A new pattern synthesis technique for shaped-beam array antennas of stair-step radiation patterns is discussed. It is well known that several methods are reported to design array synthesis for the generation of shaped beam patterns. It is found that none of them are optimum. However, in this present work, a new swarm intelligence method Modified Differential Evolution based on harmony search algorithm is applied for their optimization technique. The proposed method is most reliable, accurate and best optimization technique so far. The optimum stair-step radiation patterns are numerically computed and the results have been shown that the method improves the performance of the algorithm significantly.


Index Terms

Computer Science  Wireless

Keywords
Antenna arrays  Pattern synthesis  desired shaped beam  Modified Differential Evolution algorithm
Stair step patterns.