Lab. Session 4

1) Given the signals ex4mwden.mat

* Perform hard and soft thresholding in wavelet domain using the toolbox functions; set the value of the threshold to the optimum value th\_opt=sqrt(2\*ln(N)) where N is the number of signal samples; run the algorithm for th running from zero to 2\*th\_opt;
* Write a script performing the same operations;
* Write a script performing detranding and reconstruct the detranded signal;
* Repeat the same processing using the stationary wavelet transform (swt)
* Test the algorithm on the signal wnoislop.mat.

2) Generate a signal of duration 4 s assuming a sampling rate of 256Hz consisting of

* a linear trend of slope 0.01
* a peak starting at t=2s and during 10ms with amplitude=2;
* a WGN (white Gaussian noise) with mean=0 and sigma=1;

Perform signal detranding and denoising, respectively.