

1077-49-1818      **Markus Grasmair\*** ([markus.grasmair@univie.ac.at](mailto:markus.grasmair@univie.ac.at)), Computational Science Center,  
University of Vienna, Nordbergstrasse 15, Vienna, 1090. *Recent Results and Open Problems in  
Sparse Regularisation.*

During the last years, Tikhonov regularisation with sparsity promoting regularisation functionals has become an important tool in the solution of inverse and ill-posed problems. From the theoretical point of view, the application of these methods is in some special cases well founded, as one can show that  $l^1$  regularisation, and also sub-linear, non-convex regularisation, together with the assumption of sparsity of the true solution allows the derivation of linear convergence rates. These results, however, are at the moment restricted to discrete settings, and no extension to important continuous settings like total variation regularisation is at hand. In this talk, we will give an overview of the existing results on sparse regularisation, and discuss the problems that arise in the continuous case. (Received September 21, 2011)