BULETINUL INSTITUTULUI POLITEHNIC DIN IAŞI
Publicat de
Universitatea Tehnică „Gheorghe Asachi” din Iaşi
Tomul LV (LIX), Fasc. 3, 2009
Secția
ELECTROTEHNICĂ. ENERGETICĂ. ELECTRONICĂ

THE TRANSMISSION OF ACTIVE POWER WITH MAXIMUM EFFICIENCY, IN HARMONIC STEADY-STATE, THROUGH A LINEAR, GENERAL, NON-AUTONOMOUS AND PASSIVE FOUR-POLE, HAVING THE COUPLING BRANCH BETWEEN (*1*), (*1'*) AND (*2*), (*2'*) GATES, NON-LINEAR INERTIAL AND PASSIVE

BY

HUGO ROSMAN

Abstract. The expressions of the receiver's equivalent parameters of a general, linear, non-autonomous and passive four-pole, having the coupling branch between (*1*), (*1'*) and (*2*), (*2'*) gates non-linear inertial and passive are determined when the active power is transmitted through the four-pole, in harmonic steady-state, with maximum efficiency, to a linear and passive receiver.

The coupling branch between (*1*), (*1'*) and (*2*), (*2'*) gates is constituted by in series connexion of a resistor, a coil and a capacitor, all three non-linear inertial.

In the same time the expression of the maximum efficiency, in the studied case, is determined.

The obtained expressions are functions of four-pole's fundamental parameters, $\underline{A}_{ij}$, (i,j = 1, 2, 3), and of the coupling branch parameters.

Key words: Linear, general, non-autonomous and passive four-pole; transmission of active power with maximum efficiency; harmonic steady-state.