Abstracts

Computer-aided tuning of microwave filters using fuzzy logic (Dec. 2002 [T-MTT])

V. Miraftab and R.R. Mansour. "Computer-aided tuning of microwave filters using fuzzy logic (Dec. 2002 [T-MTT])." 2002 Transactions on Microwave Theory and Techniques 50.12 (Dec. 2002 [T-MTT] (Special Issue on 2002 International Microwave Symposium)): 2781-2788.

This paper introduces an algorithm based on fuzzy logic for tuning microwave filters. The approach is demonstrated by considering two filters: a four-pole Chebyshev filter and an eight-pole elliptic filter. Each filter is then detuned to perform two examples: one is slightly detuned and the other is highly detuned. In both cases, the approach has proven to be very efficient in identifying the filter elements that cause the detuning. The fuzzy rules are extracted from sampled data. The expert rules could also be added. The algorithm can be applied to any microwave circuit tuning problem.

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