Generalized Dispersion Analysis and Spurious Modes of 2-D and 3-D TLM Formulations

The general dispersion relations are derived for the 2-D TLM shunt and series meshes and the 3-D TLM expanded and condensed node meshes. Implicit in the resulting dispersion relations are both their physical and spurious modal solutions. It is demonstrated that of the four schemes, only the 3-D expanded node mesh is free of detrimental spurious solutions.

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