

Abstract

In this paper, a hybrid Taguchi-genetic algorithm (HTGA) is used to optimize Yagi-Uda antennas. The method combines the traditional genetic algorithm, known to have a powerful global exploration capability, with the Taguchi method, which can exploit the optimum offspring and consequently, enhance the genetic algorithm. The aim is to devise antenna geometrical parameters that allow the antenna to simultaneously improve multiple performances such as gain, sidelobe level, and input impedance. Thus, not only will a new antenna configuration be found, but the demonstration of the ability of the HTGA method to design antenna structures with more than one goal is investigated as well