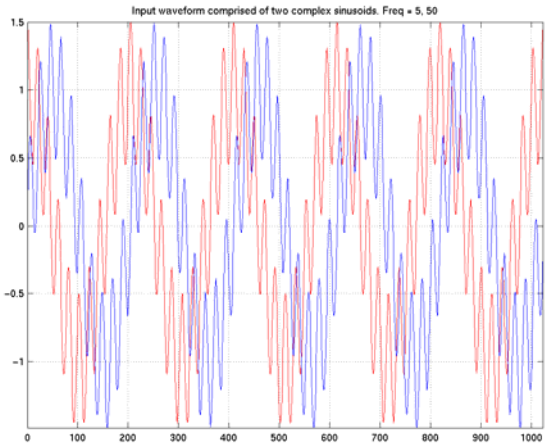
SIGNAL MAGNITUDES

Frequency Representation of a Signal

- To see frequency domain representation of a signal
  - `abs(fft())`
  - `psd()`
  - `spectrum()`

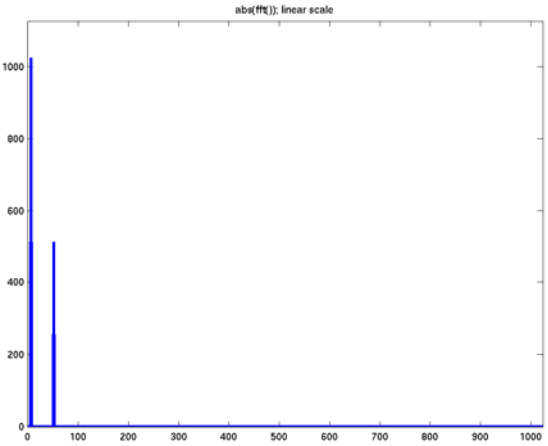
Example Checking Signal Magnitude

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



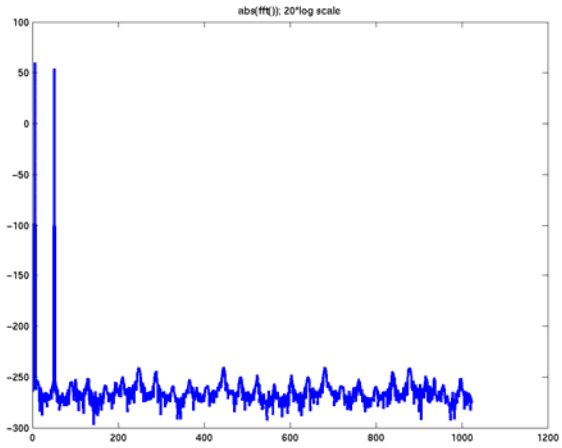
Magnitude of abs(fft())

- magnitude of fft of signal on linear scale



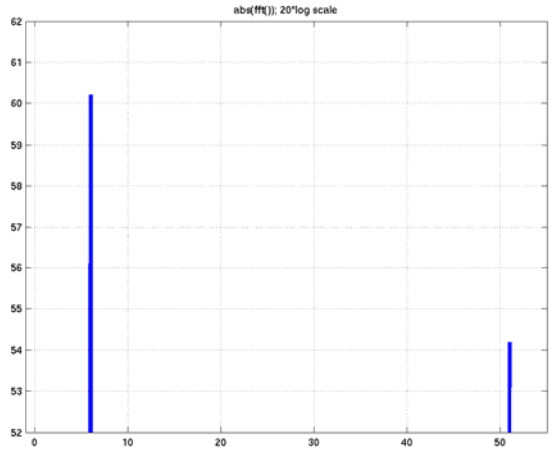
Magnitude of abs(fft())

- 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)



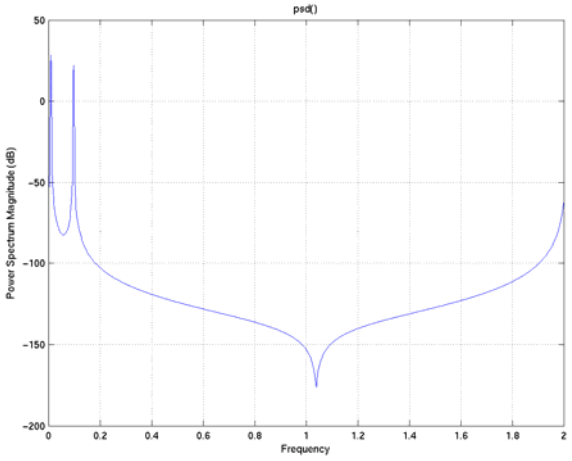
Magnitude of abs(fft())

- magnitude of fft of signal on magnitude-log scale
- Higher tone is –6dB down from lower tone



Magnitude of psd()

- psd() of same signal



Magnitude of psd()

- psd zoomed in
- Higher tone is –6dB down from lower tone