1023-49-1688   **Elena Resmerita*** (`elena.resmerita@ricam.oeaw.ac.at`), Altenbergerstr. 69, 4040 Linz, Austria, and **Otmar Scherzer**. *Convergence rates for non-quadratic regularization of nonlinear inverse problems.*

We present error estimates for convex regularization of nonlinear ill-posed operator equations in Banach spaces and derive convergence rates by using a priori strategies. A novel and natural assumption that helps in establishing the results involves the Bregman distance associated with the possibly non-smooth regularizor. These aspects are discussed in several contexts such as total variation regularization for image denoising. (Received September 26, 2006)