Michael I Ham* (mikeh@lanl.gov), MST 080, LANL, Los Alamos, NM 87544. Exploring Sparse Reconstruction of Single Objects Within Imagery. Preliminary report.

In computer vision, object detection using sparse representation has proven to be one of the most robust methods for locating and identifying a wide range of object categories. Year after year, detection accuracy is improving in tests like the Image Net Large Scale Visual Recognition Challenge, but some fundamental concepts of image reconstruction through sparse representation have not been fully explored. In this presentation we examine to what degree the same sparse elements are used to represent the entirety of the same object within an image and whether the change in the composition of those representative groups can be used to detect the edges of an object within an image. It is hoped this work can produce insights that increase the accuracy of sparse detection methods. (Received February 23, 2015)