

Meeting: 1005, Newark, Delaware, SS 13A, Special Session on Integral and Operator Equations

1005-45-16 **Heinz W Engl*** (heinz.engl@jku.at), Industrial Math.Inst.,Kepler Universitaet/, Radon
Institute for Comp.Appl.Math. of the, Austrian Academy of Sciences, A-4040 Linz, Austria, and
Andreas Hofinger and **Stefan Kindermann**. *Convergence in Distribution of Regularization
Methods for the Stable Solution of Linear Ill-Posed Operator Equations.*

Convergence of regularization methods is usually studied in a deterministic setting, based on an estimate for the noise in the norm of a suitable Hilbert space. However, in many practical situations, a stochastic noise concept would be preferable. We present a methodology which can be used to "lift" error estimates from a Hilbert space setting to spaces of probability measures on the Hilbert space equipped with the Prokhorov metric. This allows to prove convergence results (with rates in the Prokhorov metric) for regularization methods with respect to convergence in distribution. We illustrate the general theory for Tikhonov regularization of ill-posed linear operator equations. (Received December 27, 2004)