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Lixin Shen* (1shen03@syr.edu), Department of Mathematics, Syracuse University, 213C Cargenie Hall, Syracuse, NY 13244. *Restoration from Incomplete Data in the Transformed Domain*. Preliminary report.

In this talk, the problem of restoration from incomplete data in the transformed domain are studied. We consider the case when the transform is a tight frame, and real images have sparse representations under the transform. We propose a simple algorithm to solve the problem, and prove its convergence. We find that the limit satisfies some minimization properties. Finally, applications of our algorithm to high-resolution and super-resolution image reconstruction are presented. (Received September 11, 2007)