Quasi-linear Compressed Sensing and Algorithmic Strategies

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We consider quasi-linear compressed sensing and reconstruct rapidly decaying signals through greedy strategies. The findings are applied to analyze simulated asteroseismic and phase retrieval problems, but may also have wider applications. For sparse signals that do not necessarily satisfy rapid decay assumptions, but can be well approximated by sparse vectors, we discuss iterative hard-thresholding and also develop an iterative soft-thresholding algorithm.