Abstracts

A Comparison of Two Numerical Computer Methods for Solving TEM Field Problems

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The use of the computer as a primary tool in semi- or fully-automatic network design is currently of considerable interest. Perhaps of less interest, but nonetheless quite important, is the use of computers as a primary tool in solving complex electromagnetic field problems in order to obtain useful microwave design data. In the latter case, for two-dimensional TEM problems, the integral and difference equation methods are those most often programmed on a computer to obtain the needed data. An engineer wishing to use one of these methods to solve some complex field problem is faced, at the onset, with important, practical questions: Which method requires less analytical preparation? Which method requires less preparation for programming, and takes less time to program? Which method will cost less oveall in obtaining the data to the required accuracy? What are some of the particularly bad problem spots for which a given method may fail to give accurate results?

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