Abstracts

High-Frequency Reciprocity-Based Circuit Model for the Incidence of Electromagnetic Waves on General Waveguide Structures

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In the present contribution we construct a high-frequency circuit model for the excitation of eigenmodes in general waveguides due to externally impinging electromagnetic waves. The circuit model, consisting of distributed sources in a transmission line model, is based on Lorentz's reciprocity theorem. The classical quasi-TEM solution of this problem is found as a special case from the full-wave model. The theory is illustrated with numerical examples of electric dipoles radiating above thick coupled lossy microstrip lines.

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