Einladung zum Oberseminar Wissenschaftliches Rechnen

Julius-Maximilians-Universität Würzburg
Lehrstuhl für Wissenschaftliches Rechnen IX

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A NOISE LEVEL-FREE PARAMETER CHOICE RULE FOR SOLVING INVERSE PROBLEMS

We consider the Hanke-Raus heuristic parameter choice rule to the Landweber iteration and Tikhonov regularization for solving ill-posed problems. This rule does not require the noise level, which may be inaccessible and prone to improper estimation in many instances. A famous veto states that convergence in the worst-case scenario cannot be expected in general.

However, by imposing certain conditions on the noisy data, we can establish convergence. Convergence under this rule also extends with a penalty functional penalty, such as L1 and TV-penalty terms, which are used to recover solutions with special features, such as sparsity and piecewise constancy. We discuss some recent progress in this heuristic rule, which also involves Newton-type methods.

Ort: Raum 30.02.003 (Mathematik West, 2.Stock) Zeit: Donnerstag, 10.07.2025, 12:00 Uhr

Zu diesem Vortrag laden wir Sie herzlich ein.
You are cordially invited to this lecture.

gez. Prof. Dr. Alfio Borzì
gez. Prof. Dr. Frank Werner