Environmental stochastic input-output model and its deterministic equivalent

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Some stochastic Leontief-Ford models of ecological-economic interaction and their deterministic equivalents are proposed. A theory of stochastic variants of ecological-economic structural-type functions is developed. Appropriate algorithms are developed.
Of great significance is the consideration of uncertain and stochastic factors in investigation interbranch relations in economy, especially under the strong influence of ecological factors. This is first explained by the integrity of interbranch system, which implies the fact that an effect of stochastic factors on a branch is extended to the majority of the other along the chain of interbranch relations (multiplicative effect). In this connection, the problem of development of approaches to the economic system modeling that would most completely reflect processes occurring in such system and take into account stochastic factors is extremely topical. Some stochastic models of ecological-economic interbranch balance that are proposed below are traditionally called Leontief-Ford models in the scientific literature, I. e., are models of a definite class of ecological-economic models.