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TITLE: MATRIX-NETWORK GENERALIZATION OF INPUT-OUTPUT MODELLING

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ABSTRACT:

In this paper we represent a new approach to modelling and analysis of IO-systems going from a general formalism recently introduced by author for modelling of complex systems in wide sense. Applied to IO-systems, this formalism enables to deal with nonlinear analysis of a IO-system by more deep detalization of interactions between units(departments, organizations, regions,sectors etc.) representing they by vector-functions of several vector variables and their various compositions reflecting real dependencies and relations within the system. In case of polynomial vector-functions we come to a new matrix formalism in which the coefficient-matrices are sufficiently multidimensional and are connected in a matrix network means of appropriate matrix operations.