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ON THE EQUIVALENT COMPLEX IMPEDANCE AT THE INPUT GATE OF A LINEAR, NON-AUTONOMOUS AND RECIPROCAL TWO-PORT, SUPPLYING, IN HARMONIC STEADY-STATE, A NON-LINEAR INERTIAL AND PASSIVE RECEIVER

BY

HUGO ROSMAN

Abstract. The expressions of equivalent resistance and reactance at the input gate of a linear, non-autonomous and reciprocal two-port, in harmonic steady-state, are established, when the two-port supplies a non-linear inertial and passive receiver. The differential equations satisfied by function $X_2(R_2)$ are established too when either the equivalent resistance or the equivalent reactance at the input gate of the two-port has extreme values; R_2 and X_2 represent the equivalent parameters of the receiver. These equations are non-linear, of first order and their solutions are obtained analytically in the particular case when the $\underline{A}_{22}$-fundamental parameter of the two-port is null.

Key words: linear, non-autonomous and reciprocal two-port; harmonic steady-state; non-linear inertial and passive receiver; equivalent resistance and reactance at the input gate of the two-port; differential equations satisfied by function $X_2(R_2)$ in cases when either R_2 or X_2 has extreme values.