ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE DOCTORAL SEMINAR

Regularization of Inverse Problems with iterative multiscale schemes

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Chaired by Elena Resmerita | Department of Mathematics

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ABSTRACT

Many inverse problems can be modeled as operator equations of the form $Tx = f$, that typically exhibit ill-posed behavior. This means that small perturbations in the data f can lead to non-existence of solutions or arbitrarily different solutions. One way to deal with this issue are so called regularization methods, which approximate the solutions in a continuous way. The multiscale hierarchical decomposition method of Tadmor et al (TNV, for short) is a regularization method used successfully in mathematical imaging. Yet, there seems to be possible improvements towards understanding the theoretical properties of this method. The talk will cover ideas to design more regularization methods based on the TNV technique and to also improve the knowledge on existing related schemes (e.g. the nonstationary Bregman iterations). This might lead to further applications in other contexts (e.g. for sparsity problems).

We hope to see you there!