Abstracts

A Simple Formulation for Complex Modes of Image Lines

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We present here an analysis of a shielded image line by the simple method of effective dielectric constant. The concept of negative effective dielectric constant is utilized for a below-cutoff mode, so that the occurrence of backward flow of energy and the existence of complex modes in such a class of waveguides become physcially transparent via the familiar physical phenomena associated with the class of dielectric-plasma structures. The merits of this method is its simplicity and general applicability to a large class of structures. Numerical results are shown to illustrate the accuracy obtainable from the present approach.

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