Land Sciences

Innovations at Large Industrial Facilities

Abstract: This article discusses the involvement of employees in the innovation processes at enterprises. In the paper, we present the results of theoretical and empirical estimates of forming important personal qualities of an employee, reflecting the content of social outcomes of management innovations.

S.A. Kovalyova
St. Petersburg State University of Economics, St. Petersburg
The Concept of Human Vitality as the Methodological Basis of the Analysis of the Phenomenon of Volunteering in Modern Society

Abstract: In the article substantive provisions of the concept of vital forces applied to the study of the phenomenon of volunteering in society today.

A.Yu. Tarasov
St. Petersburg State University of Economics, St. Petersburg
The Influence of Factors Determining Staff Interaction at Large Industrial Enterprises on Professional Competencies

Abstract: This article discusses the formation and development of professional competencies in staff interaction of large industrial enterprises. The authors present the results of the theoretical and empirical analysis of the role of professional competencies of the staff in overall performance of enterprises.

A.Yu. Shevchenko
Volgograd State University, Volgograd
Romantic Love as a Form of Human Relationships

Abstract: The article presents the analysis of romantic love and its comparison with the ordinary side of human relationships; the procedure for the development of romantic relationship and its spatial and temporal conditions are defined.

Philology

E.B. Andreeva
Kurgan State University, Kurgan
Folklore Poetics as a Basis of the Caucasus Story Singularity

Abstract: The paper discusses folklore characteristics in the genre of the Caucasus Story on the example of the story by L.N. Tolstoy "Hadji-Murad". Folklore traditions exist in every Caucasus Story. It is folklore that enables to feel the beauty and exoticism of this cruel region. In the story "Hadji-Murad" the great writer, using the folk sources, opens internal world of his heroes, their characters. The purpose of the paper is to identify the role of folklore in the Caucasus Story on the example of the story by L.N. Tolstoy "Hadji-Murad".

R.V. Bukhaeva
East-Siberian State University of Technology and Management, Ulan-Ude
National and Cultural Peculiarities of Buryat Verbal Behavior: Buryat Communicative Ideal (Empirical Research)

Abstract: This article presents the results of the initial stage of experimental research of the Buryat communicative ideal. These results enable to identify the main, most striking components of the Buryat communicative ideal, as well as to check and correct the methodology of the experiment.

T.V. Volkova
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Wise Old Man Archetype in Chronotope of B. Akhmadulina's 1980s Lyrics
Key words and phrases: archetype, time, introvert, lyrical heroine, world experience, neoacmeizm, space, identity, self-reflection, chronotope, quote.

Abstract: The article presents the study of the role of the Wise Old Man archetype in selfdetermination of Akhmadulina's lyrical heroine of 1980s. For this purpose the author analyzes the chronotope. The author also correlates the archetype of the Wise Old Man and the Poet's image, characterizes the spatial and temporal existence of the lyrical heroine in the 1980s lyrics.

Engineering

A.S. Vasilyev, I.R. Shegelman, P.O. Shchukin
Petrozavodsk State University, Petrozavodsk
Some Guidelines on Increasing Manufacturability of Wedge Valve Making
Key words and phrases: nuclear power plants, wedge valve, main piping, manufacturability of making.

Abstract: the results of a patent search in the field of improvement of wedge valve making constructions' manufacturability for nuclear power plants and main piping are given.

Mathematical Methods and Models

D.B. Vladimirova, A.L.Derevyankina, A.R.Jenetl
Perm National Research Polytechnic University, Perm
Influence of Nonlinear Effects on the Stability of the Optical Fiber Drawing Process
Key words and phrases: drawing of optical fibers; stability.

Abstract: The influence of nonlinear effects on the stability of the optical fiber drawing process was considered. The drawing process is described by a system of differential equations in private derivatives. In order to study the stability of the system the linearization was made, the method of separation of variables and the finite-difference method were applied. In work practical conclusions were received, and also the algorithm of establishment of stability of process was fulfilled and estimated.

A.R. Davydov, M.A. Garbuzenko
Perm National Research Polytechnic University, Perm
Adaptive Control Simulation Model of Optical Fibers Extract

Key words and phrases: simulation model; optical fiber; control of process.
Abstract: Adaptive control of optical fibers extract algorithm based on its simulation model used in this article

U.V. Zakirova, T.A. Osechkina
Perm National Research Polytechnical University, Perm
Modifications of the Balanced Algorithm of the Solution of Problems of Collection with Additional Restrictions
Key words and phrasess: problem of collection, optimum route, clustering, approximate decision, Vehicle Routing Problem with Time Window.

Abstract: In article modification of the balanced method with additional restrictions, namely with temporary windows of service is considered. On the basis of this modification, probably to create the approximate decision which can be improved further classical methods. Flowcharts which reflect evident work of algorithm are offered.

V.yu. Ivankin, T.F. Pepeliaeva
Perm National Research Polytechnical University, Perm
Method of Surface Design Roughness Parameters

Key words and phrases: roughness of the surface roughness parameter control direction roughness.
Abstract: In the article suggest a method for predicting the roughness parameters for honing.

Computer modeling of kinematics processing issues the card surface irregularities with the prevailing trends.

I.V. kryaklina
Yaroslavl State Agricultural Academy, Yaroslavl
Mathematical Model and Optimization of Parameters of Operation of the Thermal Pump
Key words and phrases: mathematical model; optimization; thermal pump.

Abstract: The functional mathematical model of the geothermal heat pump. Proposed use of geothermal heat pump installation for the simultaneous production of heat and cold in the house with energy-efficient alternative and renewable sources of energy. Obtain criteria optimization process operation of the heat pump and optimum operation of the device.

I.P. Neporozhnev
Perm National Research University, Perm
About the Types of Clipping Oval in Finite Projective Planes

Key words and phrases: ovals in finite projective planes of order n

Abstract: we all nonisomorphic aggregate of n - 1 splits of the data n elements into pairs without repetitions pairs for $n = 6$ and $n = 8$ together with their groups of automorphisms.

V.P. Pervadchuk, V.M. Sevodina
Perm National Research Polytechnic University, Perm
About Risks Arising From the Use of the Cobb-Douglas
Key words and phrases: Cobb-Duglas function, limited values, risk.

Abstract: This paper investigates the risks arising from the modeling function of the Cobb-Douglas. A method of finding the quantitative characterization of such risks and the ways of management was offered.

G.A. Pushkarev, E.Yu.Vorobyeva
Perm National Research Polytechnic University, Perm
On Existence of Solution of a Boundary Value Problem for a Quasilinear Differential Equation with Deviating Argument
Key words and phrases: linear bounded operator, functional-differential equation, boundary value problem, monotone operator, coercive operator.

Abstract: Considered boundary value problem $\begin{cases} \dot{x}(t) + f t, (T_h x)(t), (S_g \dot{x})(t) = y(t) \\ lx = \alpha, \quad t \in [a,b] \end{cases}$, where the function $f : [a,b] \times R^n \to R^n$ satisfies the conditions of the Caratheodory spaces and $f(t,0,0) = 0$, $l : D_2^n \to R^n$ – linear bounded vector-functional; $g : [a,b] \to R^1$, $h : [a,b] \to R^1$ – the measurable functions; (a,b) – end segment. Solution assumes absolutely continuous. Established sufficient condition for existence of solution.

G.A. Pushkarev, N.N. Lihacheva, E.Yu. Vorobyeva
Perm National Research Polytechnic University, Perm
On a two-point boundary value problem for functional differential equations
Key words and phrases: bounded linear operator, functional-differential equation, boundary value problem, method of monotone operators.

Abstract: An attribute of existence of the solution of a nonlinear boundary value problem $(\Lambda x)(t) = f\left(t, \int_a^b x(s) d_s R_0(t,s) \right)$, $t \in [a,b]$, $x(a) = \alpha$, $x(b) = \beta$ in assumptions: operator $\Lambda : W^2 \to L$ defined by equality $(\Lambda x)(t) = x''(t) + \int_a^b x(s) d_s R_1(t,s)$; functions $R_1 : [a,b] \times [a,b] \to R^1$ and $R_0 : [a,b] \times [a,b] \to R^1$ are measurable in the square $[a,b] \times [a,b]$; full of variations $\overset{h}{\underset{s=a}{V}} R_1(t,s)$ and $\overset{h}{\underset{s=a}{V}} R_0(t,s)$ being integrated in absolute value on $[a,b]$; $R_0(t,s)$ not decreasing s in almost all $t \in [a,b]$; $f : [a,b] \times R^1 \to R^1$ function satisfies the conditions of the Caratheodory spaces: $f(t,u)$ measurable in t at all u and is continuous u for almost all $t \in [a,b]$.

N.V. Tatarinova, E.I. Efros, V.M. Sushchikh
Vyatka State University, Kirov
Some Results of Calculations of Mathematical Models of Variable Operating Modes of Heating Turbine Plants in Actual Operation

Key words and phrases: mathematical models, efficiency increase, settlement researches, operating modes, heating turbine, central heating, power efficiency
Abstract: The article presents the results of the conducted settlement researches of variable operating modes of heating turbine plants based on their mathematical models for the purpose to encourage proposals on increase of their power efficiency in actual operation.

Management, Computer Engineering and Information Science

A.A. Kulikov, D.V. Demkin, A.E. Melkov
Moscow State Open University named after V.S. Chernomyrdin; Moscow Energy Institute, Moscow
The Analysis of the Maximum Face Compression Impact on Face Recognition Result

Key words and phrases: pattern recognition algorithm, image compression, face recognition.
Abstract: The paper describes the results of research into the influence of the image compression degree on the characteristics of recognition algorithm functioning. Grayscale and color images noncompressed and JPEG algorithm compressed were used for processing. Color images were converted to grayscale.

Quality Control

E.V. Troshkova, V.V. Levshina
Siberian State Technological University, Krasnoyarsk
The Development of Empirical Three-Criterion Model of the System ''University – Affiliate''

Key words and phrases: simulation algorithm, ''outer arm of the university'', ''inner arm of the university'', grouping, the number of affiliates, criterion, regional location, distance, educational expansion, regional differentiation.
Abstract: This paper presents a simulation algorithm of the systems ''University – Affiliate''; the universities with affiliate network were grouped according to the three criteria: the number of affiliates, regional location of structural elements and the distance of affiliates from each other.

Ecology and Nature Management

L.A. Erofeevskaya
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Monitoring of Biological Activity of Soil Ecosystems under Oil Pollution

Key words and phrases: oil, microflora, bacteria, fungi, environmental safety, oil products, degradation, microorganisms, ecology, biological products, soil, hydrocarbon pollution.
Abstract: The paper describes the results of 6-year studies of soil ecosystems of emergency facilities of oil and gas complex in Yakutia. It was found that in the course of self-restoration the soils were insufficiently cleared of hydrocarbon pollution and were in ecological intensity. The signs of soil degradation are sparse or no vegetation, phytotoxicity, changes in the physical-chemical properties of the soil: the formation of blocky soil structure, hydrophobicity, salinity, high pH, lack of available phosphorus, nitrate nitrogen, ammonia nitrogen, phytotoxicity.

N.S. Musina, T.A. Maryutina
Vernadsky Institute of Geochemistry and Analytical Chemistry Russian Academy of Sciences, Moscow;
United Research and Development Centre, Moscow
Determination of Hydrocarbon Composition of Heavy Oil Residues by Thin Layer Chromatography Method

Key words and phrases: heavy oil residues, thin layer chromatography.
Abstract: A method for determining the composition of hydrocarbon heavy oil residue (**HOR**) by thin layer chromatography with a flame ionization detector (**TLC-FID**) is proposed. The possibility of using HOR dissolution in toluene and dichloromethane at the step sample preparation was studied. The hydrocarbon group composition of HOR of Samara, Shpakovsky and Chernigov oils was determined.

Economic Sciences

E.N. Vanchikova, Zh.Zh. Vasilyev, E.V. Korytova
East-Siberian State University of Technology and Management, Ulan-Ude
Modern State of Innovation System of Agro-Industrial Complex in the Republic of Buryatia

Key words and phrases: agro-industrial complex, innovative system.
Abstract: The article is devoted to modern questions of innovative development of the agro-industrial complex of the Republic of Buryatia. The authors considered the problems of the formation of innovation system in agro-industrial complex of the region.

Yu.A. Guzhavin
Moscow Academy of Entrepreneurship under the Government of Moscow, Moscow
Impact assessment centers on staff motivation

Key words and phrases: Human Resources Management; motivation; appraisal center; appraiser; employment; selection of personnel; career; personnel reserve; personal approach; situational approach; quantitative and qualitative approaches; competency model; internal competition; external competition; employee.

Abstract: The main purpose of this article is to study appraisal centers, their effect on staff development and motivation, identify possible adverse effects of appraisal centers. This method is described as a universal tool of employee performance appraisal both in Russian and international companies. The paper describes the importance of a qualified appraiser and the dependence of the quality of the conducted appraisal on his/her professionalism.

V.V. Zvorykin
Vladimir Institute of Business, Vladimir
The Model of Economic Readiness as an Attempt to Theoretical Unification of Profitable Empirical Developments of Business

Key words and phrases: assessment methodology, complex analysis, economic entity, economic preparedness, hierarchy, influence factors, information, multiple criteria, pyramid, quality, rating agencies, relevance.

Abstract: The article considers the problem of complex analysis of economic subjects, methods and technologies for collecting and processing data. The author proposed the model of empirical mechanisms of theorization, which are currently used and sought in the market. Also, the task of qualitative and quantitative improvement of the product ranking was set.

V.R. Kabirov, E.I. Reyshahrit
National University of Mineral Resources ‘ ‛Gorny ᾿ ᾿ , Moscow
Field Development of Metal Minerals in Groups as a Tool to Increase the Investment Attractiveness of Mineral Resource Base

Key words and phrases: group of deposits; investments; mineral resources base; metal minerals; economic-geological cluster of deposits.

Abstract: The authors described a tool for forming groups of metal mineral deposits, which is based on geological and economics factors. It enables to increase the investment and economic attractiveness of deposits and expand the potential of mineral resources base of mining industry in Russian Federation.

E.I. Kistrina, O.I. Kuznetsova, G.E. Lokteeva, O.P. Sukovatova
Ryazan State Radio Engineering University, Ryazan
The Regional Policy Technology for the Development of Municipalities (Case Study of the Ryazan Region Municipalities)

Key words and phrases: cluster analysis, municipality, regional policy, SWOT analysis.
Abstract: The paper proposes the regional policy technology for the development of

municipalities on the basis of statistical methods and strategic management. The application of the developed technology to municipalities of the Ryazan region is shown.

T.A. Kuramshin, R.R. Ahunov, A.V. Yangirov
Bashkir State University, Ufa
A Structure of the Reproductive Potential of the Region
by the Classification of Economic Activities
Key words and phrases: reproductive potential; fixed assets; industry; region; Republic of Bashkortostan; manpower.

Abstract: This paper discusses the essential elements of the reproductive potential of the Republic of Bashkortostan – fixed assets, employment potential and their distribution by economic activity. The analysis of the studied parameters of Bashkortostan Republic in comparison with Russian regions. The result revealed the most problematic sectors and factors that could become a serious obstacle to the sustainable growth of the Republic of Bashkortostan.

Yu.P. Rogacheva
Lipetsk Affiliate of the Russian Academy of National Economy and Public Administration
under the President of the Russian Federation, Lipetsk
Trade Fair Model on the Basis of the Law of Floating Bodies in Homogeneous Medium

Key words and phrases: gradient, level of profitability, trade fair.

Abstract: The paper justifies the choice of the model of floating bodies in homogeneous medium to describe the processes of trade fair activities.

O.P. Tikhonova
Academy of Management "TISBI", Kazan
On Financial Support of Innovations in Russia
Key words and phrases: investment, innovation activity, innovation, sources of financing, financial mechanisms, financial security.

Abstract: The paper discusses the issues connected with the identification of the sources of financing innovative projects. Much attention is paid to the significance of innovative activity for the Russian economy.

A.M. Khizhina
Moscow State University named after M.V. Lomonosov, Moscow
Multi-Segment Strategy Management or Strategy Development
for Broad Product Portfolio Positioning
Key words and phrases: proliferation, product portfolio, portfolio analysis, portfolio roles analysis, BCG, Need State analysis.

Abstract: The paper discusses the key approaches to the development of the strategy for positioning of broad product portfolio and the evolution of portfolio analysis methods. The author draws a conclusion that product portfolio management is a dynamic process influenced by different external and internal factors.

Legal Science

N.S. Gusenko
Moscow Law University named after S.Yu. Witte, Moscow
On Codification of Legal Activity in Telecommunication Systems
Key words and phrases: information, lawyer, law, individual, organization of professional activity, telecommunication systems.

Abstract: The paper describes the advantages of information and telecommunication technologies for legal activities; the need for the development of Telecommunication Code has been discussed.

Legal Regulation

O.Yu. Gorbova, O.I. Kuznetsova
Ryazan State Radio Engineering University, Ryazan
The Construction of Performance Indicators Hierarchy of Regional Executive Authority

Key words and phrases: hierarchy of performance indicators, performance indicators, efficiency of executive authorities.

Abstract: The paper discusses the questions of performance evaluation of the regional executive authorities. It is noted that the existing legal acts have no performance indicators, although there is an objective need to identify ''bottlenecks'' in the management of the territory. To solve this problem, the authors explain the mechanism of constructing the system of performance assessment of regional authorities based on the hierarchy of three levels of performance indicators. The proposed mechanism is illustrated by the Ministry of Industry, Innovation and Information Technologies of the Ryazan region.

Materials for Discussion

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Compilation of Statistics on Agricultural Development in the Russian Federation for the Period from 2007 through 2012

Key words and phrases: competitiveness; consumers; manufacturers; agriculture.

Abstract: This paper provides an overview of statistical data in the field of agriculture for the 2007‑2012 period. Data on the distribution of agricultural products by farm. The dynamics of changes in the volume of crop and livestock production.

S.M. Terekhov, K.S. Kornilov, G.N. Voronkov
Tambov State Technical University, Tambov
Disposal of Sewage Sludge. Calculation of Sludge Disposal Site
Key words and phrases: sludge disposal, sludge sediment, recycling, wastewaters, recovery.

Abstract: The main methods of disposal of sludge industrial wastewater polluting waterways are considered. The authors describe the 5 main techniques currently used. The brief characteristic of each of these methods is given, their advantages and disadvantages are identified. The most popular method in Russia is disposal of sludge at special fields. The calculation of sludge bank disposal on the territory of biological treatment facilities is made.