

# Abstract

Unit circle representation techniques such as Schelkunoff null placement method have been extensively used to synthesize uniformly spaced linear arrays. In this work, it is attempted to extend the unit circle representation approach to synthesize nonuniformly spaced linear arrays with some desired null directions and minimum achievable sidelobe level. The problem is formulated as an optimization task upon which Taguchi method is employed to solve for the set of element positions. Illustrative examples are included to demonstrate the design effectiveness and flexibility for modern wireless communication system applications