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Partial neutral functional differential equations. (English) Zbl 0817.35119
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Summary: We discuss a system of partial neutral functional differential equations which is a model for a continuous circular array of resistively coupled transmission lines with mixed initial-boundary conditions. We give the basic existence and uniqueness results, properties of the solution operator, Hopf bifurcation and conditions for the stability and instability of periodic orbits. The effects of perturbations, including space discretizations are also considered. Space prevents the inclusion of detailed proofs.

MSC:

35R10 Partial functional-differential equations
35M10 PDEs of mixed type

Cited in **2** Reviews
Cited in **74** Documents

Keywords:

coupled transmission lines; mixed initial-boundary conditions; existence; uniqueness; Hopf bifurcation; stability; periodic orbits