

An FDTD impedance boundary condition and its application to waveguide discontinuity analyses

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A new method for calculating the scattering parameters of metal waveguide structures based on the FDTD field simulation is presented. In this method, a type of the boundary condition called the Impedance Boundary Condition (IBC) is adopted at the circuit terminating ports. It allows us to excite the circuit with an arbitrary mode and terminate all ports by well-defined impedances. This implementation enables us to calculate the scattering parameters efficiently and rigorously.

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