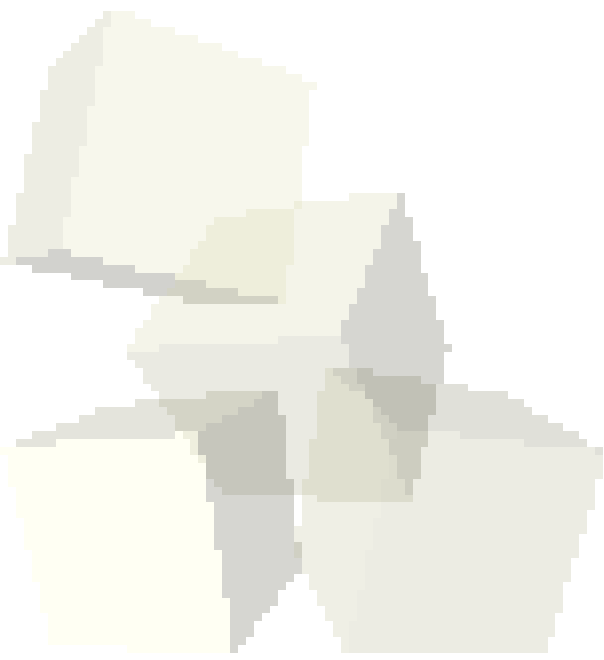




Signal Processing with FFTs

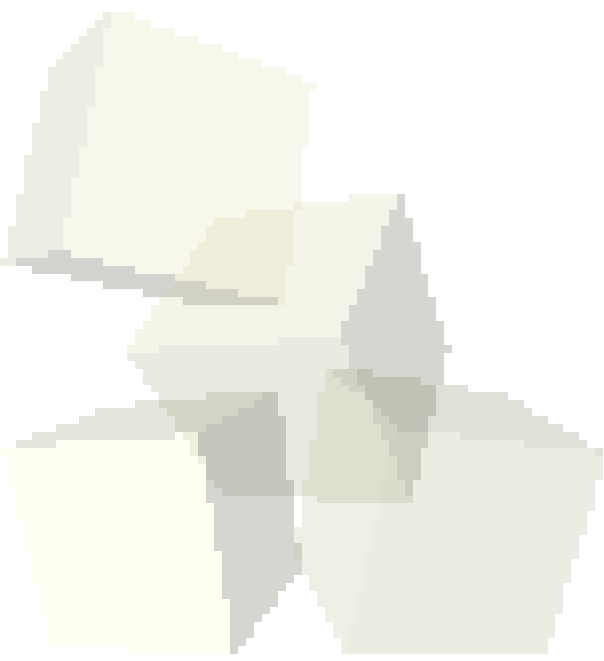
2-19-2010





Opening Discussion

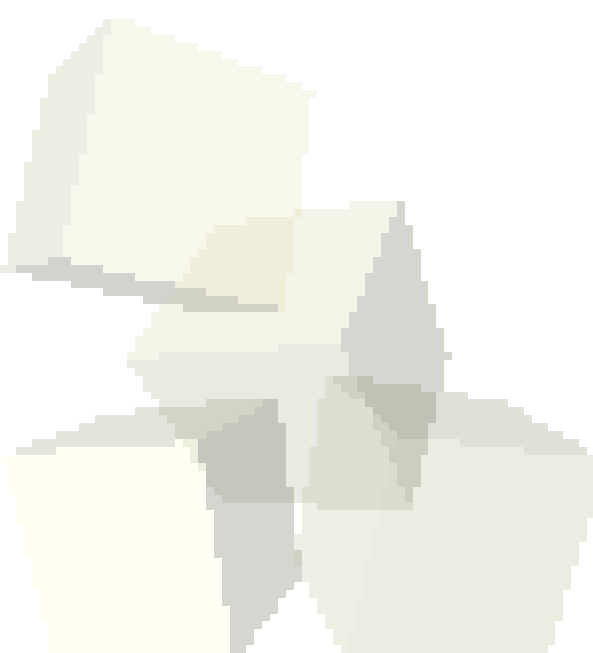
- What did we talk about last class?
- Do you have any questions about the readings?
- Mandelbrot zoom movie.





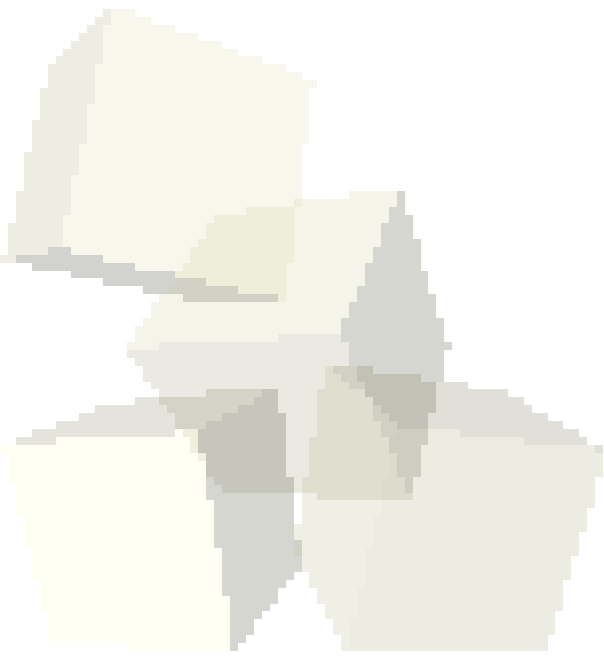
- Do you have any data that we could look at and do analysis on either with fitting or signal processing?

$$e^{ix} = \cos(x) + i \sin(x)$$





- Last time we played with the FFT using the temperature data.
- We found some interesting differences in how we pre-treat the data to get a power of 2. We should explore the reason behind that.
- I also want us to find the real frequency of the two spikes that the FFT found.





- Matlab has several functions for doing numerical integration.
 - ◆ trapz uses the trapazoid rule on data
 - ◆ cumtrapz also uses the trapazoid rule, but as a cumulative integral on data
 - ◆ quad and quadl do quadrature on a function (Simpson's rule with variable interval sizes.)
- dblquad can be used to do 2-D integration on a function.
- triplequad does 3-D integration of functions.



Closing Comments

- Assignment #4 is due on Monday.

