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Numerical Analysis: Inverse Problems – Theory and Applications

Guest Editor:

Message from the Guest Editor

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Deadline for manuscript submissions: closed (31 December 2021) A plenty of problems in mathematics, economics, physics, biology, chemistry, engineering, in particular, e.g., optics, radar, acoustics, communication theory, signal processing, medical imaging, geophysics, astronomy, remote sensing, machine learning and other disciplines can be reduced to solving an inverse problem in an abstract space, e.g., in Hilbert and Banach spaces. It is called an inverse problem because it starts with the results and then calculates the causes. Solving inverse problems is a nontrivial task that involves many areas of Mathematics and Techniques. In case the problem is ill-posed small errors in the data are greatly amplified in the solution, therefore, regularization techniques using parameter choice rules with optimal convergence rates are necessary.

While inverse problems are often formulated in infinite dimensional spaces, limitations to a finite number of noisy data, and the practical consideration of recovering only a finite number of unknown parameters, may lead to the problems being recast in discrete form, which are typically ill- conditioned.

Papers involving all those above mentioned topics are welcome.









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Message from the Editor-in-Chief

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