1082-65-252 **Stephan W Anzegruber** and **Patricia K Lamm*** (lamm@math.msu.edu). *Local regularization using nondifferentiable penalty constraints.*

Local regularization,a non-classical method for the solution of ill-posed inverse problems, has been used successfully in a number of applications. Depending on the situation, its advantages include the ability to retain the structure of the original problem (often lost using classical methods) and to allow for fast regularized solution algorithms.

In this talk we discuss recent extensions of the local regularization theory which allow the inclusion of nondifferentiable penalty constraints (e.g., TV, L_1-sparsity, etc.) for linear Fredholm inverse problems, and illustrate with the example of image deblurring. (Received July 09, 2012)