SIGNAL MAGNITUDES

Frequency Representation of a Signal

- To see frequency domain representation of a signal
  - abs(fft())
  - psd()
  - spectrum()
Example Checking Signal Magnitude

- Input waveform made up of two complex sinusoids. Red=real, blue=imag
- Higher frequency is half the magnitude of lower freq tone

Magnitude of abs(fft())

- magnitude of fft of signal on linear scale
Magnitude of abs(fft())

- magnitude of fft of signal on magnitude-log scale
- Note double precision floating point has 52-bit mantissa (52 bits x 6 dB = 312 dB)

Magnitude of abs(fft())

- magnitude of fft of signal on magnitude-log scale
- Higher tone is –6dB down from lower tone
Magnitude of \( \text{psd()} \)

- \( \text{psd()} \) of same signal

![Graph showing power spectrum density zoomed in.]

Magnitude of \( \text{psd()} \)

- \( \text{psd} \) zoomed in
- Higher tone is \(-6\text{dB} \) down from lower tone

![Graph showing a zoomed-in view of the power spectrum density.]