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Zadorozhnyi V.N.

Exact degree distribution formula for stochastic preferential attachment graph is derived. Calibration method of generation of such graph with the given distribution degree is proposed. The problem of calibration of the network distribution degree using real data is discussed.

Keywords: stochastic graphs, large network structure, simulation.

ON THE ISSUE OF DEVELOPING OF INTELLIGENT CONTROL SYSTEMS OF COMPLEX ORGANIZATIONAL STRUCTURES (I) MATHEMATICAL SUPPORT FOR CONTROL SYSTEM OF THE VERTICALLY INTEGRATED OIL COMPANY INVESTMENT ACTIVITIES 12

Akopov A.S.

The first part of the paper presents the new approach to developing of intelligent control systems of complex organizational structures. Existing problems, in particular, those connected with the huge dimension of systems, complexity of problems solved and uncertainty in the choice of effective operating parameters are studied. Effective methods for solution of such problems by example of the control system for vertically integrated organizational structure are offered.

Keywords: intelligent control systems, management of organizational structures, mathematical and software support for complex control systems.

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Ougolnitsky G.A., Usov A.B.

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Keywords: corruption, hierarchical games, simulation, environmental-economic systems, sustainable development.

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Keywords: functional model, intermediary services, software market, strategy positioning, target audience, advancement, promotion, consumer behaviour, consumer preferences.

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Ivanov D.Yu.

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Keywords: incentive system, interests coordination, synthesis algorithm, economic-mathematical model.

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Ermolaev A.I., Akhmetzyanov A.V., Grebennik O.S.

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to solve them the approximate solution algorithm has been developed. Perspective approaches to multilevel decomposition of oil pools with hierarchical splitting and parallel computing on supercomputer for developing effective methods of problem solution are also examined.

Keywords: selection of development system, reservoir engineering, optimization problem, optimal allocation of scarce resources, oil and gas pools group.

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Tokmachev M.S.

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Keywords: personified database, Markov chain, state of health, international classification of diseases, hierarchy of classes, stochastic matrix, probability, forecast, model, regression.

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Farkhadov M.G., Petukhova N.V., Efrosinin D.V., Semenova O.S.

The paper considers a two-node network model with unlimited queues to nodes to estimate and optimize voice self-service portals based on the computer speech recognition. The stationary probabilities of the system states are obtained and the performance characteristics are derived.

Keywords: call center, self-service, two-node network model, stationary probabilities of the system states, computer speech recognition.

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Mikrin E.A., Komarova L.I., Orlovsky I.V., Evdokimov S.N., Lukashevich A.I.

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Keywords: transport piloted vehicle, descent module, autonomous ballistics and navigation support for descent.

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Sysoev L.P.

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Keywords: probability criterion synthesis, optimal routing, threat environment, probability of object detection, optimal route time.

METHODS AND WAYS OF FORMAL DESCRIPTION OF INCOMPLETENESS OF INFORMATION IN THE INITIAL DATA ON DESIGNING OF ON-BOARD TERMINAL SYSTEMS 71

Zavadsky V.K., Ivanov V.P., Kablova E.B., Clenovaya L.G.

The paper considers two approaches to setting of the aprioristic information and the formal account of uncertainty of the aprioristic data for a class of terminal control systems. Under the first approach the stochastic model of Bayesian type system with partially unknown probability characteristics of stochastic disturbances is set. Under the second approach the family of system models ranged by complexity level is set for the control problems in which the order of the object equations and the class of stochastic disturbances are unknown.

Keywords: uncertainty of aprioristic data, terminal control, on-board systems.

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