

SEMINARIO

The Laplacian and
Beyond

Celebrating the mathematics
of Luis Caffarelli

Cursos de verano **Santander**

Horario y dirección de contacto

Mañana de L a V: 9.00 a 14.00 h

Santander

Campus de Las Llamas
Avda. de los Castros, 42
39005 Santander
Tlf.: 942 29 87 00

Madrid

C/ de Isaac Peral, 23
28040 Madrid
Tlf.: 91 592 06 31 / 33

A partir del 17 de junio

Mañana de L a V: 9.00 a 14.00 h
Tarde de L a J: 15.30 a 18.00 h

Santander

Palacio de la Magdalena
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Sponsor



Este curso es susceptible de ser reconocido como formación permanente del profesorado para el personal docente de los centros que imparten las enseñanzas reguladas en la Ley Orgánica 2/2006, de Educación, en base al artículo 21 y 29 de la Orden EDU/2886/2011, de 20 de octubre, por la que se regula la convocatoria, reconocimiento, certificación y registro de las actividades de formación permanente del profesorado.

Código 65PL - ECTS: 2,5

Directors

Matteo Bonforte

UAM-ICMAT

Juan Luis Vázquez

UAM-RAC

Organization

Félix del Teso

UAM-ICMAT

Description of the event: Professor *Luis Caffarelli* has been a key figure in the last four decades, and his mastery is widely recognized, for which he has been awarded the Abel 2023 prize, on top of many other prestigious distinctions (Wolff, Steele, etc.). The school brings together leading figures in the field, collaborators of Luis. The main target audience is researchers in their early stages of training, both doctoral and postdoctoral, as well as more advanced researchers. **School format:** The main courses will be taught by *Xavier Cabré* (ICREA-UPC, Barcelona) and *Alessio Figalli* (ETH Zürich, FIM Director). The lectures will be given by renowned researchers in the fields of nonlinear PDE and free boundaries. These two blocks aim to give a broad picture of the mathematical topics investigated by Luis Caffarelli, from the turn of the century to the present time, highlighting his vitality.

Apertura matrícula

Desde el día 8 de abril de 2024
(plazas limitadas)

Solicitud
online





Monday 22

- 10.30 h Welcome and Opening
Juan Luis Vázquez
- 11.00 h Free boundary regularity in obstacle problems 1/3
Alessio Figalli
ETH Zurich, FIM
- 12.30 h Fully nonlinear tools 1/3
Xavier Cabré Vilagut
ICREA and Universitat Politècnica de Catalunya
- 13.30 h Chairman Break. Address by
Luis Ángel Caffarelli
University of Texas at Austin
- 16.00 h An energy model for harmonic graphs with junctions
Daniela da Silva Columbia University



Tuesday 23

- 10.00 h Free boundary regularity in obstacle problems 2/3
Alessio Figalli
- 11.30 h The Landau equation does not blow up
Luis Silvestre
Chicago University
- 12.30 h Chairman Break. Address by
Sandro Salsa
Politecnico di Milano

- 13.00 h Constraint Maps (Overview & Recent Developments)
Henrik Shahgholian
KTH Stockholm
- 16.00 h The discrete dislocation dynamics of multiple dislocation loops
Stefania Patrizi
University of Texas at Austin
- 17.00 h Problem Session
Alessio Figalli



Wednesday 24

- 10.00 h Fully nonlinear tools 2/3
Xavier Cabré
- 11.30 h Free boundary regularity in obstacle problems 3/3
Alessio Figalli
- 12.30 h Chairman Break. Address by
Fernando Soria
Universidad Autónoma de Madrid
- 13.30 h Non C^1 solutions to the special Lagrangian equation
Vasile Ovidiu Savin
Columbia University



Thursday 25

- 10.00 h Fully nonlinear tools 3/3
Xavier Cabré
- 11.30 h Parabolic (time-dependent) Obstacle Problems
Ioannis Athanassopoulos
University of Crete

- 12.30 h Chairman Break. Address by
Irene M Gamba Caffarelli
University of Texas at Austin
- 13.00 h Recent development for the Landau-Coulomb equation
Maria Gualdani
University of Texas at Austin
- 16.00 h Liquid Crystal models: regularity vs singularity formation
Yannick Sire
Johns Hopkins University
- 17.00 h Problem Session
Xavier Cabré



Friday 26

- 10.00 h Sheet happens (but only as $\sqrt{1-s}$)
Enrico Valdinoci
University of Western Australia
- 11.30 h Boundary vorticity estimate for Navier-Stokes using Caffarelli-Kohn-Nirenberg
Alexis Vasseur
University of Texas at Austin
- 12.30 h Plateau's laws for soap films, the Allen-Cahn equation, and a hierarchy of Plateau-type problems
Francesco Maggi
University of Austin at Austin
- 13.30 h Closing
Matteo Bonforte
Juan Luis Vázquez



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