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ANTENNA ARRAY OPTIMIZATION USING HEURISTIC ALGORITHMS FOR SMALL SATELLITES

Abstract

In a century characterized for showing an exponential growth in terrestrial communications such as fiber optical cables, the use of small-sized satellital platforms capable of transmitting signals whitin the higher end of the frequency spectrum (X, Ku, Ka, and V bands) having enough power for direct transmission and mobile services is required. In this paper, the results of applying evolutionary computational algorithms in the optimization of the number and dimensions of radiating elements, as well as the distance separating them in a given antenna array are shown. This work aims to find a better way to assamble antenna arrays with omnidirectional radiation patterns preventing blind spots and minimizing signal fading.