臺灣大學數學系演講

Inverse Problems Seminar

演講者：Prof. Jijun Liu (Director, Department of Mathematics, Southeast University, China)

講　題：Total variation regularization for backward time-fractional diffusion problem

時　間：2013年2月4日 (星期一) 10:00~11:00

地　點：臺灣大學天文數學館 440 室

摘　要：Consider a backward problem for time-fractional diffusion process, which aims to determine the initial status of some physical field such as temperature for slowly diffusion from its present measurement data. A new optimization model is proposed based on total variation regularization with residual error in the frequency domain as data fidelity term. The well-posedness including existence, uniqueness and stability for the minimizer of this optimization problem is proven. To meet the need of high speed, the fast total variation deconvolution algorithm (FTVD) is employed for optimization problem due to our data fitting in frequency domain. For this iterative algorithm, we prove the convergence with respect to iteration times and stability on the choice of regularizing parameter. The numerical results are given.

主辦人：王振男 http://www.math.ntu.edu.tw/~jnwang/ipseminar.htm