

# EE 513 HW4

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## 1 Problem 4.1

A

The frequency domain based delay estimator performed more accurately for narrow bandwidth target signals (500-2kHz in the example), while the time domain based delay estimator performed much better for a large bandwidth signal (500-10kHz).

B

See attached image for a recording of the percentage errors recorded for multiple iterations at varying clipping levels.

## 2 4.2

It is much easier to distinguish individual voices with lower reverberation coefficients. Modified code attached.

## 3 4.3

The inverse distance microphone weights performed best when raised to a power of two. Next best was when raised to a power of 0.5.

## 4 4.4

See attached image.