The Linear Dipole Antenna

Mr. Rex Belli
Junior Physics Major, CSUC

Abstract: The linear antenna, sometimes called the dipole antenna, is arguably the simplest radiator put into practice. Understanding its basic radiative properties is essential in understanding and designing more complex antenna arrays. In this talk I will introduce the basic electromagnetic features of interest in any radiation field, i.e. radiative power and field strength as a function of angle and radial distance, as well as focusing on the particular methods and results of calculation for a linear dipole antenna. We find the curious result that all ‘half-wavelength’ antennas have the same radiative impedance: ~73Ω. The physical reason for this: the phase difference between different current elements in the source antenna, will be discussed.