

Linear Antenna Array Synthesis for Wireless communications using Particle Swarm Optimization

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Abstract— In this paper, the synthesis of linear antenna array for wireless communications is described using particle swarm optimization (PSO). PSO is applied to optimize amplitude excitations for performance improvement such as minimum side lobe level and null control with periodic spacing between the elements. Two design examples are considered and results are illustrated. In comparison with the conventional linear array antenna radiation pattern, this approach yields lower side lobe levels and advanced null control.

Keyword— Linear antenna array, PSO, side lobe level, null control, radiation pattern, amplitude excitations.



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