

Danijel Belušić

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EDUCATION:

Graduate Certificate in Academic Practice (GCAP), 2012

A Monash University graduate diploma aimed at developing teaching, research and leadership skills.

Ph.D. in Physics/Geophysics; October 2006

M.Sc. in Physics/Geophysics; October 2004

B.Sc. in Physics/Geophysics; July 2001

University of Zagreb, Zagreb, Croatia.

PROFESSIONAL EXPERIENCE:

Researcher - climate scientist; 2016 – present

SMHI, Norrköping, Sweden

Researcher - meteorologist; 2015 – 2016

Centre for Ecology and Hydrology, Wallingford, U.K.

University Lecturer; 2011 – 2015

School of Mathematical Sciences and School of Earth, Atmosphere and Environment,
Monash University, Melbourne, Australia

Docent (Assistant Professor); 2008 – 2011

Senior Research Assistant; 2006 – 2008

Research Assistant; 2001 – 2006

Department of Geophysics, Faculty of Science, University of Zagreb, Zagreb, Croatia.

Participation in the following projects:

- NERC: ‘Vegetation Effects on Rainfall in West Africa’ – Researcher
- NERC: ‘Interaction of Convective Organization and Monsoon Precipitation, Atmosphere, Surface and Sea’ – Researcher
- Australian Research Council DP: ‘The Southern Ocean boundary layer: winds, turbulence, sea spray and clouds’ – Chief Investigator
- Australian Research Council LIEF – Chief Investigator
- Monash University ECR Grants (three grants in 2012 and 2013) – Chief Investigator

- Croatian Science Foundation: 'Characteristics of Turbulence of Bora Wind (CATURBO)' – Collaborator
- Austrian Climate and Energy Fund: 'High resolution atmospheric modelling in complex terrain for future climate simulations (HIRMOD)' – External Expert
- FP7: 'SEE-GRID-SCI' – Scientific Coordinator for the Department of Geophysics
- FP6: 'EUFAR': 'Sub-Mesoscale Variability and Diffusion in Low Wind Speed Conditions (MESOVAR)' – Lead Scientist
- Croatian Ministry of Science, Education and Sports: 'Air Quality over Complex Topography' – Researcher
- The Research Council of Norway: 'High Resolution Environmental Modelling and Evaluation Programme for Croatia (EMEP4HR)' – Researcher
- Italian Ministry of Foreign Affairs: 'Adriatic Sea Integrated Coastal Areas and River Basin Management System Extended Project (ADRICOSM-EXT)' – Researcher
- Croatian Ministry of Science, Education and Sports: iProject 'Weather and Climate of the Croatian Coast'
- Croatian Ministry of Science, Education and Sports: 'Atmosphere-Adriatic System' – Researcher
- Croatian Ministry of Science, Education and Sports: 'Air-Sea Interaction' – Researcher

Fulbright postdoctoral research visit; 2010

College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis, Oregon, USA. Advisor: Larry Mahrt.

Four-month research visit; 2006/2007

College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis, Oregon, USA.

RECENT WORK:

- Developing regional climate models
- Understanding land–atmosphere interactions: effects of deforestation and irrigation on cloud and precipitation.
- Developing geophysical time series analysis techniques.
- Submesoscale meandering motions in the atmospheric boundary layer: origin, statistics and effects on dispersion. Emphasis on low wind speed conditions.
- Field experiments for measuring turbulence in the ABL, including flux towers, horizontal networks, and the development of an instrumented car for mobile turbulence measurements.
- Mesoscale, turbulence and air pollution modeling.
- ABL over the Southern Ocean.
- Dynamics of the local, topography modified, wind bora – experimental and theoretical study.

- Dynamics of atmospheric processes over complex terrain – e.g., gravity waves, convective processes, orographic influences on local winds.
- Atmospheric processes over the Adriatic Sea.

TEACHING QUALIFICATIONS:

Experience in teaching and supervision at Monash University and University of Zagreb:

1. Courses taught: 'Boundary-Layer Meteorology', 'Clouds, Weather and Forecasting', 'The Science of Climate', 'Engineering Mathematics', 'Introduction to geophysical fluid dynamics', 'Introduction to meteorology', 'Selected chapters in meteorology', 'Meteorological practicum', 'Dynamic meteorology 2, 3 & 4' (tutor), 'Synoptic meteorology' (tutor), 'Meteorological measurements' (tutor).
2. Co-creator of two new courses: 'Fundamentals of atmospheric modelling' and 'Selected chapters in meteorology'.
3. Supervision of several diploma, MSc and PhD students.

Initial Training for Lecturers in Higher Education

A program organized by the Association for the Development of Higher Education "Universitas" and the University of Rijeka in the academic year 2003/2004, Rijeka, Croatia.

HONORS AND AWARDS:

- Invited scientific committee theme leader at the WINABL workshop at NCAR, Boulder, Colorado, 2012. [Theme: Model parameterizations of wave-turbulence interaction in the stable boundary layer.]
- 2010 WMO Professor Mariolopoulos Trust Fund Award.
- Fulbright postdoctoral visiting research scholarship for 2010.
- Yearly Award to Young Scientists in 2007, awarded by the Society of University Teachers, Scholars and Other Scientists, Zagreb.
- Young Student Travel Award, awarded by the European Meteorological Society, 2004.
- Ministry of Science and Technology of the Republic of Croatia fellowship, 1996-2000.
- Faculty Council Award for the best student at the Department of Geophysics, Faculty of Science, University of Zagreb in the academic year 1998/1999.

EDUCATIONAL TRAVEL AND TRAINING:

- *Developing management skills*, NERC CEH, Wallingford, UK, 2015.
- *Future Research Leaders Program*, Monash University, Melbourne, Australia, 2012.

- ACCENT - CMAS Training Workshop on Air Quality Modeling, Sofia, Bulgaria, 30 July – 8 August 2006.
- Summer School on Mountain Meteorology: *Modification of Airflow by Mountains*, Trento, Italy, 26–30 August 2002.
- Spring Colloquium on the Physics of Weather and Climate: *Regional Weather Prediction Modelling and Predictability*, Miramare-Trieste, Italy, 8–19 April 2002.

ADDITIONAL REMARKS:

- Reviewer for granting bodies and international journals: *WMO, Croatian Science Foundation; Weather and Forecasting, Tellus A, Quarterly Journal of the Royal Meteorological Society, Pure and Applied Geophysics, Meteorology and Atmospheric Physics, Meteorologische Zeitschrift, Journal of Geophysical Research, Journal of Climate, Journal of the Atmospheric Sciences, Journal of Applied Meteorology and Climatology, International Journal of Climatology, Geophysical Research Letters, Geofizika, Bulletin of the American Meteorological Society, Boundary-Layer Meteorology, Atmospheric Research, Atmospheric Pollution Research, Atmospheric Environment and Annales Geophysicae.*