

January 2004

CURRICULUM VITAE

Robert J. Conzemius

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EDUCATION

- 2000-present:** Ph.D. Candidate, School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA. Anticipated thesis completion date: late spring 2004.
- 1990 M.S.** in Meteorology, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA. *Thesis:* "Stratospheric behavior during tropospheric persistent anomaly events." Advisors: Alan Plumb and Randall Dole.
- 1988 B.A.** in Chemistry, *Magna Cum Laude*, St. John's University, Collegeville, Minnesota, USA.

EMPLOYMENT HISTORY

- 2000-present:** Graduate Research Assistant, School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA.
- 1999-2000:** Instructor in Meteorology, Department of Earth and Atmospheric Sciences, St. Cloud State University, St. Cloud, Minnesota, USA.
- 1998-1999:** Air Quality and Environmental Specialist, Labno Environmental, Inc., St. Paul, Minnesota, USA.
- 1996-1998:** Broadcast Meteorologist, KEYC television, Mankato, MN, USA.
- 1993-1996:** Air Quality Scientist, Barr Engineering, Inc., Minneapolis, MN, USA.
- 1990-1993:** Air Quality Meteorologist, ENSR Consulting and Engineering, Fort Collins, Colorado, USA.

WRITTEN PUBLICATIONS

Refereed Journal Articles:

- Fedorovich, E., Conzemius, R., and D. Mironov, 2004: Convective entrainment into a shear-free, linearly stratified atmosphere: bulk models reevaluated through large eddy simulations. *J. Atmos. Sci.*, **61**, 281-295.

Conference Proceedings:

Fedorovich, E., and R. Conzemius, 2001: Large-eddy simulation of convective entrainment in linearly and discretely stratified fluids. *Direct and Large-Eddy Simulation IV*, B. J. Geurts et al., Eds., Kluwer, 435-442.

Fedorovich, E., and R. Conzemius, 2002: Evolution of turbulent convective entrainment in heterogeneously versus linearly stratified fluids. *Advances in Turbulence IX*, I. Castro et al., Eds., CIMNE Publication, Barcelona, Spain, 457-460.

Fedorovich, E., and R. Conzemius, 2002: Effects of initial temperature and velocity perturbations on the development of convection in the atmospheric boundary layer. *Proc. 15th AMS Symp. on Boundary Layers and Turbulence*, 15-19 July 2002, Wageningen, the Netherlands, 39-42.

Conzemius, R., and E. Fedorovich, 2001: Entrainment dynamics of shear-free convective boundary layers growing in linearly and discretely stratified fluids. *Proc. Third Intern. Symp. on Environmental Hydraulics*, 5-8 December 2001, Tempe, Arizona, USA, 6pp. (*ISEH2001 Abstracts*, 129).

Conzemius, R., and E. Fedorovich, 2002: Dynamics of convective entrainment in a heterogeneously stratified atmosphere with wind shear. *Proc. 15th AMS Symp. on Boundary Layers and Turbulence*, 15-19 July 2002, Wageningen, the Netherlands, 31-34.

Conzemius, R., and E. Fedorovich, 2003: Evolution of mean wind and turbulence fields in a quasi-baroclinic convective boundary layer with strong wind shears. *Proc. 11th Intern. Conf. on Wind Eng.*, 2-5 June 2003, Lubbock, Texas, USA, 2055-2062.

Conzemius, R., and E. Fedorovich, 2003: Wind Shear Enhancement of Convective Boundary Layer Growth, *Proc. 23rd General Assembly of the International Union of Geodesy and Geophysics*, A.389.

PRESENTATIONS GIVEN

Conference presentations:

July 2-5, 2002 Ninth European Turbulence Conference (ETC9), Southampton, U.K. Title: "Evolution of turbulent convective entrainment in heterogeneously versus linearly stratified fluids" (w. E. Fedorovich).

December 5-8, 2001: Third International Symposium on Environmental Hydraulics (ISEH2001), Tempe, Arizona, USA. Title: "Entrainment

dynamics of shear-free convective boundary layers growing in linearly and discretely stratified fluids” (w. E. Fedorovich).

July 15-19, 2002: 15th AMS Symposium on Boundary Layers and Turbulence (BLT15), Wageningen, the Netherlands. Title: “Dynamics of convective entrainment in a heterogeneously stratified atmosphere with wind shear” (w. E. Fedorovich).

June 2-5, 2003: 11th International Conference on Wind Engineering (ICWE11), Lubbock, Texas, USA. Title: “Evolution of mean wind and turbulence fields in a quasi-baroclinic convective boundary layer with strong wind shears” (w. E. Fedorovich).

June 30-July 11, 2003: 23rd General Assembly of the International Union of Geodesy and Geophysics (IUGG2003), Sapporo, Japan. Title: “Wind Shear Enhancement of Convective Boundary Layer Growth” (w. E. Fedorovich).

Seminars:

October 2001: School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA. Title: “Large Eddy Simulation of Convective Entrainment in Linearly and Discretely Stratified Fluids” (with E. Fedorovich).

March 2003: National Center for Atmospheric Research, Boulder, Colorado, USA. Title: “Wind Shear Enhancement of Convective Boundary Layer Entrainment” (with E. Fedorovich).

April 2003: School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA. Title: “Wind Shear Enhancement of Convective Boundary Layer Entrainment” (with E. Fedorovich).

SCIENTIFIC PROJECTS

Project "Dynamics of convective entrainment in heterogeneously stratified atmosphere with wind shears". Funding agency: National Science Foundation, USA. Grant ATM-0124068. Location: University of Oklahoma, USA. Function: assistant investigator. Duration: from January 2002 to December 2004. Budget: US\$ 270K.

FIELD EXPERIMENTS

2002, May-June. International H₂O Project (IHOP). Extensive field experiment to study boundary layer heterogeneity, convection initiation, and quantitative precipitation estimation in the central and southern plains of the U.S. Responsibilities: ground systems coordinator, nowcasting.

2001,2003 May-June. Radar Observations of Tornadoes and Thunderstorms Experiment (ROTATE). Responsibilities: scout vehicle navigator, driver, forecasting, nowcasting.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

1993-1996: Air and Waste Management Association (AWMA)

1989-present: American Meteorological Society (AMS). President of Twin Cities (Minnesota) Chapter from 1995-1997.

LANGUAGES

English: native language; **German:** basic skills.

SERVICE

Geosciences Technical Advisory Committee: Graduate Student Representative in Meteorology

Bel-Aire Addition Association (homeowner's association): Secretary/Treasurer

TEACHING

1999-2000: St. Cloud State University, St. Cloud, Minnesota, USA

Undergraduate courses taught:

Introduction to Meteorology (for majors), Fall 1999, Spring and Summer 2000;

Introduction to Forecasting, Fall 1999;

Introduction to Earth Sciences (for non-majors), Fall 1999;

Broadcast Meteorology, Spring 2000;

Micrometeorology, Spring 2000.

SCHOLARSHIPS AND AWARDS

Presidential International Travel Award Fellowship, Summer 2003