

Time-Modulated Antennas and its Synthesis using Evolutionary Algorithms

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Abstract:

With the increasing demand for modern technology in communication systems, antenna arrays have attracted a lot of interest in the areas of radio broadcasting, space communication, weather forecasting, radar and imaging. Antenna array with controlled low or ultra-low side lobes and electronics beam steering is of particular importance and it has been an ongoing challenge for antenna design engineers for the past few decades. These benefits can be achieved using a complicated feed network and expensive phase shifters and can only be found in specialized areas. It has motivated the research into the development of low-cost and straightforward antenna systems for commercial applications. This talk will be related to the recent advancement of the antenna array called 4D or time-modulated antenna arrays and the possible exploration domain. Furthermore, synthesis of the radiation pattern is also equally crucial for reducing undesired radiation to reduce interference. Hence some of the recent optimization techniques are intended to discuss for the synthesis of the radiation pattern.

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