

Centro de Investigação em Matemática e Aplicações  
Departamento de Matemática  
Programa de Doutoramento em Matemática

## Seminário/Seminar

March 21th, 2024, CLAV Room 066, 14:30

Zoom address: <https://videoconf-colibri.zoom.us/j/98650312699>

### Inverse conductivity problems based on vector variational principles: the 2D case\*

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**Abstract:** Electrical impedance tomography and Calderón's problem is being intensely studied in the last decades. Both from the perspective of theory and of applications, it is a challenging and appealing problem. We focus on several direct vector, variational principles to tackle the practical recovery problem of an unknown conductivity coefficient from boundary measurements. Despite difficulties associated with the vector nature of the problems, including lack of (quasi, poly)-convexity, experiments show remarkable performance of some of the functionals examined.

\*joint work with Pablo Pedregal, UCLM, Spain

**Keywords:** Gradient methods, inverse problems, non-linear systems of partial differential equations, vector variational methods.

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