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Rick Chartrand* (rickc@lanl.gov). *Image and Video Processing with Nonconvex Splitting Algorithms*. Preliminary report.

In this talk we'll look at applications of alternating direction, method of multipliers (ADMM) algorithms to a selection of problems from image and video analysis. We'll see that better results are obtained by using nonconvex regularization. This can be implemented efficiently, using a nonconvex penalty function that is custom-designed to be minimized by means of a straightforward generalization of soft thresholding. Such efficiency becomes crucial for large-scale applications, particularly those involving video. (Received September 24, 2012)