

Curriculum vitae

Sonia Fernández-Méndez

Personal Data

Citizenship: spanish

e-mail: sonia.fernandez@upc.edu

Address: Jordi Girona 1-3, Universitat Politècnica de Catalunya,
Campus nord, C2-207, Barcelona 08034, Spain

Personal web page: <http://www-lacan.upc.edu/fernandez>

ResearcherID web page: <http://www.researcherid.com/rid/G-8238-2011>

Current position: **Associate Professor** at Applied Mathematics 3, Universitat Politècnica de Catalunya

Date of birth: March 3, 1974

Tel: +34 934 011 625

Education

- Ph.D. in Applied Mathematics at Universitat Politècnica de Catalunya, November 2001.
- Postgraduate studies on financial products, at Universitat Politècnica de Catalunya, June 1999.
- Degree in Mathematics at Universitat Politècnica de Catalunya, June 1996.

Research interests

Research focused in Computational Mechanics, with special interest in Computational Fluid Mechanics (CFD) including wave problems, and in Advanced Discretization Techniques: high-order finite element computations, Discontinuous Galerkin methods, eXtended finite elements, meshless methods, NURBS-enhanced finite element method.

Awards

- *Jacques Louis Lions Award 2010 for Young Scientists in the field of Computational Mathematics*, by European Community on Computational Methods in Applied Sciences (ECCOMAS), June 2010
- *Juan Carlos Simó award 2009 for young scientist in the field of Computational Mechanics*, by Sociedad Española de Métodos Numéricos en Ingeniería (SEMNI), June 2009
- Annual special doctorate award 2001-2002 by Universitat Politècnica de Catalunya.

Papers in indexed journals

Journal	# papers	Impact Factor 2010
Archives of Computational Methods in Engineering	1	2.760
Computer Methods in Applied Mechanics and Engineering	2	2.085
International Journal for Numerical Methods in Engineering	6	2.085
Computers & Structures	1	1.722
Numerische Mathematik	1	1.388
Mathematical Modeling and Numerical Analysis	1	1.202
International Journal for Numerical Methods in Fluids	4	1.060
Finite Elements in Analysis and Design	1	1.030
Revista internacional de métodos numéricos para cálculo y diseño en ingeniería	1	0.150

1. A. Huerta and S. Fernández-Méndez, "Enrichment and coupling of the finite element and meshless methods", *International Journal for Numerical Methods in Engineering*, 48, 1615-1636 (2000)
- ...
9. R. Sevilla, S. Fernández-Méndez and A. Huerta, "NURBS-Enhanced Finite Element Method (NEFEM)", *International Journal for Numerical Methods in Engineering*, 76, 56-83 (2008)
10. A. Montlaur, S. Fernández-Méndez and A. Huerta, "Discontinuous Galerkin methods for the Stokes equation using divergence-free approximation", *International Journal for Numerical Methods in Fluids*, 57, 1071-1092 (2008)
11. R. Sevilla, S. Fernández-Méndez and A. Huerta, "NURBS-Enhanced Finite Element Method for Euler equations", *International Journal for Numerical Methods in Fluids*, 57, 1051-1069 (2008)
12. A. Montlaur, S. Fernández-Méndez, J. Peraire and A. Huerta, "Discontinuous Galerkin methods for the Navier-Stokes equations using solenoidal approximations", *International Journal for Numerical Methods in Fluids*, 64, 549-564 (2010)
13. A. Montlaur, S. Fernández-Méndez and A. Huerta, "High-order implicit Runge-Kutta methods for unsteady incompressible flows", *Revista internacional de métodos numéricos para cálculo y diseño en ingeniería*, 27, 77-91 (2011)
14. R. Sevilla, S. Fernández-Méndez and A. Huerta, "Comparison of high-order curved finite elements", *International Journal for Numerical Methods in Engineering*, 87, 719-734 (2011)
15. R. Sevilla, S. Fernández-Méndez, "Numerical integration over 2D NURBS-shaped domains with applications to NURBS-enhanced FEM", *Finite Elements in Analysis and Design*, 47, 1209-1220 (2011)
16. R. Sevilla, S. Fernández-Méndez and A. Huerta, "3D NURBS-enhanced finite element method (NEFEM)", *International Journal for Numerical Methods in Engineering*, 88, 103-125 (2011)
17. R. Sevilla, S. Fernández-Méndez and A. Huerta, "NEFEM. A seamless bridge between CAD and FEM", *Archives of Computational Methods in Engineering*, 18, 441-484 (2011)
18. A. Montlaur, S. Fernández-Méndez and A. Huerta, "High-order implicit time integration for unsteady incompressible flows", to appear in *International Journal for Numerical Methods in Fluids*

PhD advising

- Rubén Sevilla, "NURBS-Enhanced Finite Element Method (NEFEM)", UPC, June 2009. Advisors: S. Fernández-Méndez and A. Huerta.
- Adeline de Montlaur, "High-order Discontinuous Galerkin methods for incompressible flows", UPC, September 2009. Advisors: S. Fernández-Méndez and A. Huerta.

Other relevant information

- Currently **associate dean** (academic secretary) **of the Faculty of Mathematics** at UPC.
- Participation in 39 conferences: 20 international conferences and 19 national conferences, 2 semiplenary talks.
- Participation in 15 research projects with public funding.
- Referee for the indexed journals *International Journal for Numerical Methods in Engineering* and *Computer Methods in Applied Mechanics and Engineering*.
- Supervision of 8 master's thesis.
- In charge of the computer facilities of the MA3 department since September 2003.