

# TIME-FREQUENCY ANALYSIS AND WAVELETS

## Exercises for Lecture 4

### Exercise 1

Download the file 'signal\_1.mat' at <http://www.hst.aau.dk/~enk/TS8>

With Matlab

- 1) Plot the Scalogram using wavelet "haar";
- 2) Plot the Scalogram using wavelet "mexican hat";
- 3) Plot the Scalogram using wavelet "morlet";
- 4) Comment and compare the results.

### Exercise 2

Download the file 'signal\_2.mat' at <http://www.hst.aau.dk/~enk/TS8>

Changing the scale and the type of the wavelet, find the best estimation of the starting time of the higher frequency sinusoid.

### Exercise 3

Take one of the signals that you have generated during the 3 previous lectures and apply different TF methods and scalogram. Discuss the difference between these different methods.