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DET TALKS

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*Unlock the potentials of
Large-Element-Spacing Antenna Arrays:
Grating-Lobe Suppression, High Gain,
Low Sidelobe, and Beam Scanning*



INFO

12 July 2024, 02:00 PM
Meeting Room DIMEAS P3
coffee break after the talk

ABSTRACT

Antenna arrays with large-element-spacing (LES, $>1\lambda$) offer advantages such as lower cost and less structural complexity. However, they typically suffer from high-level grating lobes, limiting their applications. Therefore, grating-lobe suppression technology in low-profile, high-gain planar antenna arrays has long been an interesting focus for antenna researchers.

In this talk, I will introduce a novel method to eliminate or reduce grating lobes in sparse, thinned, and uniformly large-element-spacing (LES) antenna arrays. Additionally, The radiation performance of the LES array, focusing on achieving high gain, high aperture efficiency, low sidelobes, and effective beam scanning, has been investigated. The results are promising and will be presented in detail. While our investigation is based on uniformly spaced LES antenna arrays, the conclusions drawn can also be applied to non-uniform, sparse, or thinned arrays.