

Density Tapering Statistico Per La Sintesi Di Thinned Arrays Lineari E Planari

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Abstract

Il thinning (assottigliamento) di array è una tematica studiata da molti decenni per la sintesi di antenne di grandi dimensioni. Recentemente, i thinned array hanno riscontrato notevole interesse sia in ambito scientifico sia applicativo (ad es., comunicazioni satellitari, radioastronomia) in quanto, a differenza dei più classici phased array, utilizzano un ridotto numero di elementi con eccitazioni uniformi (solitamente unitarie). I vantaggi di questo tipo di approccio sono notevoli. Da un lato, la riduzione del numero di elementi risulta in notevoli vantaggi in termini economici e di peso. Dall'altro, il fatto di utilizzare elementi uniformemente alimentati permette di semplificare la struttura circuitale della rete di alimentazione e quindi la complessità. In questo ambito, gli approcci più comuni sono di tipo statistico (random arrays) o sono basati su tecniche euristiche. Questo progetto ha l'obiettivo di implementare la tecnica proposta in letteratura ed applicarla alla sintesi sia di array lineari sia di array planari.

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