretty. Studies of resonantly produced plasmas in the H-1NF heliac using a far-infrared scanning interferometer. *Rev. Sci. Instrum.* 74, 1629 (2003)

J.H. Harris, M.G. Shats, B.D. Blackwell, W.M. Solomon, D.G. Pretty, S.M. Collis, J. Howard, H. Xia, C.A. Michael and H. Punzmann. Fluctuations and stability of plasmas in the H-1NF heliac. *Nucl. Fusion* 44 (2004) 279 286

S. M. Collis, J. Howard, B. D. Blackwell, P. Carlsson and M. Abellsson. A supersonic gas injection system for fuelling and probing fusion plasmas. *Plasma Sources Sci. Technol.* 15 (2006) 797-804.

M. Blacksell, J Wach, D Anderson, J Howard, S Collis, B Blackwell, D Andruczyk, B.W. Brian. Imaging photomultiplier array with integrated amplifiers and high-speed USB interface. *Review of Scientific Instruments* 79 (2008)

S. Collis, R. Dall, J. Howard, D. Andruczyk, B.W. James, Validation of collisional radiative modelling of emission line ratios for helium beam plasma diagnostic, *Journal of Quantitative Spectroscopy and Radiative Transfer*, vol. In Press, Accepted Manuscript, pp. -, 2009.x'

S. Collis., A. Protat, and K.-S. Chung, 2010: The Effect of Radial Velocity Gridding Artifacts on Variationally Retrieved Vertical Velocities. *Journal of Atmospheric and Oceanic Technology*, 27, 1239–1246.

S. A. Tessendorf,, R. T. Buintjes, C. Weeks, J. W. Wilson, C. A. Knight, R. D. Roberts, J. R. Peter, S. Collis, P. R. Buseck, E. Freney, M. Dixon, M. Pocerlich, K. Ikeda, D. Axisa, E. Nelson, P. May, H. Richter, S. Piketh, R. P. Burger, L. Wilson, S. T. Siems, M. Manton, R. C. Stone, A. Pepler, D. R. Collins, V. N. Bringi, M. Thurai, L. Turner, and D. McRae, 2011: The Queensland Cloud Seeding Research Program. *Bulletin of the American Meteorological Society*.

SELECT
CONFERENCE
PRESENTATIONS

S. Collis, A. Protat and P May. Radar based sensing of tropical convection. The 9th International Congress on Southern Hemesphere Meteorology. Melbourne, Australia Febuary 2009.

S. Collis, A. Protat P. May and K.-S. Chung. Updraft characteristics of convection during TWP-ICE and links to microphysical habits. Presented as both a poster and an invited plenary session talk. 19th ARM Science Team Meeting. Louisville, USA, May 2009.

S Collis, C. R. Williams, A. Protat, S. E. Giangrande, A. C. Varble, K. North, M. P. Jensen, N. Bharadwaj, and K. B. Widener, Multi-scale radar derived measurements of vertical velocities in convective systems as a product for cloud and climate modelers. Presented as a talk at the 35 American Meteorological Society conference on Radar Meteorology. Pittsburgh, PA, USA. September 2011.

S Collis; K North, M P Jensen, P Kollias, C R Williams, N Bharadwaj, A M Fridlind, K Widener, S Giangrande. Volumetric Geophysical Retrievals in Precipitating Cloud Systems. Presented as a poster at the 2011 American Geophysical Union Fall Meeting. San Francisco, CA, USA. December 2011.