Inverse Problems
Special Session B18

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Inverse problems involve the task of deducing, from observed data, the priorly unknown causal factors that contributed to the data. They are ubiquitous in science and technology, with applications ranging from medical imaging to engineering, as in nondestructive evaluation, to geophysical prospections, just to name a few examples. Mathematically speaking, it entails determining information on a PDE by collecting measurements associated with its solutions. For the applications, it is crucial to have a deep theoretical understanding of inverse problems as well as reliable and efficient numerical reconstruction methods. Both these issues are mathematically very challenging, due to the fact that inverse problems are often nonlinear and ill-posed.

Our special session will focus on key aspects of inverse problems including uniqueness and stability issues as well as reconstruction methods. We will also explore the integration of machine learning tools in this field. We bring together a balanced mix of leading experts in the field and emerging researchers at the Ph.D. or postdoc level. To foster and strengthen the cooperation between the US and Italian inverse problems communities, both groups are well represented in our session.

For more information visit `mate.unipv.it/rondi/AMSUMI-Inverse_Problems.html`.

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