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Lixin Shen\*, Syracuse University, Department of Mathematics, Syracuse, NY 13244, and Yuesheng Xu (yxu06@syr.edu), Syracuse University, Department of Mathematics, Syracuse, NY 13244. Proximal Fixed-point Algorithms for Total-Variation Image Denoising Models: Part II. Preliminary report.

The total variation model is one of the earliest and efficient models for image denoising. The difficulty in minimizing functionals based on the total variation lies in non-differentiability of the total variation semi-norm and high dimension of image data. A number of ideas have been proposed to tackle this difficulty. In this talk, we will present a new treatment on the total variation model with the help of a careful study of the proximity operator and a formulation of the image denoising problem as fixed point equation. Mathematical insight of the proposed proximal fixed point algorithms will be provided. (Received August 06, 2010)