

EXPLANATION OF PROBLEMS OCCURRING IN THE ANALYSIS OF NONLINEAR CIRCUITS WITH THE USE OF VOLTERRA SERIES

Summary - This paper is devoted to the explanation of problems occurring in the analysis of nonlinear circuits with the use of Volterra series. Among others, it has been shown here that the models of basic elements of nonlinear circuits, which are derived in the modified admittance matrix method for nonlinear circuits, have the same form as those derived with the use of the admittance matrix and the so-called probing signal. The problem of occurrence of Dirac impulse products in different kinds of analyses performed with the use of Volterra series has been addressed as well. It has been shown that such the analyses can be always put into equivalent forms, avoiding occurrence of Dirac impulse products, what proves their correctness.