

Department of Electrical and Computer Engineering  
The Johns Hopkins University  
520.648 Compressed Sensing and Sparse Recovery – Spring 2017

## Homework Assignment III

**Reading Assignment:** Lecture Notes, OMP, SP, CoSaMP

*Computer Assignment: Sparse Signal Recovery via Matching Pursuit.*

1. Implement 3 matching pursuit algorithms as discussed in lectures: Orthogonal Matching Pursuit (OMP), Subspace Pursuit (SP) and Compressive Sampling Matching Pursuit (CoSaMP).
2. Repeat what we have done in Assignment II by replacing  $\ell_1$ -minimization with 3 matching-pursuit algorithms. Do you have any comment or observation on recovery accuracy as well as computational complexity of linear programming and matching-pursuit algorithms?

Due date: **Thursday, Feb. 23** in lecture