

ECE 6130 – Circular Waveguides

Portfolio

- 1) (part of 3.12) Derive the TM_{mn} modes in a LOSSY circular waveguide, their cutoff frequencies, and velocities of propagation.
- 2) (part of 3.13) Specify the cutoff frequencies for the first four TE and first four TM modes of a circular waveguide with radius 0.8cm. Draw a graph of frequency vs. Propagation showing the frequencies at which each of these modes will propagate. Is there a frequency range in which only one mode will propagate? If so, what is the range and what mode is propagating.

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VIEWGRAPH: Bessel Functions

See Handwritten Notes (too many equations!)