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Victor Churchill* (victor.a.churchill.gr@dartmouth.edu). *Image reconstruction via edge-masked regularization.*

We present a reconstruction method for edge-sparse images that uses approximate edge locations to enforce a sparsity penalty more precisely than standard ℓ_1 regularization methods. Specifically, an edge detection informs a reconstruction where ℓ_2 regularization is applied away from edges. Since the difficulty of the problem is effectively shifted from reconstruction to edge detection, we also discuss several methods for detecting edges from data that are acquired as non-uniform Fourier samples as in synthetic aperture radar. (Received September 17, 2019)