

Meeting: 1003, Atlanta, Georgia, SS 17A, AMS-SIAM Special Session on Nonsmooth Analysis in Variational and Imaging Problems, I

1003-49-153 **Stanley Osher*** (sjo@math.ucla.edu), UCLA Mathematics, 520 Portola Plaza, Los Angeles, CA 90095-1555, and **Martin Burger, Donald Goldfarb, Jinjun Xu** and **Wotao Yin**. *An Iterated Regularization Method for Total Variation Based Image Restoration.*

We introduce a new iterative regularization procedure for inverse problems based on the use of Bregman distances, with particular focus on problems arising in image processing. We are motivated by the problem of restoring noisy and blurry images via variational methods, specifically by using the BV seminorm. We obtain rigorous convergence results and effective stopping criteria for the general procedure. The numerical results for denoising appear to give significant improvement over standard methods and preliminary results for deblurring/denoising are very encouraging. (Received August 13, 2004)