1003-65-1655          **Daniela Calvetti**, **Bryan Lewis** and **Lothar Reichel\*** (`reichel@math.kent.edu`), Department of Mathematical Sciences, Kent State University, Kent, OH 44242, and **Fiorella Sgallari**.
          *Iterative methods for Tikhonov regularization.*

Image deblurring problems give rise to large ill-posed systems of equations, whose solution recently has received considerable attention. We discuss the determination of an approximate solution by Tikhonov regularization and survey available iterative methods that both determine a suitable value of the regularization parameter and an associated approximate solution. The iterative methods explore the connections between orthogonal polynomials, Gauss quadrature, and Lanczos bidiagonalization. Methods for both unconstrained and constrained problems will be discussed. (Received October 06, 2004)