

Professor Enrico Valdinoci

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"Nonlocal problems in analysis and geometry"

The course gives an introductory presentation of some recent developments for problems driven by the fractional Laplacian and related operators that arise in the theory of PDEs and calculus of variations.

The material covered and the details discuss will be adjusted according to the inclinations of the participants, but in principle the course should take into consideration the following main topics:

- *What is the (fractional) Laplacian?*
- *Relation with probability and water waves*
- *Fourier transform and extension problems*
- *How do (fractional) harmonic functions look like?*
- *Problems arising in crystal dislocation*
- *Problems arising in quantum mechanics*
- *Rigidity and symmetry problems*
- *Nonlocal minimal surfaces*

December 1-5, 2014

Departamento de Matemáticas U.A.M.

Schedule:

December 2014

Mon 1.	Tue 2.	Wed 3.	Thu 4.	Fry 5.		
12.30- 14	12.30- 14	12.30- 14	12.30- 14	10.30- 12.30		

Room: Modulo 17-320