

These are the proceedings of the seminar “Mathematical Methods for Imaging and Inverse Problems” held at the Institut Henri Poincaré, 2007-2008.

Imaging and inverse problems for partial differential equations is a fascinating research area to applied mathematicians. It is quite a hot topic that has attracted a lot of attention of researchers in recent years. Challenging problems arise and they often trigger the investigation of fundamental problems in various branches of mathematics, including harmonic analysis, complex analysis, numerical analysis, optimization, and image analysis.

The main purpose of this volume is to review the state-of-the-art developments in imaging and inverse problems from analytic, numerical, and physics perspectives. Contributions are written by prominent experts. We envision that the proceedings will give insight into future research directions and stimulate much needed progress in the field.

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Habib Ammari