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Professional Preparation:

Ph.D. in mathematics, Monash University, Australia, 2003
B.Sc. (Hons.) in mathematics, Monash University, Australia, 1997
B.Sc. in astrophysics and mathematics, Monash University, Australia, 1996

Appointments:

2008 to present Research scientist
 NorthWest Research Associates, Boulder, Colorado, USA

2006 to 2007 Postdoctoral research associate
 NorthWest Research Associates, Boulder, Colorado, USA

2005 to 2006 Canadian government laboratory visiting fellow
 Canadian Space Agency, Montréal, Canada

2003 to 2005 Postdoctoral research associate
 Département de Physique, Université de Montréal, Canada

Publications:

Felipe, T., Crouch, A. D., Birch, A. C. 2014, Evaluation of the Capability of Local Helioseismology to Discern between Monolithic and Spaghetti Sunspot Models, *Astrophysical Journal*, 788, 136.

Felipe, T., Crouch, A. D., Birch, A. C. 2013, Numerical simulations of multiple scattering of the f -mode by flux tubes, *Astrophysical Journal*, 775, 74.

Crouch, A. D. 2013, Resolving the azimuthal ambiguity in vector magnetogram data with the divergence-free condition: the effects of noise and limited spatial resolution, *Solar Phys.*, 282, 107–131.

Crouch, A. D. 2012, Least-squares fitting methods for estimating the winding rate in twisted magnetic flux tubes, *Solar Phys.*, 281, 669–695.

Felipe, T., Braun, D. C., Crouch, A. D., Birch, A. C. 2012, Scattering of the f -mode by small magnetic flux elements from observations and numerical simulations, *Astrophysical Journal*, 757, 148.

Thibault, K., Charbonneau, P., and Crouch, A. D. 2012, The build-up of a scale-free photospheric magnetic network, *Astrophysical Journal*, 757, 187.

Bolduc, C., Charbonneau, P., Dumoulin, V., Bourqui, M. S., Crouch, A. D. 2012, A fast model for the reconstruction of spectral solar irradiance in the near- and mid-ultraviolet, *Solar Physics*, 279, 383–409.

Leka, K. D., Barnes, G., Gary, G. A., Crouch, A. D., and Liu, Y. 2011, Response to “Comment on “Resolving the 180° ambiguity in solar vector magnetic field data: evaluating the effects of noise, spatial resolution, and method assumptions””, *Solar Phys.*, 276, 441–450.

Braun, D. C., Birch, A. C., Crouch, A. D., Rempel, M. 2011, The need for physics-based inversions of sunspot structure and flows, *Journal of Physics: Conference Series*, 271, 012010.

- Crouch, A. D., Barnes, G., and Leka, K. D. 2009, Resolving the azimuthal ambiguity in vector magnetogram data with the divergence-free condition: application to discrete data, *Solar Physics*, 260, 271–287.
- Leka, K. D., Barnes, G., Crouch, A. D., Metcalf, T. R., Gary, G. A., Jing, J., and Liu, Y. 2009, Resolving the 180° ambiguity in solar vector magnetic field data: evaluating the effects of noise, spatial resolution, and method assumptions, *Solar Phys.*, 260, 83–108.
- Leka, K. D., Barnes, G., and Crouch, A. 2009, An automated ambiguity-resolution code for Hinode/SP vector magnetic field data, *The Second Hinode Science Meeting: Beyond Discovery – Toward Understanding*, *PASP*, 415, 365.
- Charbonneau, P., Crouch, A. D., and Tapping, K. F. 2008, L'irradiance solaire et ses variations, *Physics in Canada*, 64, 201–206.
- Crouch, A. D., Charbonneau, P., Beaubien, G., and Paquin-Ricard, D. 2008, A model for the total solar irradiance based on active region decay, *Astrophysical Journal*, 677, 723–741.
- Crouch, A. D., and Barnes, G. 2008, Resolving the azimuthal ambiguity in vector magnetogram data with the divergence-free condition: theoretical examination, *Solar Physics*, 247, 25–37.
- Tapping, K. F., Boteler, D., Charbonneau, P., Crouch, A., Manson, A., and Paquette, H. 2007, Solar magnetic activity and total irradiance since the Maunder minimum, *Solar Physics*, 246, 309–326.
- Crouch, A. D., Charbonneau, P., and Thibault, K. 2007, Supergranulation as an emergent length scale, *Astrophysical Journal*, 662, 715–729.
- Crouch, A. D., Cally, P. S., Charbonneau, P., Braun, D. C., and Desjardins, M. 2005, Genetic magnetohelioseismology with Hankel analysis data, *Monthly Notices of the Royal Astronomical Society*, 363, 1188–1204.
- Crouch, A. D., and Cally, P. S. 2005, Mode conversion of solar p -modes in non-vertical magnetic fields II. Three-dimensional model, *Solar Physics*, 227, 1–26.
- Cally, P. S., Crouch, A. D., and Braun, D. C. 2003, Probing sunspot magnetic fields with p -mode absorption and phase shift data, *Monthly Notices of the Royal Astronomical Society*, 346, 381–389.
- Crouch, A. D., and Cally, P. S. 2003, Mode conversion of solar p -modes in non-vertical magnetic fields I. Two-dimensional model, *Solar Physics*, 214, 201–226.

Scientific/Technical/Management Performance:

Crouch currently serves as PI on a NASA grant to determine the internal and subsurface structure of magnetic flux concentrations using measurements from SDO/HMI. Crouch has previously served as PI on two NASA contracts relating to local helioseismology. The first used local helioseismology to determine the internal and subsurface structure of small-scale magnetic elements. The second involved the development of tools for local helioseismology (to determine the linear sensitivity of local helioseismic measurements to subsurface flows and changes in sound speed, and to develop inversions of helioseismic signatures). Crouch has been Co-I on more than ten other grants related to helioseismology and 180° ambiguity resolution.