

# Francisco Gancedo

## Curriculum Vitae

### Contact details

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Department of Mathematics  
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### Personal data

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Born: October 11th, 1980

Citizenship: Spanish

### Education

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- Universidad de Sevilla, Seville, Spain      Bachelor's Degree, July 2003  
Mathematics
- Universidad Autónoma de Madrid, Madrid, Spain      Ph.D., June 2007  
Mathematics

### Employment

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L. E. Dickson Instructor      September 2007-Present  
University of Chicago, Chicago, Illinois

### Research interests

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Analysis, partial differential equations and fluid mechanics

### Ph.D. advisor

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Diego Córdoba, Consejo Superior de Investigaciones Científicas (CSIC)

## List of publications

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1. “Contour dynamics of incompressible 3-D fluids in a porous medium with different densities”, with D. Córdoba. *Comm. Math. Phys.*, 273, 445-471, 2007
2. “Analytical behavior of 2D incompressible flow in porous media”, with D. Córdoba and R. Orive. *J. Math. Phys.*, 48, 6, 2007
3. “Existence for the  $\alpha$ -patch model and the QG sharp front in Sobolev spaces”. *Adv. Math.*, 217, 2569-2598, 2008
4. “A maximum principle for the Muskat problem for fluids with different densities”, with D. Córdoba. To appear in *Comm. Math. Phys.*, 2008
5. “A note on the interface dynamics for convection in porous media”, with D. Córdoba and R. Orive. *Physica D*, 237, 1488-1497, 2008
6. “Incompressible flow in porous media with fractional diffusion”, with A. Castro, D. Córdoba and R. Orive. *Submitted*, 2008
7. “Interface evolution: the Hele-Shaw and Muskat problems”, with A. Córdoba and D. Córdoba. *Submitted*, 2008
8. “The Rayleigh-Taylor condition for the evolution of irrotational fluid interfaces”, with A. Córdoba and D. Córdoba. *Submitted*, 2008
9. “A naive parametrization for the vortex sheets problem”, with A. Castro and D. Córdoba. *Submitted*, 2008
10. “Interface evolution: water wave in 2-D”, with A. Córdoba and D. Córdoba. *Submitted*, 2008

## Seminar and conference talks

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- CSIC, Madrid, Spain February 2006
- Universidad Autónoma de Madrid, Madrid, Spain April 2007
- Las EDPs como herramienta: modelización, análisis y simulación, Castro Urdiales, Spain April 2007
- Workshop on the Euler equations, Suwon, Korea May 2007
- Optimal Transportation, and Applications to Geophysics and Geometry, Edinburgh, UK July 2007
- Calderón-Zygmund Analysis Seminar, University of Chicago, Chicago, USA November 2007
- Mathematical Modelling and Numerical Simulation in Science and Technology, Castro Urdiales, Spain July 2008

- Navier-Stokes equations: Classical and generalized models, Pisa, Italy September 2008
- University of Minnesota, Minneapolis, USA October 2008

## Visits

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|---|-----------------------|
| Princeton University, Princeton, New Jersey | October-November 2006 |
| CSIC, Madrid, Spain                         | July-September 2008   |

## Fellowships and awards

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- High school award from the Government of Spain (1998)
- *Introducción a la investigación para alumnos de penúltimo curso de carrera* scholarship from the CSIC (July and September 2002)
- *Colaboración* scholarship from the Government of Spain (September 2002-July 2003)
- *Realización de curso de lengua inglesa en el extranjero* scholarship from the Government of Spain (July-August 2003)
- *Tercer Ciclo* master scholarship from the Universidad Autónoma de Madrid (October-December 2003)
- *Formación de Personal Universitario* Ph.D. scholarship from the Government of Spain (February 2004-August 2007)

## Grants

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| • MCYT research grant BFM2002-02042 from the Government of Spain                         | 2002-2005 |
| • Castilla-La Mancha research grant PAC-05-005-2 from Junta de Castilla-La Mancha, Spain | 2005-2007 |
| • MEC research grant MTM2005-05980 from the Government of Spain                          | 2005-2008 |
| • European Research Council grant ERC-2007-StG-203138-CDSIF                              | 2008-2013 |
| • Consolider i-Math research grant C3-0110 from Comunidad de Madrid, Spain               | 2008-2010 |
| • MICINN research grant MTM2008-03754 from the Government of Spain                       | 2008-2011 |

## Teaching experience

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- Graduate Course on Fluid Mechanics. Universidad Autónoma de Madrid. May 2005, Madrid.
- Graduate Course on Mathematics in the CSIC. Department of Mathematics (CSIC). February 2006, Madrid.
- Instructor at the University of Chicago:
  - Honors Calculus, part I Autumn 2007
  - Honors Calculus, part II Winter 2008
  - Honors Calculus, part III Spring 2008
  - Mathematical Methods for Social Science Spring 2008

## References

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- Peter Constantin, University of Chicago, Chicago, Illinois
- Diego Córdoba, CSIC, Madrid, Spain
- Charles Fefferman, Princeton University, Princeton, New Jersey
- Carlos Kenig, University of Chicago, Chicago, Illinois
- Edriss S. Titi, University of California, Irvine, California