Abstracts

Extraction of Waveguide Scattering Features Using Joint Time-Frequency ISAR

L.C. Trintinalia and H. Ling. "Extraction of Waveguide Scattering Features Using Joint Time-Frequency ISAR." 1996 Microwave and Guided Wave Letters 6.1 (Jan. 1996 [MGWL]): 10-12.

A new joint time-frequency ISAR algorithm that combines the conventional ISAR processing with the joint time-frequency signal representation is presented. The adaptive spectrogram, applied to the range axis of the ISAR image, is used as the time-frequency processing engine. The algorithm is tested using the chamber measurement data from a scale model airplane. The results show that the nonpoint scattering mechanisms due to the waveguide-like engine inlet can be seamlessly removed, leading to an enhanced ISAR image consisting only of point scatterers. Furthermore, the extracted inlet features are displayed in the frequency-aspect plane and show distinct waveguide cutoff features.

❑ Return to main document.