Abstracts

Fast computation of modified Mathieu functions applied to elliptical waveguide problems

M. Schneider and J. Marquardt. "Fast computation of modified Mathieu functions applied to elliptical waveguide problems." 1999 Transactions on Microwave Theory and Techniques 47.4 (Apr. 1999 [T-MTT]): 513-516.

Modified Mathieu functions of the first kind and integer order are expanded in power series, which allow an accurate and timesaving computation. The recurrence relations for the computation of the expansion coefficients are derived and can be easily implemented in computer code. Compared to the calculation with series of Bessel function products, the method presented here is simpler and faster. The efficiency of the method is demonstrated by the computation of eigenmodes of elliptical waveguides.

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