

# Antonio Huerta

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## **Current position**

Dean of the Escola Tècnica Superior d'Enginyers de Camins, Canals i Ports de Barcelona  
Full professor of Applied Mathematics, Universitat Politècnica de Catalunya (UPC)

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## **Education**

Civil Engineering, Escola Tècnica Superior d'Enginyers de Camins, Canals i Ports de Barcelona (1983)  
Ph. D. Northwestern University (USA) (1987)

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## **Research interests**

Computational methods in applied sciences and engineering.  
Finite elements, nonlinear computational mechanics.  
Incompressible flows with boundary motion, convection-diffusion.  
Error estimation and adaptivity

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## **Career**

Chairman, Department of Applied Mathematics III, UPC (May 1998 - January 2004)  
Full professor of Applied Mathematics, Universitat Politècnica de Catalunya, since 1993  
Visiting Professor, Institut Universitaire de France, 2003  
Visiting Professor, École Centrale de Nantes, 2002, 2004-06  
Visiting Scientist, Ispra, European Communities Commission, 1990  
Assistant Professor, Universitat Politècnica de Catalunya, 1987-93  
Research Fellow, Northwestern University (USA), 1986-87  
Research Assistant, Northwestern University (USA), 1984-86  
CIRIT Fellowship, Northwestern University (USA), 1983-84

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## **Honors and awards**

Fellow of the International Association of Computational Mechanics, 2002  
Director of the high-quality and stable research group on "Numerical Methods in Applied Sciences and Engineering", Generalitat de Catalunya, 1999 – 2001, 2002 – 2004 and 2005 – 2007.  
Thomas A. Jaeger Prize, Int. Association for Structural Mechanics in Reactor Technology, 1989  
Royal E. Cabell Fellowship, Northwestern University, USA, 1986

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## **Professional activities**

### *Associate Editor*

European Journal of Computational Mechanics, since 2006

### *Editorial boards*

International Journal for Numerical Methods in Fluids, John Wiley & Sons, since 2005  
International Journal for Numerical Methods in Engineering, John Wiley & Sons, since 2001  
International Journal for Numerical and Analytical Methods in Geomechanics, John Wiley & S., since 2001  
Mechanics of Cohesive-frictional Materials, John Wiley & Sons, 1995 - 2000  
Revista de Obras Públicas, Colegio de Ingenieros de Caminos, Canales y Puertos, since 1997  
Journal of Engineering Mathematics, Kluwer, since 1996 (Board of associated referees)  
Revista Internacional de Métodos Numéricos en Ingeniería, Universitat Politècnica de Catalunya, since 1993

### *Community services*

Scientific Council, Centre de Recerca Matemàtica (CRM) since 2002  
Executive Council, Centro Internacional de Métodos Numéricos en Ingeniería (CIMNE) since 2000  
Executive Committee, Sociedad Española de Métodos Numéricos en Ingeniería (SEMNI) since 1993

### *University services*

Member of the University Senate, since 2005  
Boards of Trustees of the Universitat Politècnica de Catalunya (February 2001 – April 2002)  
Vice-Chair of the Council of Heads of Department (January 2001 – April 2002)

Board of Governors of the Universitat Politècnica de Catalunya (March 1997 – May 1998 and March 1998 – April 2002).

Doctoral Committee Member of the Universitat Politècnica de Catalunya (June 1996 – July 2000).

### **Summary of journal publications**

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<b>Journal</b>	<b>Impact factor</b>	<b>Number of papers</b>
International Journal for Numerical Methods in Engineering	1,501	13
Computer Methods in Applied Mechanics and Engineering	1,263	18
Journal of Engineering Mechanics, ASCE	0,743	4
Other indexed journals		24
Other papers in refereed journals		15

### **Selected publications (max. 5)**

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Huerta A, Liu W.K., "Viscous-flow with large free-surface motion". Computer Methods in Applied Mechanics and Engineering, 1988 ([124](#) times cited)

Huerta A, Pijaudier-Cabot G, "Discretization influence on regularization by two localization limiters". Journal of Engineering Mechanics-ASCE, 1994 ([28](#) times cited)

Huerta A, Fernández-Méndez S, "Enrichment and coupling of the finite element and meshless methods", International Journal for Numerical methods in Engineering, 2000 ([64](#) times cited)

Fernandez-Mendez S, Huerta A, "Imposing essential boundary conditions in mesh-free methods". Computer Methods in Applied Mechanics and Engineering, 2004 ([39](#) times cited)

Donea, J. and Huerta, A., The Finite Element Method for Flow Problems (ISBN: 0471 49666 9), 2003, John Wiley & Sons, Chichester (UK)

### **Other relevant information**

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#### *Workshop and Conference Committees*

##### Scientific Committee

- 1<sup>st</sup> and 2<sup>nd</sup>. International Conference in Adaptive Modeling and Simulation (ADMOS), 2003 and 2005
- 4<sup>th</sup> and 5<sup>th</sup> ECCOMAS Conference on Numerical Methods in Engineering, 2002 and 2004
- 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> Int. Conf. on Computational Plasticity fundamentals and applications, 1989, 1991, 1995, 1997, 2000, 2003 and 2005
- 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> Int. Conf. on Finite Elements in Fluids new trends and applications, 1993, 1995, 2000
- XIV Congreso de Ecuaciones Diferenciales y Aplicaciones (CEDYA), IV Congreso de Matemática Aplicada, 1995
- 4th World Congress on Computational Mechanics, 1998

##### Program Committee

- 2<sup>on</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> Congreso de Métodos Numéricos en Ingeniería, 1993, 1996, 1999, 2002, 2004 and 2005
- II Congreso Internacional de Métodos Numéricos en Ingeniería, 2002 (Guanajuato, México)

##### Organizing Committee

- 4<sup>th</sup> Int. Symp. on Computer Aided Design in Architecture and Civil Engineering, 1993
- 3rd ECCOMAS Conference on Numerical Methods in Engineering, 2000

#### *Editorial Works*

Schreyer, H.L., Armero, F. and Huerta, A., "The Theory and Prediction of Localized Failure in Materials", *Mechanics of Cohesive-Frictional Materials* (ISSN 1082-5010), Vol. 4 issue 2, 99-194, John Wiley & Sons, Chichester (UK), 1999

Breitkopf, P. and Huerta, A, "Meshfree and Particle Methods" *Revue Européenne des Éléments Finits (European J. of Finite Elements)*, Vol. 11, Issue 7-8, 2002

Huerta, A. and Rodríguez-Ferran, A Special Issue on "Arbitrary Lagrangian-Eulerian Formulation", *Computer Methods in Applied Mechanics and Engineering* (ISSN 0045-7825), Vol 193, Issues 39 – 41, 2004