

SESSION 20: PLANAR TRANSMISSION LINE STRUCTURES

SESSION CHAIRMAN: J. M. OWENS  
UNIVERSITY OF TEXAS AT ARLINGTON  
ARLINGTON, TX

This MIC techniques sessions presents analysis techniques and new circuit topologies for microstrip and coplanar circuit media.

The first paper by C. Chan and R. Mittra of the University of Illinois, Urbana, Illinois, uses spectral iterative techniques in with the conjugate gradient method employing the quasi-static approximation to analyze multiconductor microstrip lines. New results for three and more coupled lines are presented.

The second paper by E. J. Glandorf and I. Wolff of Duisburg University, Duisburg, F.R. Germany, summarizes the development of a spectral domain field analysis of two coupled microstrip lines coupled by zigzag slot. The theory and results are presented with applications for design of a Podell coupler as well as interesting applications for stop band filter structures.

The third paper by V. Foud Hanna and D. Thebault of Centre National d'Etudes des Telecommunications, Issy Les Moulineaux, France, outlines a study of asymmetric coplanar waveguides. Experimental and theoretical results for alumina substrates are presented.

The fourth paper by M. Malkomes, G. Kadisch, and H. J. Schmitt of Rheinisch-Westfaelische Technische Hochschule Aachen, Aachen, F. R. Germany, describes a complete circuit analysis and optimization of ring-star 5 port components. External matching by line segments and lumped capacitances is incorporated with improved performance.

The last paper by N. G. Alexopoulos, and Dr. Jackson of UCLA describes the investigation of composite dielectric microstrip dielectric layers, for printed circuit microstrip antennas. A combination of layers (superstrate) is shown to yield 100% radiation efficiencies.