

Huaqing Cai

**Advanced Study Program and Atmospheric Technology Division
National Center for Atmospheric Research
P.O. Box 3000
Boulder, CO 80307**

**Phone (303) 497-2010
Fax (303) 497-2044
Email caihq@ucar.edu**

Education:

Ph.D., Atmospheric Sciences, University of California, Los Angeles, 2001.

M.S. , Atmospheric Sciences, University of California, Los Angeles, 1997.

M.S., Microwave Remote Sensing, Chinese Academy of Meteorological Sciences, Beijing, China, 1990.

B.S., Atmospheric Physics, University of Science and Technology of China, Hefei, Anhui, China, 1987.

Professional Experience:

2002-present: ASP PostDoc Fellow, NCAR

2001-2002: Research Associate, Desert Research Institute (DRI).

1995-2001: Research Assistant, Department of Atmospheric Science, UCLA

1995-2001: Teaching Assistant, Department of Atmospheric Science, UCLA

1990-1995: Research Scientist, Chinese Academy of Meteorological Sciences.

Field Program Experience:

ELDORA data management, BAMEX, 2003.

Co-Team leader of DRI Radiometer, IHOP, 2002.

Radar Scientist, FASTEX, 1997.

Research Interests:

I have been working on various research projects involving topics such as microwave remote sensing, UHF wind profiler data processing and quality control. My most recent research includes Airborne Doppler radar data analysis and severe weather studies (tornadoes, supercells, fronts and drylines).

I am familiar with Unix, Fortran, C/C++, Perl, HTML, Java, Matlab and IDL and have been using them in my various research project extensively.

Awards:

Dissertation Year Fellowship, UCLA Graduate Division, 2000.

PostDoc Fellowship, National Center for Atmospheric Research Advanced Study Program, 2002.

Selected Peer-reviewed Publications:

Wakimoto, R. M., H. V. Murphey and **H. Cai**, 2003: The San Angelo Supercell of 31 May 1995: Visual Observations and Tornadogenesis. In press, *Mon. Wea. Rev.*

Cox, A. W., W. J. Steenburgh, D. E. Kingsmill, J. C. Shafer, B. A. Colle, O. Bousquet, B. F. Smull and **H. Cai**, 2003: Kinematic Structure of a Wasatch Mountain Winter Storm during IPEX IOP3. In review, *Mon. Wea. Rev.*

Wakimoto, R. M., and **H. Cai**, 2001: Airborne observations of a front in a deformation zone during FASTEX. , *Mon. Wea. Rev.*, **130**, 1898-1912.

Cai, H., and R. M. Wakimoto, 2001: Retrieved Pressure Field and Its Influence on the Propagation of a Supercell Thunderstorm. *Mon. Wea. Rev.*, **129**, 2695-2713

Gao, J. B., and **H. Cai**, 2000: On the Structures and Quantification of Recurrence Plots. *Physics Letters A*, **270**, 75-87.

Wakimoto, R. M., and **H. Cai**, 2000: Analysis of a non-tornadic supercell during VORTEX-95. *Mon. Wea. Rev.*, **128**, 565-592.

Wakimoto, R. M., C.-H. Liu, and **H. Cai**, 1998: The Garden City, Kansas, storm during VORTEX 95. Part I: Overview of the storm's life cycle and mesocyclogenesis. *Mon. Wea. Rev.*, **126**, 372-392.

Cai H. and CL Zhao, 1993: Water vapor measured by a dual-channel microwave radiometer during severe weather events. *Mesoscale Meteorology Research Paper Collection*, published by Chinese Academy of Meteorological Sciences, Beijing, China.

Zhao CL, **Cai HQ**, Song YD, Lin B, and Xu PY, 1991: Measurement of water vapor and cloud liquid by a dual-channel ground-based microwave radiometer. *ACTA METEOROLOGICA SINICA*, Vol. 5, No. 3, p299-306. (In English)

- Zhou XJ, Zhao CL, Ma DA and **Cai HQ**, 1991: Atmospheric profile and preliminary investigation on the monitoring of disastrous weather. *ACTA METEOROLOGICA SINICA*, Vol. 5, No. 3, p265- 273. (In English)
- Zhao CL, Xu PY, Lin B, Song YD, **Cai HQ** and Mu J, 1990: a new digital radiometer for measurement of water vapor and cloud liquid in the troposphere. *Chinese Science Bulletin*, Nov, 1990, v35(n21):1807- 1811. (In English)

Selected Conferences Publications:

- Cai, H.**,2003: Differentiating between tornadic and nontornadic mesocyclone using fractal geometry. Preprints, 31th Conference on Radar Meteorology. Seattle, WA., *Amer. Meteor. Soc.*, 563-565.
- Cai, H.** and W.-C. Lee, 2003: Observations of the finescale structure of 11 June dryline during IHOP 2002. Preprints, *31th Conference on Radar Meteorology*. Seattle, WA., *Amer. Meteor. Soc.*,828-831.
- Keeler, R. J.,**H. Cai** and W.-C. Lee, 2003: Airborne Doppler radar clutter and range sidelobe suppression. Preprints, *31th Conference on Radar Meteorology*. Seattle, WA., *Amer. Meteor. Soc.*, 730-731.
- Kingsmill, D. E., **H. Cai**, J. A. W. Cox and W. J. Steenburgh, 2002: Microphysical structure of orographic precipitation along the Wasatch Mountains during IPEX. Preprints, Tenth Conference on Mountain Meteorology, *Amer. Meteor. Soc.*, Park City, UT.
- Cai, H.**, and R. M. Wakimoto, 2001: Airborne Doppler radar observations of a shallow cold front. Preprints, 30th International Conf. on Radar Meteorology, *Amer. Meteor. Soc.*, Munich, Germany, 388-390.
- Cai, H.**, and R. M. Wakimoto, 2000: A Case Study of Supercell Propagation. Preprints, 20th Conf. on Severe Local Storms, *Amer. Meteor. Soc.*, Orlando, FL, 255-258.
- Cai, H.**, and R. M. Wakimoto, 1998: Comparison between the Garden City tornadic and Hays nonntornadic supercells during VORTEX95. Preprints, 19th Conf. on Severe Local Storms, *Amer. Meteor. Soc.*, Minneapolis, MN, 108-111.
- Cai, H.**, and R. M. Wakimoto, 1997: Analysis of a non-tornadic supercell during VORTEX-95. Preprints, 28th Conf. on Radar Meteorology, *Amer. Meteor. Soc.*, Austin, TX, 528-529.
- Zhao CL, **Cai HQ**, Song YD and Lin B, 1991: Applications of a ground-based water vapor radiometer in Mesoscale meteorology experiments, Preprint volume, Symposium on Lower Tropospheric Profiling: Needs and Technologies, Boulder, Colorado, p105-106, Sep 10-13, 1991. Sponsored by NOAA/NCAR, Boulder, Colorado.
- Zhao CL, Song YD, Lin B, and **Cai HQ**, 1989: Measurement of water vapor and cloud liquid by dual- frequency ground- based microwave radiometer. Proceedings, The URSI/IAU Symposium on Radio Astronomical Seeing, May15-18, 1989, Beijing, China, 110-117.