

Inverse Probabilistic Problems

A. D. Nakhman

Tambov State Technical University, Tambov, Russia

Keywords: inversion technique; variability principle; stochastic models.

Abstract: As part of the development of a stochastic content-methodological approach, it is proposed to supplement the corresponding problem systems with inverse problems. Implementation of this proposal opens the way to more comprehensive interpretations of stochastic modeling results. The inversion mechanism utilizes the variability principle, described in detail and illustrated with examples. An important function of the inversion process is the ability to ensure specified probability boundaries for the output states of a stochastic model. A case of Bayesian reversibility is highlighted, within which the probabilities of a priori hypotheses are reassessed. It is argued that the inversion technique represents an extension of the technology of coarse-grained didactic units to a stochastics course.