

1056-90-1776

L. A. Melara* (lamelara@ship.edu), Department of Mathematics, Shippensburg University, 1871 Old Main Drive, Shippensburg, PA 17257-1804, and **A. J. Kearsley** (ajk@nist.gov), NIST, Gaithersburg, MD 20899. *An Estimate of The Radius of an Attraction Ball for TV-Minimization Problems in Image Denoising.*

Homotopy methods can often be used to make mathematical programming problems easier to solve. One source of notoriously difficult problems is total variation image denoising problems. In this talk, the speaker will present a method using a regularization parameter as a homotopy parameter to numerically approximate solutions to TV-equality constrained minimization problems. We present an estimate on the radius of the Kantorovich ball centered at the initial iterate of Newton's method. Furthermore, we show an estimate on the radius of an attraction ball centered at the solution of the optimization problem. The talk will summarize numerical results and convergence results. (Received September 22, 2009)