Risk management technologies: with logic and probabilistic models

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Abstrak

This book presents intellectual, innovative, information technologies (I3-technologies) based on logical and probabilistic (LP) risk models. The technologies presented here consider such models for structurally complex systems and processes with logical links and with random events in economics and technology. The volume describes the following components of risk management technologies : LP-calculus, classes of LP-models of risk and efficiency, procedures for different classes, special software for different classes, examples of applications, methods for the estimation of probabilities of events based on expert information. Also described are a variety of training courses in these topics. The classes of risk models treated here are : LP-modeling, LP-classification, LP-efficiency, and LP-forecasting. Particular attention is paid to LP-models of risk of failure to resolve difficult economic and technical problems. Amongst the discussed procedures of I3-technologies are the construction of LP-models, LP-identification of risk models; LP-risk analysis, LP-management and LP-forecasting of risk. The book further considers LP-models of risk of invalidity of systems and processes in accordance with the requirements of ISO 9001-2008, LP-models of bank operational risks in accordance with the requirements of Basel-2, complex risk LP-models for preventing ammunition depot explosions, enterprise electric power supply systems, debugging tests of technical systems, etc. The book also considers LP-models of credit risks, securities portfolios, operational risks in banking, conteraction of bribes and corruption, etc. A number of applications is given to show the effectiveness of risk management technologies.