INVERSE PROBLEMS AND THEIR APPLICATIONS

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ABSTRACT

The objective of this mini-symposium is the dissemination of recent advances in the area of Inverse Problems. The mini-symposium welcomes contributions consisting of original research works in the area of inverse problems and their applications to signal and image processing, Medicine, Geology, Acoustics, Rheology, heat conduction, etc. Contributions may be theoretical, computational and/or experimental.

TOPICS OF INTEREST:

- General theory: deterministic regularization methods, statistical regularization methods, results on existence, uniqueness and stability.
- Parameter choice rules.
- Numerical analysis of inverse ill-posed problems.
- Applications to signal and image processing and restoration.
- Parameter identification in PDEs.
- Relations between inverse problems and information theory, communication theory.
- Qualification and saturation. Optimal convergence of regularization methods and reciprocal results.
- Inverse eigenvalue problems.
- Inverse problems in heat conduction, inverse boundary value problems. Inverse problems in electromagnetism, elasticity, quantum mechanics and electrodynamics.
- Inverse problems in potential theory.