

May, 2009

CURRICULUM VITAE

Albert Ferrer Biosca

Department of Applied Mathematics I
Technological University of Catalonia
Av. Dr. Gregorio Marañón, 44-50
08028-Barcelona
Spain
Tel: +34-93-401 17 61
Fax: +34-93-401 77 00
email: alberto.ferrer@upc.edu

DATE AND PLACE OF BIRTH: December 24, 1952; Barcelona, Catalonia (currently in Spain).

EDUCATION:

2004 (January)	Mathematics	Ph.D. (Cum Laude)	Technical University of Catalonia
1978	Mathematics	MSc	University of Barcelona

ACADEMIC APPOINTMENTS:

1993–Today	Associate Professor , Department of Applied Mathematics I, Technological University of Catalonia (UPC)
1989–1993	Assistant Teaching , Department of Applied Mathematics I, Technological University of Catalonia (UPC)
1983–1993	Associate Teaching , Department of Mathematics, Public High School (Catalonia Government)
1981–1983	Associate Teaching , Department of Mathematics, Public High School (Spanish Government)
1978–1981	Assistant Teaching , Department of Geometry and Topology, University of Barcelona (UB)

PROFESSIONAL SOCIETIES:

Working Group on Generalized Convexity (WGGC)
Catalan Mathematical Society

COURSES:

- 1995 *Introducció a la supercomputació sota entorn CRAY.* Centre de computació de Catalunya (CESCA).
- 1995 *Optimització de programes FORTRAN en supercomputadors CRAY.* Centre de computació de Catalunya (CESCA).
- 1987-1988 *Master in Applied informatics.* Instituto de Estudios de Microordenadores (IEM), Barcelona, Spain.

MAJOR RESEARCH INTERESTS:

Abstract Convex Analysis
Nonconvex Analysis
Global Optimization
Optimization Theory
Structural Reliability

TEACHING EXPERIENCE:**Technological University of Catalonia (UPC)**

Dept. of Applied Mathematics I. Technical University School of Barcelona

1998–2007 Lecturer coordinator. Undergraduate courses of

*Fundamentals Programming (2002-2007)**Numerical Methods (2001-2007)**Applied Informatics (1998-2002)**Applied Statistics (1997-1998)*

1989–2007 Lecturer. Undergraduate courses of

*Fundamentals Programming (2002-2007)**Numerical Methods (2000-2007)**Applied Informatics (1992-2002)**Mathematics (1996-1999)**Linear Algebra (1993-1997)**Applied Statistics (1992-1998)**Differential Calculus (1992-1993)*1998–2000 **Educational Sciences Institute of the UPC (ICE)**

Lecturer

*Mathematics in Education for high school teachers***Public High School**

Department of Education of the Catalan Government

1983–1993 Lecturer

Courses of Mathematics and Statistics

Department of Education of the Spanish Government

1981–1983 Lecturer

*Courses of Mathematics and Statistics***University of Barcelona (UB)**

Department of Geometry and Topology. Faculty of Mathematics.

1978–1981 Lecturer. Undergraduate courses of

*Linear Algebra (1978-1981)**Projective Geometry (1978-1979)**General Topology (1979-1981)*

RESEARCH GRANTS:

- 2009-2011 *Modelos del analisis convexo, optimizacin moderada y aplicaciones*
 MCYT, MTM 2008-06695-C03-03/MTM
 Granted by the Spanish Ministry of Science and Technology. Researcher.
- 2009-2011 *Short and Medium-Term Multimarket Optimal Electricity Generation Planning with Risk and Environmental Constraints.*
 MCYT, DPI 2008-02153.
 Granted by the Spanish Ministry of Science and Technology. Researcher.
- 2006-2009 *Short and long term electricity generation planning in a liberalized market including bilateral contracts.*
 MCYT, DPI 2005-09117-C02-01. (71.000 EUROS)
 Granted by the Spanish Ministry of Science and Technology. Researcher.
- 2003-2005 *Short and long term coordination of hydrothermal electricity generation in a competitive market.*
 MCYT, DPI 2002-03330. (68.000 EUROS)
 Granted by the Spanish Ministry of Science and Technology. Researcher.
- 2000-2002 *Optimal planning of large-scale hydrothermal energy production in competitive surroundings.*
 CICYT, TAP1999-1075-C02-01. (12.900.000 pts)
 Granted by the Spanish council for research and technology. Researcher.
- 1996-1999 *Short-term large-scale planning of hydrothermal energy production.*
 CICYT, TAP96-1044-J0293. (9.480.000 pts)
 Granted by the Spanish council for research and technology. Researcher.

BOOKS:

- 2006 *Fundamentals of applied statistics (graduate course).* Ed. Romargraf, S.A., Barcelona, Spain, pp.350. (with several authors.)
- 2005 *Basic course of mathematics: Linear algebra and calculus (graduate course).* Ed. Romargraf, S.A., Barcelona, Spain, pp.350. (with several authors.)
- 2004 *Introduction to numerical methods (graduate course).* EUPB-UPC, Barcelona, Spain, pp.78. (with several authors.)
- 2002 *Mathematics for technical architecture curricula. Introductory course (graduate course).* EUPB-UPC, Barcelona, Spain, pp.203. (with several authors.)
- 2000 *Computer practices book on MINITAB.* EUPB-UPC, Barcelona, Spain, pp.32. (with several authors.)
- 1999 *Computer practices book on MAPLE V, vol I and II.* EUPB-UPC, Barcelona, Spain, pp.176. (with several authors.)
- 1998 *Mathematics: Computer practices book.* EUPB-UPC, Barcelona, Spain, pp 73. (with several authors.)

REFEREED PAPERS:

- 2009 *Bounded lower subdifferentiability optimization techniques. Applications.* Submitted to Journal of Global Optimization. Springer.
- 2009 *Improving the efficiency of dc global optimization methods by improving the dc representation of the objective function.* Journal of Global Optimization. Springer, DOI 10.1007/S10898-088-9343-5.
- 2009 *Three-phase full-wave rectifier study with experimental measurements.* Electric Power Systems Research. ELSEVIER, SCIENCE SA, vol 79, pp.521-530.
- 2008 *Characterization of non-linear load behavior.* Electric Power Systems Research. ELSEVIER, SCIENCE SA, pp.1773-1783.
- 2008 *Deterministic and Stochastic Study of the Single-Phase Non-Linear Load Behavior.* Power and Energy Systems. ACTA Press, pp.44-49.
- 2008 *A simulation-based algorithm to predict time-dependent structural reliability.* Advances in simulation for production and logistics applications. Fraunhofer IRB Verlag, pp.555-564.
- 2005 *Applying global optimization to a problem in short-term hydrothermal scheduling.* Nonconvex Optimization and Applications, Springer, vol. 77, pp.263-285.
- 2004 *Applicability of deterministic global optimization to the short-term hydrothermal coordination problem.* Ph.D. Thesis, Technological University of Catalonia (UPC), pp.157.
- 2002 *Representation of a polynomial function as a difference of convex polynomials, with an application.* Lectures Notes in Econom. And Math. Systems, vol. 502, pp.189-207.

CONFERENCES CONTRIBUTIONS:

- 2009 *Discharge Lamp Harmonic Interaction Study by Monte Carlo Simulation and Experimental Measurements.* (with several authors.)
IEEE Second International Conference on Power Engineering, Energy and Electrical Drives (POWERENG'2009), Lisbon, Portugal.
- 2009 *Deterministic and Stochastic Study of the Three-Phase Non-linear Load Behavior.* (with several authors.)
IEEE Second International Conference on Power Engineering, Energy and Electrical Drives (POWERENG'2009), Lisbon, Portugal.
- 2008 *Deterministic and stochastic study of the single-phase non-linear load behaviour.* (with several authors.)
Eighth IASTED international conference. Power and energy systems. Corfu, Greece.

CONFERENCES CONTRIBUTIONS:

- 2008 *A simulation-based algorithm to predict time-dependent structural reliability.* (with several authors.)
13th ASIM Conference on Simulation in Production and Logistics. Berlin, Germany.
- 2007 *Joint solution to the long-term power generation planning and maintenance scheduling.* (with several authors.)
23rd IFIP TC 7 Conference on system modelling and optimization, Cracow, Poland.
- 2007 *AcTeX, a telematic tool for self-learning.* (with several authors.)
Jornada d'innovació docent a la UPC, Barcelona, Spain
- 2006 *Bounded lower subdifferentiability optimization techniques. Applications.* (with G. Beliakov).
21st European Conference on Operational Research, EURO XXI, Reykjavik, Iceland.
- 2006 *Teaching applied statistics at UPC: integrating lectures, statistical software and e-learning.* (with several authors.)
International Congress of Mathematicians 2006 (ICM 2006), Madrid, Spain.
- 2004 *Improving a d.c. representation of a polynomial.*
The Sixth International Conference on Optimization: Techniques and Applications (ICOTA6 2004). University of Ballarat, Victoria, Australia.
- 2004 *A telematic tool for self-learning.* (with several authors.)
3r Congreso Internacional de Docencia Universitaria e Innovacin, Universitat de Girona, Girona, Spain
- 2002 *Learning via Integrated Projects.* (with C. Serrat.)
I Jornada de reflexió sobre la docència i la recerca a la Universitat. El cas de l'EUPB, Universitat Politècnica de Catalunya, Barcelona, Spain.
- 2002 *Applying global optimization to a problem in short-term hydrothermal scheduling,* 7th International Symposium on Generalized Convexity and Generalized Monotonicity, Hanoi, Vietnam.
- 1999 *Decomposition of a polynomial function as a difference of convex polynomials, with an application,* 6th International Symposium of Generalized Convexity/Monotonicity Samos, Karlovassi, Greece.
- 1998 *A Global optimization neighborhood for d.c. functions.* (with L. Montero.)
XXIV National Meeting of Statistics and Operating Research, Almeria, Spain
- 1995 *Dynamic learning via symbolic calculators* (with C. Serrat)
TEMU-95. Technology in Mathematics Teaching, Barcelona, Spain

WORKSHOPS ATTENDANCES:

- 2006 *Higher Education European Space: A model based on learning. What is different?*
Institute of Education Sciences of the Technological University of Catalonia, Barcelona, Spain.
- 2005 *Topics on Higher Education European Space in Mathematics .*
Departments of Mathematics of the Technological University of Catalonia, Barcelona, Spain.
- 2002 *Entorn de Supercomputació.* CESCO.
Cray Research, S.A.E., Barcelona, Spain.
- 2000 *Advances in Convex Analysis and Global Optimization, Pythagorion, Samos, Greece.*
- 1999 *Summer school on generalized convexity/monotonicity.*
Dpt. of Mathematics, University of the Aegean, Karlovasi, Samos, Greece.
- 1995 *Introduction to Fortran-90.* CESCO.
Cray Research, S.A.E., Barcelona, Spain.
- 1995 *Introduction to Supercomputation.* CESCO.
Cray Research, S.A.E., Barcelona, Spain.
- 1995 *Fortran Code Optimization on CRAY Supercomputers.* CESCO.
Cray Research, S.A.E., Barcelona, Spain.
- 1992 *Curs de Formació Bàsica per a la Reforma. Educació Secundària Obligatoria.*
Departament d'Ensenyament. Generalitat de Catalunya.
- 1984 *Noves tendències en l'educació matemàtica.*
Consell Inter Universitari de Catalunya. Universidad Internacional Mendez Pelayo, Spain.
- 1998 *XXIV Congreso Nacional de Estadística e Investigación Operativa, Almería, Spain*
- 1995 *Jornadas sobre Nuevas Tecnologías en la Enseñanza de las Matemáticas en la Universidad (TEMU95).*
Dept. Matemática Aplicada II. Universitat Politècnica de Catalunya, Spain.
- 1994 *XXI Congreso Nacional de Estadística e Investigación Operativa, Calella, Spain*
- 1993 *TMT'93 Technology in Mathematics Teaching Conference 1993.*
University of Birmingham, Birmingham, UK

WORKSHOPS ATTENDANCES:

- 1992 *Applied Mathematics in Building Teaching*.
Dpts. of Applied Mathematics of Universities of Sevilla and Granada, Spain.

SOFTWARE:

- 2006 aCTeX (ver 2.0). A telematic tool for self-learning. Its putting in functioning has been granted by the Institute of Education Sciences of the Technological University of Catalonia, Barcelona, Spain. (with several authors.)
- 2005 FLATLAND (ver 2.0). A program to solve instances . . . , IEMA, UPC, Barcelona, Spain.
- 2004 DCGO (ver 2.5). A program to solve instances with a difference convex objective function and convex constraints. There exist Linux and Windows versions. Technological University of Catalonia, Barcelona, Spain.

OTHERS:**Academic Visits:**

- Center for Informatics and Applied Optimization (CIAO).
Ballarat University, Melbourne, Australia (from 01/11/2004 to 15/12/2004).
- School of Information Technology, Faculty of Science and Technology.
Deakin University, Melbourne, Australia (from 01/02/2009 to 06/03/2005).

Referee of the journals:

- European Journal of Operational Research (EJOR).
- IEEE Transactions on Fuzzy Systems.

Conference and seminars Chairman:

- LEA Workshop on Optimization Games and Economic Applications,
Center for the Study of Organizations and Decisions in Economics (CODE),
Universitat Autònoma de Barcelona (UAB).