

Electronically scanned arrays (ESAs) and K-space gain formulation

Dana, Roger A., author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20508128&lokasi=lokal>

Abstrak

This book fills in details that are often left out of modern books on the theory of antennas. The starting point is a discussion of some general principles that apply to all electronic systems and to antennas in particular. Just as time domain functions can be expanded in terms of sine waves using Fourier transforms, spatial domain functions can be expanded in terms of plane waves also using Fourier transforms, and K-space gain is the spatial Fourier transform of the aperture weighting function. Other topics discussed include the Discrete Fourier Transform (DFT) formulation of antenna gain and what is missing in this formulation, the effect of sky temperature on the often specified G/T ratio of antennas, sidelobe control using conventional and novel techniques, and ESA digital beamforming versus adaptive processing to limit interference.