

Koch-shaped dipoles are introduced for the first time in a wideband antenna design and evolve the traditional Euclidean log-periodic dipole array into the log-periodic Koch-dipole array (LPKDA). Antenna size can be reduced while maintaining its overall performance characteristics. Observations and characteristics of both antennas are discussed. Advantages and disadvantages of the proposed LPKDA are validated through a fabricated proof-of-concept prototype that exhibited approximately 12% size reduction with minimal degradation in the impedance and pattern bandwidths. This is the first application of Koch prefractal elements in a miniaturized wideband antenna design.