

# Abstracts

## Propagation and Circuit Characteristics of Inductively Coupled Superconducting Microstrip

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*J.M. Pond, P.F. Weaver and I. Kaufman. "Propagation and Circuit Characteristics of Inductively Coupled Superconducting Microstrip." 1990 Transactions on Microwave Theory and Techniques 38.11 (Nov. 1990 [T-MTT]): 1635-1643.*

The propagation characteristics and circuit properties of two inductively coupled superconducting transmission lines are studied. An expression for the attenuation of the coupled-line modes is derived for the case of low loss. It is found that for transmission line geometries of practical interest the low-loss expression agrees well with the more general numerical solution. The numerical solution is used to determine the dispersion characteristics of inductively coupled lines as a function of the superconductor thickness and the operating temperature. An equivalent circuit, with the same dispersion equation, is presented along with the relationship between the circuit element values and the physical parameters of the line. The characteristic impedances of the two dominant coupled-line modes are derived from the equivalent circuit expressions.

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