

Rational Approximation of Frequency Domain Responses via Relaxed Vector Fitting Algorithm

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Experience with the vector fitting algorithm for rational approximation of frequency domain responses has in some situations revealed problems with slow convergence. A typical example is the fitting of noisy responses. The problem is linked to a high frequency asymptotic condition of the nontriviality constraint used in the vector fitting formulation. Relaxation of the non-triviality constraint is shown to be an effective solution to this problem. Application to selected examples demonstrates a significant improvement of performance in terms of convergence speed and the accuracy of the final result.