# Regularization theory for convex and some non-convex regularizers

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*(joint work with C. Kirisits, RICAM)*

***Abstract.*** *The analysis of Tikhonov regularization has advanced from a theory for solving linear ill-posed operator equations in a Hilbert space setting with quadratic regularizers, both in a finite and an infinite dimensional setting, to more complex situations, when the operator equation is nonlinear or with sophisticated regularizers.*

*In the later case it advanced from a general theory of convex regularizers to non convex ones. We give an overview on the analysis and present a new analysis for a particular case of non-convex regularizers based on some work of M. Grasmair.*