1062-49-175 **Yuesheng Xu*** (yxu06@syr.edu), Syracuse University, Department of Mathematics, Syracuse, NY 13244, and **Lixin Shen** (lshen03@syr.edu), Syracuse University, Department of Mathematics, Syracuse, NY 13244. *Proximal Fixed Point Algorithms for Total variation Image Denoising Models: Part I.* 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)