

## عنوان مقاله:

Development a New Technique Based on Least Square Method to Synthesize the Pattern of Equally Space Linear Arrays

## محل انتشار:

ماهنامه بین المللی مهندسی، دوره 32، شماره 11 (سال: 1398)

تعداد صفحات اصل مقاله: 7

## نویسندگان:

Mohammad G. H. Alijani - *Electrical Engineering Department, Ferdowsi University of Mashhad, Mashhad, Iran*

Mohammad H. Neshati - *Electrical Engineering Department, Ferdowsi University of Mashhad, Mashhad, Iran*

## خلاصه مقاله:

Using the sampled data of a desired pattern is a common technique in pattern synthesizing of array factor (AF) of antenna arrays. Based on the obtained data matrix, Least Square Method (LSM) is used to calculate the exciting coefficient of array elements. The most important parameter, which involves the accuracy and complexity of calculation, is the sampling rate of the desired pattern. Classical Least Square Method (CLSM) uses a linear combination of the samples, which provides low accuracy. In this paper, a new method is proposed by introducing a correction factor (CF) to increase the accuracy of the pattern estimation, while the design complexity is not increased basically. A normalized error between the desired and estimated pattern is considered and its variation versus CF is investigated. It is shown that for an optimum value of correction factor,  $CF_{opt}$ , the defined error is minimum. The proposed method is examined for a few well-known arrays and the obtained results are reported and compared with those of classical LSM. It is shown that the introduced method accurately estimates the required pattern of array (factors of equally spaced linear arrays (EALAs).

## کلمات کلیدی:

antenna array, Least Square Method, Radiation Pattern, Pattern Synthesis

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/962717>

