introduction

Sergiy Pereverzyev

PhD student at

Fraunhofer Institut
Techno- und
WirtschaftsMathematik,

Department Transport Processes,

Kaiserslautern, Germany

Fraunhofer Institut Techno- und Wirtschaftsmathematik

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Sci.supervisors:

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ITWM
Fraunhofer Institut
Techno- und
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Sci.interests:

regularization
of inverse problems

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regularized fixed-point

$\hat{u}$: $Fu = y$

regularized fixed-point

$\hat{u}$: $Fu = y$ $F = A + G$

regularized fixed-point

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$$Au = y - Gu$$

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$\hat{u}$: $Fu = y$ $F = A + G$

$$Au_{k+1} = y - Gu_k$$

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regularized fixed-point

$\hat{u}$: $\qquad Fu = y \qquad F = A + G$

$$Au_{k+1} = y_\delta - Gu_k$$

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regularized fixed-point

$\hat{u}$: $\qquad Fu = y \qquad F = A + G$

$$A^*Au_{k+1} = A^*(y - Gu_k)$$

regularized fixed-point

$\hat{u}$: $\quad Fu = y \quad F = A + G$

$$u_{k+1} = (A^*A)^\dagger A^*(y - Gu_k)$$

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$\hat{u}$: $\quad Fu = y \qquad F = A + G$

$$u_{k+1} = (A^*A)^\dagger A^*(y - Gu_k)$$

$$u_{k+1}^\alpha = g_\alpha(A^*A)A^*(y_\delta - Gu_k)$$

regularized fixed-point

$\hat{u}$: $\quad Fu = y \quad F = A + G$

$$u_{k+1} = (A^*A)^\dagger A^*(y - Gu_k)$$

$$u_{k+1}^\alpha = g_\alpha(A^*A)A^*(y_\delta - Gu_k)$$

$$\|\hat{u} - u_{k+1}^\alpha\| \leq \varphi(\alpha) + \frac{\delta}{\lambda(\alpha)} + \rho\|\hat{u} - u_k\|$$

balancing principle

$$\|\hat{u} - u^\alpha\| \leq \varphi(\alpha) + \frac{\delta}{\lambda(\alpha)}$$

$$\Delta = \{\alpha_i,\ i = 1, \ldots, N\}$$

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$$i_{\text{opt}} = \max\left\{ i \middle| \ \|u^{\alpha_i} - u^{\alpha_j}\| \leq \frac{4\delta}{\lambda(\alpha_j)},\ j = 1, \ldots, (i-1) \right\}$$

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$$\|\hat{u} - u^{\alpha_{i_{\text{opt}}}}\| \leq b(\delta)$$

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Hui Cao

RICAM,

Group Inverse Problems

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