

Take the two files pi02.wav and pi11.wav collected from two different microphones in an array. The sampling frequency is 22050 Hz

1. Input these files back in Matlab using wavread.
2. Plot spectrograms.
3. Take segments of the data (frames) of various lengths and estimate the delay via cross-correlation. Determine the influence of the frame length.
4. Write code to perform generalized cross-correlation between the signals.
<http://www.mathworks.com/matlabcentral/fileexchange/loadFile.do?objectId=8581&objectType=FILE>
5. Using your estimated delays, perform delay-and-sum beamforming. Estimate the improvement in the signal using any measure you can think of. (One idea is to compare the energy in the “noise” portions and the “signal” portions). Place the output wav file on a web page.