

ECEn 665
Antennas and Propagation for Wireless Communication

Homework #7

Due Feb. 6, 2023 at the beginning of class (may be turned in late for half credit)

1. Implement the method of moments for Hallén's integral equation. Use the method of moments to compute the current distribution on a half-wave dipole. Plot the magnitude of the current along the antenna together with the sinusoidal current model.
2. Add post-processing to compute the radiation pattern of the half-wave dipole from the current distribution. Plot this pattern together with the pattern approximations from the previous homework assignment.
3. Compute the input impedance as a function of electrical length using the moment method. Plot both the real and imaginary parts. Add to the plot the radiation resistance from the sinusoidal current model. Set the range of axes sensibly so that important features of the curves are visible.