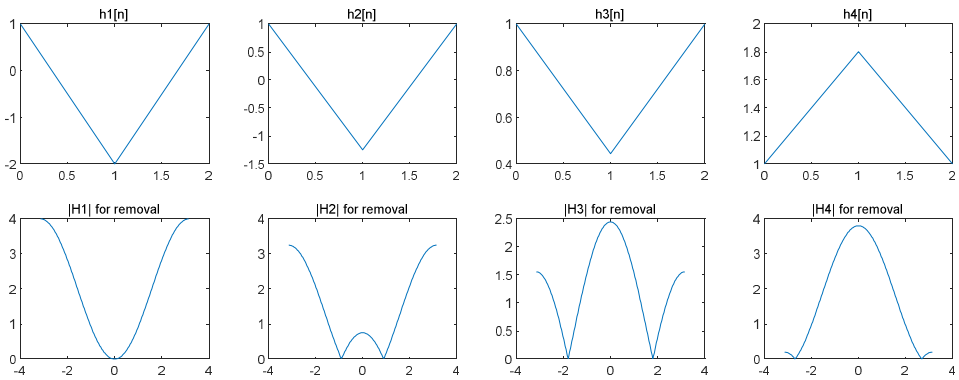
BMED311 Week09 Frequency Response Hands-On

LP12.FrequencyResponse.pdf

1. Read and code 1.3 and 1.4.
2. Do 2.1-2.3.
3. Read 3.1 before (a).

MP03.ToneRemoval.pdf

4. Load the file 'SunshineSquare.wav'. Play the signal xx.
5. Display spectrogram of the signal xx. Figure out what frequencies seem to make noise and when the noise starts from. (hint: Use the figure menu 툴 > 데이터팁)
6. Convert noise frequencies from Hz to $\hat{\omega}$. Using the filter equation in 3, make impulse responses $(h_1[n], h_2[n] \ldots)$ for the noise frequencies.
7. Make frequency responses of the impulse responses in 6 and display them all within the same figure window.



8. Generate yy1 by apply the impulse responses in 6 on to xx in sequential order (cascaded system). Show the spectrogram of yy1 and play it.
9. Generate composite hh by doing convolutions with all h[n]'s. Show hh and its frequency response(magnitudes) within the same figure window.
10. Generate yy2 by applying hh onto xx. This time apply hh only in the noisy region (hint: use fs for indexing). Show the specgtrogram of yy2 and play it.