Abstracts

A new time domain near field to far field transformation for FDTD in two dimensions

An algorithm of 2-D near field to far field transformation for the finite difference time-domain (FDTD) method is proposed in this paper. The transient far field response of a two-dimensional structure is obtained straightforwardly in the time domain without Fourier transformation. The abnormal integral for time in 2-D time domain Green function is transformed to a normal form by means of analytic method. Besides, by use of quantifying the positions of equivalent sources and arranging the time series, the calculations of the time integrals of equivalent sources are converted to the calculation of matrix-vector multiplying. A good agreement between both results has been observed.

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