

# Mobile Communications

## Problem Set 2

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1. Name and explain the attributes of radio wave propagation. How does the transition from a light to a denser medium impact the wave propagation? How does the radio wave frequency impact its propagation? Name three general classes of waves classified through the frequency range.
2. Explain the problems occurring with multipath propagation. How can these problems be approached?
3. In which communication scenarios is the doppler shift considered harmful?
4. Explain the Shannon limit for AWGN channels. Next, consider an AWGN channel with 4 kHz bandwidth, a signal-to-noise ratio (SNR) of 20 dB and calculate the channel capacity.