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Recent Advances on Sparse Solution and its Application for Image Denoising

We shall first survey recent developments on the ℓ_q minimization approach with $q < 1$ for the sparse solution of under-determined linear systems. This approach includes both constrained and unconstrained ℓ_q minimizations.

Next we shall explain recent developments on greedy algorithms for the sparse solution. Mainly, we shall provide a convergence analysis of an iteratively least squares orthogonal greedy algorithm. We use this algorithm for image denoising.

Finally, we present some numerical evidence of image and movie denoising.