NEW RECIPROCITY THEOREMS IN ELECTROMAGNETISM (I)

BY

HUGO ROSMAN

Abstract. Some reciprocity theorems in an electromagnetic field which evolves, in variable state, in a linear, homogeneous, isotropic, lossesless and motionless medium are established. These relations may be obtained associating to the first order derivatives with respect to time of Maxwell's equations, the vectorial identities (2), (3).

Key Words: Electromagnetic Field; Maxwell's Equations; Derivatives with respect to Time; Vectorial Identities.

CYLINDRICAL STRUCTURE IN INCLINED MAGNETIC FIELD

BY

DELIA ANNE-MARIE ANDRONE,
ADRIANA-ELENA PRISĂCARU and I. ANDRONE

Abstract. A cylindrical structure placed in an inclined magnetic field is examined. Starting from the Maxwell's equations the Helmholtz and Laplace equations are obtained and solved for different regions.

Key Words: Cylindrical Structure; Magnetic Field; Maxwell's Equations; Helmholtz Equations.

ABOUT OPTIMALITY OF NON-UNITARY FILTER BANKS

BY

DANIELA TĂRNICERIU and VALERIU MUNTEANU

Abstract. The energy compaction capabilities of filter banks in subband coding related to quantization error is investigated. The optimality of filter banks in subband coders in terms of coding gain for a given input power spectral density is derived. It will be shown that the coding gain achieved in nonunitary filter banks is superior to that for the unitary ones.

Key Words: Filter Banks; Subband Coding; Energy Compaction.