

## ABSTRACTS

### Management Information System and Devices. N 149. 2009

---

UDC 621.391.175

**Mathematical model of reliability of the restored technical system** / N.S. Podzikin // Management Information System and Devices. 2009. N 149. P.4-8.

A discrete mathematical model of the restored technical system is built for the decision of task of maintenance of its reliability at the optimum level. A markov process is fixed in basis of model. Optimum strategy of management is calculated for the stationary mode.

Ref.: 7 items.

---

UDC 004.942:621.6:622.691

**Stochastic model of the quasi-stationary not isothermal mode of transport natural gas in gas-transport system** / A.D.Tevyashev, A.A.Mamedova, V.A.Frolov // Management Information System and Devices. 2009. N 149. P. 9-17.

Object of research of the given work is the problem of mathematical modelling quasi-stationary not isothermal modes of transport of natural gas in gas-transport systems. For increase of adequacy of model the stochastic approach is used.

Ref.: 7 items.

---

UDC 681.326:519.613

**Infrastructure for associative matrix logical analysis** / V.I. Hahanov, O.A. Guz, Tieceura Yves, Ngene Christopher Umerah, V.I. Kopanev // Management Information System and Devices. 2009. N 149. P.18-29.

Proposed infrastructure is designed for the logical analysis of associative tables (matrices) to analyze the interaction of an input vector and n-dimensional algebra-logical space specified by using the ordered and structured tables for problem-oriented data, which are the associative models of logical object behavior. To determine the interaction of vectors in the algebra-logical space a universal quality criterion is developed. It allows finding and evaluating a quasi-optimal solution for the problems of associative and logical information analysis. Examples of infrastructure and algebra-logical procedures to solve the traditional problems of logical analysis, confirming the effectiveness and practical value of algebraic model, are represented.

Fig. 2. Ref.: 16 items.

---

UDC 621.327

**A method of composition is a perforation of non-equilibrium numbers** / V.V. Barannik, B.V. Ostroumov, V.V. Shinkarev // Management Information System and Devices. 2009. N 149. P.30-36.

A ground and basic design of method of the composition assembling times is expounded non-equilibrium perforation of position numbers on the basis of arrays lower range and overhead the differentiated range levels. Differential description of arrays is built overhead perforation of level, taking into account the presence of homogeneous structure of dynamic ranges of overfalls on the scopes of contour and basic background of image. Shown, that composition perforation of number in a difference from non-equilibrium position numbers possess properties for the potential increase of degree of compression.

Fig. 1. Ref.: 5 items.

---

UDC 631.2 : 631.171 : 65.011.56

**Modeling of a stationary heat transfer in 3-D multi-layer structure with tubular heaters for system of optimum control of a thermal mode of a premise** / A.P. Slesarenko, N.A. Romantchenko, A.S. Soroka // Management Information System and Devices. 2009. N 149. P.36-45.

The mathematical model of 3-D multifunctional multilevel electroheating and accumulating system, intended for heating a large premise is constructed which should simultaneously provide the thermal standard of heating of a floor in view of influence of an environment, and possibility of optimum control of available power resources for its realization in a mode of real time.

Fig. 3. Ref.: 3 items.

---

UDC 004.42, 614.2:007

**Information-analytical system mammalogic department in an oncologic hospital center** /A.D. Tevyashev, E.I. Vihodcev, K.D. Petrov, S.M. Domnenko// Management Information System and Devices. 2009. N 149. P.46-52.

The work is devoted to solving the problem of informatization for oncologic centers in Ukraine by means of development and introduction the analytic computer system for mammalogic department in an oncologic hospital center.

Fig. 7. Ref.: 5 items.

---

UDC 519.2

**The educational quality assessment based on qualimetry estimation of graduating students** / O.Y. Cherednichenko, N.V. Zolotko // Management Information System and Devices. 2009. N 149. P.53-59.

The paper is devoted to the problem of educational quality assessment at the Higher Educational Establishment. As the main objects of monitoring are considered the follows: graduating students, the process of educational services assignment, and Higher Educational Establishment as a whole. The issues of quality assessment of graduating students are considered in this work. The simplified qualimetry method for integrated quality assessment was suggested. All stages of this method were considered in the paper in details. The sample of features tree and the measures of quality of graduating students are suggested. For determination of the measures weight is suggested to use the expert method based on pair comparisons. The integrated measure of quality of graduating students is calculated by weighted average method.

Tab. 1. Ref.: 12 items.

---

UDC 004.89:614.841.4

**Completing the emergency rescue technics - a problem fuzzy multiobjective optimization** / V.E. Snytyuk, P.P. Kucher // Management Information System and Devices. 2009. N 149. P.60-65.

The problem to completing the rescue technics as problem of fuzzy multiobjective optimization is considered. The method of its solving, which based on use fuzzy system theory elements is offered.

Ref.: 9 items.

---

UDC 621.397.6

**Fast operating method of binomial enumerative coding** / I.A. Kulyk, S.V. Kostel // Management Information System and Devices. 2009. N 149. P.66-76.

The paper expounds fast operating method of binomial enumerative coding based on a combinatorial algorithm for calculating a number of binary combinations. In the paper a block diagram of the algorithm is described, and correctness of its construction is grounded theoretically. An example of binary code number calculation is considered.

Tab. 2. Fig. 2. Ref.: 6 items.

---

UDC 620.179.16

**Development of base informative structure of the system of support of making decision, explained interest** / S.A. Babichev, I.F. Pogrebnyak, A.V. Sharko // Management Information System and Devices. 2009. N 149. P.77-84.

A base informative structure, cooperant searching for of compromise decisions in the conditions of mnogokriterial'nosti, is in-process developed. The task of determination of income of enterprise is considered in the conditions of limit on present resources for the production of two types of products. The polygons of decisions of task of determination are built arrived at equal and different znachimostyakh limits on resources. Procedure of association of individual preferences is presented in a collective decision for the construction of model.

Tab. 2. Fig. 3. Ref.: 9 items.

---

UDC 681.518:004.93.1'

**Hierarchical algorithm of electronograms recognition** / A.S. Dovbysh, K.V. Altynnikova // Management Information System and Devices. 2009. N 149. P.85-90.

The article describes the method of recognition electronograms, gained in a microdiffraction mode, in context of information-extreme intellectual technology, which based on recognition system information capacity maximization in study and exam processes. Algorithm and software of recognition system were developed. The hierarchical structure for study and exam phases was build.

Fig. 5. Ref.: 7 items.

---

UDC 519.7

**Language Model – Declension of Combinations of Words** / N.T. Protsay // Management Information System and Devices. 2009. N 149. P. 91-96.

Introduction to the modeling of the mechanisms natural language by means and methods of the bionics intelligence.

Ref.: 11 items.

---

UDC 681.326:519.613

**Interpretation model for highlevel LTL logic statements** / S.S. Zaychenko, E.I. Litvinova, I.O. Pobizhenko / Management Information System and Devices. 2009. N 149. P. 96-111.

A model for the interpretating high-level LTL logic statements to test of formulae when simulating in the mode of global time is proposed. It is based on analyzing the mathematical apparatus of linear temporal logic for the verification of digital systems.

Tab. 2. Fig. 3. Ref.: 15 items.

---

UDC 658.51:621.315.592

**Elaboration of structural elements of simulation model of multiproducts multistages of discrete productions** / A.G. Petrov, V.R. Petrenko // Management Information System and Devices. 2009. N 149. P.111-117.

Structure of object simulation model (SM) of multiproducts multistage discrete productions (MMDP), corteges description of generalized structural elements is present in work. The basic types of structural elements are selected, for each type of objects the properties and plurals of events which are processed or generated are described . The formalized description of methods for each type of objects is present. Job performances can serve as basis for algorithmic and programmatic realization of SM MMDP.

Fig. 2. Ref.: 12 items.