

Marino Arroyo

Department of Applied Mathematics
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Current position

Assistant professor, Universitat Politècnica de Catalunya

Education

Civil Engineering, Escola Tècnica Superior d'Enginyers de Camins, Canals i Ports de Barcelona (1998)
Ph. D. in Mechanical Engineering, Northwestern University (USA) (2003)

Research interests

Computational solid mechanics
Modelling and simulation in nanoscale mechanics and materials, multiscale modelling and simulation
Physical and mathematical aspects of mechanics and materials

Career

Assistant Professor, Dept. of Applied Mathematics III, Universitat Politècnica de Catalunya, since 2004.
Postdoctoral Scholar, Graduate Aeronautical Laboratories, California Institute of Technology, 2003-2004
Research Assistant, Dept. of Mechanical Engineering, Northwestern University, 1999-2003

Honors and awards

"Ramón y Cajal" 2003 award (declined)
ASME/BOEING 2003 Structures and Materials Award
"la Caixa" fellowship (1999-2002)

Professional activities

Reviewer for the journals *International Journal for Numerical Methods in Engineering*, *International Journal of Solids and Structures*, *Journal of the Mechanics and Physics of Solids*, *Journal of Nonlinear Science*, *Physical Review B*, *Computational Materials Science*, *Computational Mechanics*.

Summary of journal publications

Journal	Impact factor	Number of papers
Physical Review Letters	7.035	1
Physical Review B	2.962	1
Journal of the Mechanics and Physics of Solids	2.885	1
Other indexed journals		3
Other papers in refereed journals		1

Selected publications (max. 5)

Arroyo M, Belytschko T, "Finite element methods for the non-linear mechanics of crystalline sheets and nanotubes", *International Journal for Numerical Methods in Engineering* 59, 2004 (Times Cited: 1)
Arroyo M, Belytschko T, "Nonlinear mechanical response and rippling of thick multiwalled carbon nanotubes", *Physical Review Letters* 91, 2003 (Also featured in the *Virtual Journal of Nanoscale Science & Technology* 8, Times Cited: 6)
Arroyo M, Belytschko, T, "A finite deformation membrane based on inter-atomic potentials for the transverse mechanics of nanotubes", *Mechanics of Materials* 35, 2003 (Times Cited: 4)
Arroyo M, Belytschko T, "An atomistic-based finite deformation membrane for single layer crystalline films", *Journal of the Mechanics and Physics of Solids* 50, 2002 (Times Cited: 23)

Diez P, Arroyo M, Huerta A, "Adaptivity based on error estimation for viscoplastic softening materials", *Mechanics of Cohesive-Frictional Materials* 5, 2000 (Times Cited: 13)