Fábio Pereira

Curriculum Vitae

Education

2014 – Present	**Giorgio Ruffolo Post-doctoral Research Fellow**, *Harvard University*, Cambridge, USA.
2010 – 2013	**PhD in Water Resources Engineering**, *Lund University*, Lund, Sweden.
2008 – 2010	**Master of Science in Water Resources Engineering**, *Universidade Federal do Rio Grande do Sul*, Porto Alegre, Brazil.
2003 – 2008	**Bachelor of Science in Civil Engineering**, *Universidade Federal de Alagoas*, Maceió, Brazil.

Post-doctoral Research

Title	*Sustainable development in Amazonia: Land use and the hydrologic cycle*
PI's	Professors Paul Moorcroft and John Briscoe
Description	The aim of this research is to o understand the implications of climate and land-use change for hydropower operations of the Tapajós River Basin in Brazil. By implementing a large scale distributed hydrological model in conjunction with a coupled biosphere-atmosphere model, the research explores the implications of climate and land use change for hydropower operations.
Acquired skills	Advanced parallel computing (MPI, OpenMP).

PhD Thesis

Title	*The interplay between atmosphere, hydrology and land use by environmental modelling*
Supervisors	Professor Cintia Bertacchi Uvo
Description	The aim of this thesis is to study a characteristic river basin where sugarcane plantations have been expanding significantly, and hopefully be able to quantify the impacts of biofuel plantations on the local hydrology and climate.

Acquired skills	Advanced programming in Linux and GRADS; Intermediate parallel computing (MPI, OpenMP); Intermediate handling of satellite images; Advanced technical and scientific writing.

Master Thesis

Title	*A two-dimensional hydrodynamic and scalar transport model using unstructured grids: Application to the River Guaíba (in Portuguese)*
Supervisors	Professor Walter Collischonn & David Marques
Description	This thesis presented the development of a two-dimensional model and its application to a river with complex geometry surrounded by one of the biggest cities in Brazil. The model could successfully reproduce flow patterns and transport of a tracer which gave support for many studies on water management in this river. Recently, it is been used by researchers and consultant companies over the country.
Acquired skills	Advanced programming in Fortran 90 and MATLAB; Advanced understanding of Geographic Information Systems; Advanced knowledge of database software, such as ArcGIS 9.x and Idrisi; Intermediate technical and scientific writing.

Bachelor Thesis

Title	*Methodologies for estimating water availability in basins without data. Case study: Niquim basin. (in Portuguese)*
Supervisors	Professor Vladimir Caramori & Roberaldo Souza
Description	This thesis investigated several methods of calculating water availability in a small basin without data. These estimates were compared to long-term data-collection campaigns. I found out that some methods are more suitable when estimating water availability for low discharge rates.
Acquired skills	Advanced MS Office applications (Word, Excel, PowerPoint etc.); Extensive experience in field work; Basic technical and scientific writing.

Experience

Teaching

2011 – 2012	**Assistant**, LUND UNIVERSITY, Lund.
	played a supportive role involving lectures, grading, review sessions, labs and field work on the following courses: *Hydromechanics, Hydrology & Aquatic Ecology and Environmental hydraulics.*
Supervisors	Professors Cintia Uvo & Magnus Larson
2006 – 2008	**Assistant**, UNIVERSIDADE FEDERAL DE ALAGOAS, Maceió.
	played a supportive role involving lectures, grading, review sessions, labs and field work on the following courses: *Hydraulics and Sanitation.*
Supervisors	Professors Celso Piatti & Roberaldo Souza

Supervising

2012 – 2013	**Co-supervisor**, *Co-supervision of the Master thesis entitled "The effects of sugarcane expansion on the hydrology of the Rio Grande Basin, Brazil" by Claes Blorglin and Sara Borglin*, LUND UNIVERSITY.

2011 – 2012 **Co-supervisor**, *Co-supervision of the Master thesis entitled "Offline coupling of a Brazilian regional climate model and a 2D hydrodynamic model" by Robert Willander*, Lund University.

2011 **Co-supervisor**, *Co-supervision of the Bachelor thesis entitled "Mapping mussels (Mytella Charruana) in CELMM by mathematical modelling" (in Portuguese) by Luiza Correia*, Universidade Federal de Alagoas.

Consulting

2011 **Consultant**, Hidroscience, Porto Alegre, Technical report: "A detailed study of the expansion of the Guaíba's harbour" (in Portuguese)..
Description: Evaluated water quality impacts of a public harbour expansion project in the river Guaíba.

2010 **Consultant**, Hydrocom, Porto Alegre, Technical report: "Biological and water quality study of the Ponta Marina da Figueira's artificial canals" (in Portuguese)..
Description: Evaluated the biological feasibility of artificial canals in a private condominium.

2009 **Consultant**, Hidroscience, Porto Alegre, Technical report: "Ecological effects of thermal discharges from a steel mill in the river Tocantins." (in Portuguese)..
Description: Identified potential ecological impacts of thermal discharges into the river Tocantins.

Awards

2013 Post-doctoral fellowship award in the Sustainability Science Program, Harvard Kennedy School

2013 Post-doctoral fellowship award in the Marine Strategy Framework Directive, French Research Institute for Exploitation of the Sea (Ifremer)

2011 PhD grant from Craaford Foundation (10/2011 to 12/2013)

2011 Extension of Erasmus Mundus Visiting Scholarship - European Doctoral Program in Higher Education, European Union.

2011 Erasmus Mundus Visiting Scholarship - European Doctoral Program in Higher Education, European Union.

Computer skills

Basic	Python, GRASS GIS
Intermediate	LATEX, OpenOffice, GrADS, C-shell
Advanced	Fortran 90/95, MATLAB, ArcGIS, Idrisi, Linux, Microsoft Windows, Fortran compilers for Microsoft Windows

Editorial duties

Referee / Reviewer	Environmental Engineering Science, Irrigation & Drainage System Engineering

Communication Skills

2012 Oral Presentation at the XXVII Nordic Hydrological Conference in Oulu, FI

2012   Oral Presentation at the MERGE Annual Meeting in Höör, SE

2011   Talk at Seminar Series at the Department of Water Resources Engineering in Lund, SE

2011   Poster at the 3rd International Multidisciplinary Conference on Hydrology and Ecology in Vienna, AU

2011   Oral Presentation at the MERGE Annual Meeting in Alvesta, SE

2011   Poster at the XIX Simpósio Brasileiro de Recursos Hídricos in Maceió, BR (in Portuguese)

2010   Oral Presentation at the XII Congresso Brasileiro de Limnologia in Gramado, BR (in Portuguese)

2007   Oral Presentation at the XXX Congresso Nacional de Matemática Aplicada e Computacional in Florianópolis, BR (in Portuguese)

2007   Oral Presentation at the VIII Congreso Iberoamericano de Ingeniería Mecánica in Cusco, PE (in Portuguese)

2007   Oral Presentation at the XVII Simpósio Brasileiro de Recursos Hídricos in São Paulo, BR (in Portuguese)

2005   Poster Presentation at the XVI Simpósio Brasileiro de Recursos Hídricos in João Pessoa, BR (in Portuguese)

Scientific commitments

Assignments

2013   M.Sc. board member of Julien Jaunâtre, Lund University, title "Numerical simulation of three dimensional flow in storage tanks"

2013   M.Sc. board member of Claes and Sara Borglin, Lund University, title "The effects of sugarcane expansion on the hydrology of the Rio Grande Basin, Brazil"

2012   M.Sc. board member of Robert Willander, Lund University, title "Offline coupling of a Brazilian regional climate model and a 2D hydrodynamic model"

2011   B.Sc. board member of Luiza Correia, Universidade Federal de Alagoas, title "Mapping mussels (Mytella Charruana) in CELMM by mathematical modelling" (in Portuguese)

Invited talks

2013   "Department of Water Resources Engineering: Opportunities and advances in research", Universidade Federal de Alagoas, Maceió, Brazil

Publications

Scientific journals (Accepted)

Pereira, F.F., Moraes, M.A.E., Uvo, C.B. (2014) *"Implementation of a two-way coupled atmospheric-hydrological system for environmental modeling at regional scale"*, Hydrology Research, v. 45, p. 504-513

Pereira, F.F., Fragoso Jr, Uvo, C.B., Collishonn, W., Motta Marques, D.M.L. (2013) *"Assessment of Numerical Schemes for Solving Advection-Diffusion Equation on Unstructured Grids: Case Study of River Guaíba, Brazil"*, Nonlinear Processes in Geophysics, v. 20, p. 1113-1125

Borglin, C., Borglin, S., **Pereira, F.F.**, Tursunov, M., Uvo, C.B. (2013) *"Effects of sugarcane expansion on runoff and evapotranspiration in the Rio Grande basin, Brazil"*, Journal of Water Management and Research, v. 69, p. 141-148

Pereira, F.F., Fragoso Jr, C.R., Uvo, C.B., Motta Marques, D.M.L. (2013) *"Pairing multivariate data analysis and ecological modeling in the lake Engelsholm, Denmark"*, Journal of Water Management and Research, v. 69, p. 15-19.

Pereira, F.F., Tursunov, M., Uvo, C.B. (2013) *"Quantifying the radip sugarcane expansion for ethanol production in the Rio Grande basin, Brazil"*, Journal of Water Management and Research, v. 69, p. 83-86

Pereira, F.F., Fragoso Jr, Collishonn, W., Motta Marques, D.M.L. (2013) *"Simulation of scalar transport using unstructured grids"* (in Portuguese), Revista Brasileira de Recursos Hídricos, v. 18, p. 7-18

Scientific journals (Reviewed)

Pereira, F.F., Tursunov, M., Uvo, C.B. *"Towards the response of surface runoff to sugarcane expansion in the Rio Grande Basin, Brazil"*, Hydrology and Earth System Sciences

Scientific journals (Under review)

Pereira, F.F., Uvo, C.B. *"Assessment of the role of a process-based representation of land surface hydrological processes to the atmosphere"*, Journal of Hydrology

Scientific journals (In preparation)

Pereira, F.F., Uvo, C.B. *"Conceptual evaluation of the interplay between land use changes, hydrology and atmosphere by a hybrid atmospheric-hydrological coupled model"*

Scientific conference abstracts

Pereira, F.F., Uvo, C.B. *"Assessment of a rapid sugarcane expansion upon the water balance of the Rio Grande basin, BR"*, Proceedings of IAHS - IAPSO - IASPEI Joint Assembly. Gothenburg, 2013.

Pereira, F.F., Moraes, M.A.E., Uvo, C.B. *"A two-way coupling between a hydrological and an atmospheric model"*, Proceedings of the XXVII Nordic Hydrology Conference. Oulu: Nordic Association for Hydrology (NHF), 2012. v1. p.139-139.

Souza, R.R., **Pereira, F.F.**, Motta Marques, D.M.L., Hanson, L.-A., Uvo, C.B. *"Consequences of Warmer Future on Metabolism of a Very Shallow Boreal Lake"*, In: Workshop on Lake Ecosystem Modelling, 2010, Silkeborg. Book of abstracts. Silkeborg: NERI, 2010. v1. p.12-12.

Pereira, F.F., Souza, R.R., Motta Marques, D.M.L., Fragoso Jr, C.R., Uvo, C.B. *"Development of a two-dimensional unstructured hydrodynamic model for subtropical aquatic ecosystems"*, In: Workshop on Lake Ecosystem Modelling, 2010, Silkeborg. Book of abstracts. Silkeborg: NERI, 2010. v1. p.12-12.

Languages

Portuguese	**Mother tongue**	
English and Spanish	**Advanced**	*Conversationally fluent*
Swedish	**Basic**	*Basic words and phrases only*