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Weihong Guo* (wxg49@case.edu), 10900 Euclid Avenue, Cleveland, OH 44106. *A convex relaxation segmentation scheme based on shearlets.* Preliminary report.

Image segmentation is an essential problem in imaging science. Non-convex models such as Mumford-Shah and Chan-Vese have been proven to be successful but are hard to implement. We combine convex relaxation methods with L1 shearlet sparsity to efficiently segment images with multi-scale and multi-directional details. The proposed optimization problem is solved using fast techniques such as Split Bregman, ADMM and FFT. Comparisons with other competitive segmentation methods validate the efficiency of the proposed approach. (Received September 16, 2013)