

**Abstract:**

In this article a new approach is used to improve the performance of antenna arrays. The antenna array performance is improved when its directivity is increased and its side lobes are decreased. To do this, a concept of array hybridization (mixing two distinct arrays) is presented and applied to uniform arrays to generate a new array for satisfying the requirement. Two new arrays are generated using the proposed principle. The first is obtained from two arrays with different number of elements (UUDNH). The second generated array is based on the use of two arrays with different spacing between their elements (UUDdH). The obtained arrays parameters (array factor, side lobe levels, directivity and excitation coefficients) are given in closed form expressions. Furthermore, performances of the proposed arrays exceed that of Tschebyscheff arrays with the same number of elements.