

OPOLE UNIVERSITY OF TECHNOLOGY
DEPARTMENT OF ELECTRICAL, CONTROL AND COMPUTER
ENGINEERING

Ph. D. Thesis

on:

An application of multivariable control algorithms in the problem of efficient
work of computer networks with packet switching

by

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ABSTRACT

The Ph.D. thesis presents a new approach to the problem of efficient work of computer networks with packet switching. It is shown, that through an application of multivariable control dedicated to linear time-invariant systems described by an input-output model in discrete-time domain we can manage the queuing process in the above-mentioned networks in an effective way. A connection of the identification and adaptation mechanisms with an advanced mathematical calculus, mainly in the context of the applied control laws, resulted in a new author's method confirmed by the simulation tests. Accepted by the international control community a publication from the ISI Master Journal List related to the subject discussed under this doctoral dissertation can testify to the current problems contained here.