



Pedro Nunes Lectures

Pedro Nunes Lectures is a new initiative organized by CIM, in collaboration with SPM (Sociedade Portuguesa de Matemática), with the support of the Fundação Calouste Gulbenkian, for promoting short visits to Portugal of outstanding mathematicians. Each visitor is invited to give two or three lectures in Portuguese universities about recent developments in Mathematics, its applications and cultural impact.

Pedro Nunes Lectures are addressed to a wide audience covering broad mathematical interests, particularly PhD students and young researchers. They constitute an opportunity for students and, especially prospective students to foster acquaintance with outstanding mathematicians. The *Pedro Nunes Lectures* promote the cooperation between Portuguese universities and are a high level complement of PhD programs in Mathematics.

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INAUGURAL PEDRO NUNES LECTURE

The first sessions of *Pedro Nunes Lectures* will be given by professor Luis Caffarelli (University of Texas at Austin) at the universities of Porto and Coimbra. More information in http://www.cim.pt/?q=pnl_caffarelli.

Professor Luis Caffarelli is Sid W. Richardson Foundation Regents Chair at the University of Texas at Austin, and has been awarded in 2009 the AMS Leroy P. Steele Prize for Lifetime Achievement. He is also the Director of Mathematics at the University of Texas at Austin of the CoLab-UTAustin/Portugal partnership program.



- ***Phase transition and minimal surfaces for non local operators.*** July 8, 2009 - Departamento de Matemática da Universidade do Porto.

Abstract: Movement by mean curvature, i.e, when a surface evolves with normal speed proportional to its mean curvature, appears in the modelling of phase transition phenomena, for instance as a limit of phase field models. In the case of slow decay of long range interactions, the corresponding limiting transition surface moves proportionally to an "integral version" of mean curvature. We will describe this phenomena, and the geometric properties of the corresponding "integral minimal surfaces".

- ***Fully non linear equations for nonlocal diffusions.*** July 15, 2009 - Departamento de Matemática da Universidade de Coimbra.

Abstract: Fully non linear equations arise in optimal control and game theory, when one is able to optimize a (continuous) diffusion process (or has incomplete information about it). A complete theory of existence and regularity for these equations was developed in the eighties thanks to the remarkable contributions of Krylov and Safanov (the Harnack inequality) and of Evans-Krylov (the Evans-Krylov regularity theorem). In a series of papers, in collaboration with Luis Silvestre, we developed the parallel theory in the case of discontinuous (Levy type) diffusion. I plan to present the main steps of the theory, and give an idea of our proof of the Evans Krylov theorem in this case.

Call for Proposals

For ESF Research Conferences to be held in 2011

The European Science Foundation invites scientists to submit proposals for high-level research conferences to take place in 2011 (and 2012 for Mathematics) within the framework of its **Research Conferences Scheme** in the following scientific domains:

- Molecular Biology;

- Brain, Technology and Cognition;
- Mathematics;
- Physics/Biophysics and Environmental Sciences;
- Social Sciences and Humanities.

Submission deadline: 15 September 2009, midnight.

For more information please contact the ESF Conferences Unit at conferences-proposals@esf.org.

(see <http://www.esf.org/activities/esf-conferences/call-for-proposals.html>)