SEEING FILTER FREQUENCY RESPONSE

Filter Frequency Response (Method I)

- To see frequency response of a vector of filter coefficients
- freqz()
  - Exact frequency response
  - Very fast
Filter Frequency Response
(Method II)

• To see frequency response of a filter (method II)
• 1) Make flat (white) spectrum input signal
• 2) Send signal into filter and look at output spectrum
  - Requires many samples for accurate output (not exact)
  - Much slower
  - Sometimes the only way to see spectrum (e.g., an arbitrary signal, not a filter response)
  - Example
    • `in = rand(1, 100000) - 0.5;`
    • `out = conv(coeffs, in) + 0.25; % Hypothetical ½ LSB bias`
    • `abs(fft(out))`
    • `psd(out)`
    • `spectrum(out)`