Abstracts

Modeling of transmission lines by the differential quadrature method

The differential quadrature (DQ) method is employed to model transmission lines. The DQ method is a direct numerical technique. It is based on the ideas that the derivative of a function with respect to a coordinate direction can be expressed by a weighted linear sum of all function values at every mesh points along that direction. To achieve the same accuracy, the DQ method requires fewer grid points than other numerical methods such as finite-different method. This method leads to passive macromodels. As a direct numerical method to model transmission lines, it provides general formulation, which can be applied in extensive cases. Numerical results show that high accurate solutions can be calculated rapidly.

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