Abstracts

Autoregressive (AR) Spectral Estimation Technique for Faster TLM Analysis of Microwave Structures

C. Eswarappa and W.J.R. Hoefer. "Autoregressive (AR) Spectral Estimation Technique for Faster TLM Analysis of Microwave Structures." 1994 MTT-S International Microwave Symposium Digest 94.2 (1994 Vol. II [MWSYM]): 701-704.

A spectral estimation technique based on the Autoregressive (AR) method has been successfully implemented to increase the eficiency of the TLM method. It can be used to compute the full time-domain response from a relatively short segment of the early TLM response. It was found that the Least-Square technique of estimating the AR parameters requires a shorter time record than solving the Yule-Walker equations through the Levinson-Durbin algorithm. Application to a three-section waveguide bandpass filter at 35 GHz shows that this technique gives very accurate scattering parameters with a computational savings of up to five times.

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