Summaries

V.V. Lasukov
LARGE-SCALE STRUCTURE OT THE UNIVERSE

Within the framework of the classic gravitation theory the precise solutions of equations of Lagrange in the metrics of Logunov with inhomogeneous and non-isotropic scalar field have been obtained. It has been shown, that the uniformity of the metrics can be combined with the non-uniformity and anisotropy of the scalar field which has spiral spatial structure in the plane of observation.

V.N. Belomestnykh, E.P. Tesleva
POISSON'S RATIO AND GRUNAISEN'S PARAMETER OF SOLIDS

The proportions linking sound speeds or Poisson's ratio with Grunaisen's parameter of solids have been obtained. The application of these formulas for definition of Grunaisen's parameter of a number of metals, ionic and ionic - molecular compounds has been analyzed.

B.V. Goryachev, S.B. Mogilnitsky
STUDY OF INFLUENCE OF SIZE AND FORM OF SCATTERING VOLUME ON THE RADIATION CHARACTERISTICS OF RADIATION TRANSFER

The paper deals with radiation transfer in scattering volumes of different forms. The change of the brightness body of the scattering volume is analyzed with the help of asymmetry coefficient. The given coefficient is an informative and sensitive characteristic which permits to assess the distribution of diffused irradiation precisely enough.

V.P. Grigoryev, O.V. Tomashova
SIMULATION OF PROCESSES OF IONIZATION IN ATMOSPHERE INITIATED BY RADIOACTIVE RELEASES

The model of ionization of damp air initiated by radioactive releases in bottom layers of atmosphere is shown. The basic plasma-chemical reactions are taken into account. The preliminary analysis of parameters of generated plasma and assessment of the generation rate of negatively ionized atoms have been made.

I.I. Zherin
HALOGEN FLUORIDES IN NUCLEAR FUEL TECHNOLOGY. SYNTHESIS AND APPLICATION

The results of experimental investigations of synthesis of halogen fluorides, their physico-chemical properties, kinetics of fluorization of some uranium containing compounds by halogen fluorides have been viewed. It has been shown that fluorization follows the patterns of diffusive kinetics.

A.F. Korobeinikov, A.I. Grabezhev
GOLD AND PLATINUM METALS IN COPPER-MOLIBDENIC-PORPHYRY DEPOSITS

Among the deposits of porphyry ore formation copper- porphyry (Au up to 0,4 g/t, Cu /100 Au from 500 up to 2000), gold - copper - porphyry (Au 0,5...3 g/t, Cu/100 Au 11...150) and copper-molibdenic-porphyry deposits are distinguished. They differ by the various contents of Cu, Mo, Au, Pt, Pd in ores and sulfide associations. During the formation of maternal subvolcanic granitoid magmatic bodies the dissipation of Au, Pt, Pd in various types of the appeared rocks took place: 1,8...4,1 mg/t Au, 0,5...6 mg/t Pt and 7...11 mg/t Pd. Automatic metasomatic processes of acid leaching of diorites, porphyrites, granodiorites, plagiogranites (cericitization) resulted in insignificant accumulation of noble metals (mg/t): 12...34 Au, 12...48 Pt, 12...78 Pd, k_H 1,2...8,7) in the products of metasomatism. Only the final hydrothermal processes of silicification and sulfidizing of magmatites provided rich concentration of noble metals in metasomatism zones: 0,5...12 g/t Au, 0,1...0,5 g/t Pt and 0,05...0,3 g/t Pd, k_H 100...1600 and more). During the evolution of porphyry magma-fluid columns gold and partially platinum, palladium and osmium enrichment of their apical parts took place, and subvolcanic gold - copper - porphyry deposits with concomitant members of platinum group (MPG) appeared. The regions of paleoriphtogenesis and TMA with such surface developments of porphyry intrusions of high-aip type are the most perspective for searching for industrial integrated mineralization with noble metals.

I.V. Kucherenko
MINERALOGICAL-PETROCHEMICAL FEATURES OF THE ASSOCIATION OF ACIDIC HYPABYSSAL ROCKS OF BERICUL ORE FIELD

The results of analysis of mineral and chemical composition of acidic hypabyssal rocks of Bericul ore field are adduced. Three kinds of granitoids are distinguished: granitoids of low-alkali, normal and leucocratic granites. Each kind is represented by aplite-shaped, porphyry-shaped, and pegmatoid structural types and by one biotite mineral type. All kinds of granitoids belong to the relatively high-alumina type and mostly to potassium-sodium petrochemical series with occasional participation of rocks of potassium series. According to combination of features and, in particular taking into account spatially - age proximity, structural resemblance of abyssal granitoids of Martaigin time and acidic hypabyssal rocks of the ore field the conclusion was made about the formation of the latter in the structure of Martaigin complex, probably on the final stages of its formation.

V.N. Ustinova, I.G. Ustinova
STATISTICAL PARAMETRIZATION OF SYMMETRIC GEOPHYSICAL OBJECTS

In the constitution and hierarchic conformity of the discrete geological and geophysical objects the certain regularity and orderliness in their sizes are revealed. It appears in the structure shape, their spatial arrangement and time follow. The repeatability of the shapes appears and is easily enough typified in the morphology of surfaces and morphological combinations of geophysical fields. Mathematical identification of the structures standard appearance is effectively executed using the Wiener auto-correlated analysis and filters.

I.A. Tikhomirov, V.F. Myshkin, V.A. Vlasov, V.A. Borisov, V.M. Sosnovenko, A.G. Vasilyev
METHODS AND DEVICES AIMED AT DEFINITION OF THE SCATTERING INDICATRIX OF LASER EMISSION IN GAS-DISPERSED MEDIUM

The methods and devices for determination of the low-angled scattering indicatrix of laser emission, including the direction 0°; the low-angled and the full scattering indicatrix of the ordinary single disperse particles by a single photodetector are expounded. The experimental data are given.

V.P. Tsipilev
KINETICS OF EXPLOSIVE ARRANGEMENT OF THE HEAVY METALS' AZIDES AT LASER IMPULSE INITIATION

The experimental researches of the kinetics of explosive decomposing of the heavy metals' azides at laser impulse excitation over the broad range of the laser effect levels (from the threshold ones to the

100-times excess of the energy ignition) and in the broad examination retention interval covering the induction period, fast explosive decomposing and the retraction of detonation products were conducted. The results of the kinetics decomposing correspond to the existing ideas concerning the calorific furnace nature of the process of the azides' laser initiation.

UDC 525.36.22, 681.7.068.32

V.N. Tsimbal, I.A. Tikhomirov, V.F. Myshkin, A.N. Motorin, V.A. Borisov, A.M. Vdovin, D.G. Chernov
CREATION OF SCREENS FOR CONTROL OVER THE LASER EMISSION INTENSITY SCATTERED FROM THEM

The results of the experimental investigations concerning the elaboration of methods and devices aimed at formation of the preassigned parameters of dispersed optical radiation are given.

UDC 620.9:621.314, 621.731.3.322-81:621.314.21.3.042, 681.142

V.S. Loginov
APPROXIMATE RELATIONS FOR CALCULATION OF THE NONSTATIONARY TEMPERATURE FIELD IN THE PULSE THERMO–ELECTRIC GENERATOR

On the basis of the simple approximate method of the solution of linear problem of heat conductivity for small time point (Fo < 0,001) the relations for the temperatures calculation in a pulse thermo-electric generator are obtained. The analysis of the approximate solution is conducted.

UDC 621.731.3.322-81:621.314.21.3.042, 681.142

V.E. Yukhnov
ON THE POSSIBILITY OF DETERMINATION OF THE VALUE OF THE HEAT SOURCES AND THE TEMPERATURE INSIDE THE HOLLOW CYLINDER ACCORDIDG TO THE DATA ON THE SURFACE

There is a connection between the inside heat sources and the abundant temperature in the hollow cylindrical element of the finite sizes.

UDC 621.436

V.V. Gavrilov
MATHEMATICAL MODEL OF THE HEAT–MASS EXCHANGE AT FUEL VAPORIZATION IN A DIESEL

The model of the non-equilibrium fuel vaporization aimed at solving the problems of diesel designing is offered. The composite model of vaporization represents the system of simple models, i.e. the models of the averaged motion of the non-vaporable squirt, the regression turbulence model and the model of convective transference of mass and heat at vaporization. It is shown, that the account of the turbulent pulsations is especially crucial at the heat-mass exchange calculation in the peripheral zones of the squirt cross-section. The design and experimental temperature distributions in the vaporable squirt are represented.

UDC 666.1.022.8

N.S. Krasheninnikova
EFFECT OF THE HEAT TREATMENT CONDITIONS ON CHEMICAL HOMOGENEITY OF THE GRANULAR GLASS BATCHES

The influence of conditions of thermal treatment on the structure and chemical homogeneity of glass batches granules was examined. In the process of thermal treatment the granules of glass batches acquire zonal structure, which determines their chemical homogeneity. Negative influence of the granules' homogeneity on the process of glass melting is described in this work.

UDC 666.973

V.N. Smirenskaya, V.I. Vereshchagin, S.A. Antipina
IMPROVEMENT OF SILICATE BUILDING MATERIALS PROPERTIES ON LIME-SILICEOUS WITH THE ADDITION OF WOLLASTONITE

The results of research of wollastonite influence on the properties of silicate materials are presented. It is shown, that wollastonite is an efficient filler of silicate masses, which both strengthens and improves the decorative properties of silicate building materials.

UDC 541.138.2

D.V. Konovalov, V.V. Korobochkin, E.A. Khanova
ELECTROCHEMICAL SYNTHESIS OF ZINC OXIDE ON THE ALTERNATING CURRENT

The possibility of obtaining zinc oxide with the high specific surface area by electrolysis of metal zinc on the alternating current of commercial frequency is shown, the parameters, which influence the velocity of its obtaining are studied. The phase content and characteristics of porous structure of electrosynthesis in accordance to the temperature of burning are defined.

UDC 669.2.66

M.G. Shtutza, A.V. Kardapolov, V.B. Filippov, N.A. Sysina
EXAMINATION OF THE RARE-EARTH CARBONATE PRECIPITATION

The influence of various factors, active during the precipitation process on the structure of carbonates of rare-earth elements was examined. The possibility to control the process of precipitation in order to obtain the carbonate articles with the prescribed content and morphology of particles was shown.

UDC 665.12.001.57

A.V. Kravtsov, N.V. Usheva, N.A. Baramygina
SYSTEMATIC ANALYSIS OF THE PROCESSES OF DE-ETHANIZATON AND STABILIZATION OF THE GAS CONDENSATE OF THE MYLDZHINSK GAS-CONDENSATE FIELD

The mathematical models of the gas condensate de-etanization and stabilization processes in the air, the description of models of simulated system, the results of calculations of technological parameters influence on the processes of detachment are shown.

UDC 537.525

Y.I. Kornev, N.A. Yavorovski, G.F. Ivanov, G.G. Savelyev, T.V. Shamanskaya
USAGE OF THE EMISSION SPECTRUMS FOR THE EXAMINATION OF THE CHARACTERISTICS OF BARRIER CHARGE IN WATER AIR ENVIRONMENT

The research of emission spectrums of impulse-barrier charge in water-air environment was done. The major short-living active particles, which are formed in the charge plasma are established. The assessments of major charge characteristics are fulfilled.

UDC 624.21.014.2:620.19

A.P. Boichenko, A.I. Staroverov
GAS-DISCHARGE NONINVASIVE DIAGNOSTICS OF MICROCRACKS AND CORROSION IN BRIDGE METAL CONSTRUCTIONS

By the example of metal samples with microcrack (width of opening <1 mm) and chemical corrosion, transferring into the shells with diameter from 1 mm up to 0,3 mm and with the depth up to 0,5 mm, which are located under the layers of lining and paint coat, which width is up to 350 mkm, the possibility of their gas-discharge flaw detection, which is based on Kirlian's method, was examined. It was established that with such coating thickness the gas-discharge diagnostics of such defects with minimal width of opening and with diameter up to 0,3 mm is possible.

UDC 621.357.026

A.A. Titov
INFLUENCE OF THE AMPLITUDE CHARACTERISTICS CORRECTOR ON THE INTERMODULATION DISTORTION OF THE FILTER POWER AMPLIFIER

It is shown that the use of the amplitude characteristics corrector of the filter power amplifier allows almost to double its output power, limited by the sphere of linear work without increasing the level of inter-modulation components of the third degree in the spectrum of the output signal.

UDC 621.317.727

V.L. Kim, M.S. Roitman
STANDARD INDUCTIVE VOLTAGE DIVIDER

The calculation of inductive voltage divider error, conditioned by the interrelation of decades was done. The usage of two-stage technology of decades production and decades' fulfillment on the general ferromagnetic core by the braids made of wires of various diameters allowed to create the standard six-decade divider with the relative accuracy of the transfer constant $3 \cdot 10^{-7} K_n^{-1}$ in the frequency band 0,4...2 kHz.

UDC 681.773:535

S.M. Slobodyan
MULTIDIMENTIONAL AND COORDINATE DRIVE OF MICRO-CONTROL

The system piezoelectric actuator for spatial (with the longitudinal shear along the angles of inclination) control by the mirror of adaptive follow-up system front corrector was described. The efficiency of drive is approved by experiment.

UDC 62-3:62-755

V.A. Dubovik, V.M. Zamyatin
STATISTIC BALANCING SLIDER-CRANK MECHANISM

The conditions for automatic balancing of slider-crank mechanism, situated on the horizontal platform with elastic system, by the pendulums were acquired.

UDC 004.3:681.3

E.A. Muratova, O.G. Berestneva
THE EXPOSURE OF HIDDEN REGULARITIES IN SOCIAL-PSYCHOLOGICAL EXPERIMENTS

The methods of hidden regularities exposure, which allow to expose the stable regularities, typical for examined object domain, in the form of logical rules with the further construction of their meta-structure are being viewed. The principle of formation of formal binary variables is described. The construction of meta-structure is rather essential for knowledge bases formation that requires the involvement of notions, meta-notions and semantic relations on the basis of great amount of fragments of knowledge of object domain.

UDC 519.863:658.7.027

A.A. Mitzel, A.A. Gerasimova, O.V. Kashtanova
OPTIMIZATION MODELS OF GOODS SUPPLY

The optimization models of supplier with the given conditions of keeping an account with client are proposed. The following models, that include the determination of the terms and conditions of an agreement, have been viewed: a) in case of repeated supplies without involvement of bank loans; b) taking into consideration the mechanism of supplier's lending; c) using bills of exchange. The performance criterion of the models is viewed from the position of customer.

UDC 330

M.M. Lobanov
MECHANISM OF ASSESSMENT AND MANAGEMENT OF INDUSTRIAL PRODUCTS COMPETITIVENESS

The proposed mechanism of assessment and management of industrial products competitiveness allows to describe the motives of individuals on the industrial products market and to precisely determine the strategy and tactics of competition.

UDC 101:7.01

E.A. Nyman
PLEASURE PRINCIPLE AS THE BASIS OF SYSTEMATIC INTEGRITY OF PHILOSOPHY

By the example of Aristotle's, Descartes and Kant's philosophies the pleasure principle is studied as the major incentive of human's knowledge and as the basis of systematic integrity of philosophy. The pleasure principle is viewed as the determiner of the thinking and reflexive procedures, that allow for the possibility of genuine critical philosophical project implementation.

UDC 165.4

V.A. Ladov
INTENTIONALITY IN LANGUAGE: THE PROBLEM OF EXPRESSIBILITY

The problem of relevant linguistic forms search, that express the so-called intentional conditions, is being discussed. The author affirms that the phenomenology — the most well-known study of the intentional conditions of consciousness in the modern philosophy — is naieve with respect to the language, which it uses for construction of its theory. Phenomenology uses the classical referential language of science, which doesn't allow to avoid the ambiguity while expressing the major methodical idea of the philosophical doctrine- the idea of reduction.

UDC 316.7:159.935

O.T. Loiko
THE SOCIAL MEMORY IN THE CONTEXT OF PHILOSOPHICAL REFLECTION

The problems of philosophical reception of social memory, which is viewed as the means of social existence, which also allows providing the continuous dialogue of the past with the future, are being discussed.

UDC 19

Nikiforov O.A.
THE FORMING OF PHILOSOPHY OF CONTEMPORARY RUSSIAN BUSINESS: NATIONAL FEATURES AND FOREIGN EXPERIENCE

When developed from command-administrative system in power into free market with democratic values economy and society in Russia changed radically. Conditions for a new social class and principles of economy formation arose. Business movement philosophy formation was necessary for their proper development. Creating a new economic model of Russia those people had to realize their position in our society to be of great use for this country. Unfortunately, special features of social, politic and economic development in the country could hardly be called favorable for this process, especially in the ninetieth of the twentieth century. Though the reforms started 20 years ago, we still haven't got a full-bodied idea of domestic business and its principles development.

UDC 26(47+57)

L.I. Soskovets
RELIGION AND CHURCH IN THE POST-SOVIET TIME: TENDENCIES AND CONTRADICTIONS

In this article there is an attempt to explore the major directions of religion in Russia for the last 10 years. The author analyses the growth of religion, finds its qualitative state, touches the problems of relationships between state and church and also between different confessions.

UDC 550.92 (V.A. Obruchev)

B.D. Vasilyev
140TH ANNIVERSARY SINCE ACADEMICIAN V.A. OBRUCHEV WAS BORN

The article is devoted to 140th anniversary since the member of the Academy of Science of USSR, laureate of Lenin's and Stalin's prize, the honoured president of the Geographic society of USSR, the founder of mining and geological foundation and Siberian geological school, the world-famous traveler, researcher of Asia, mining engineer Vladimir Afanasievich Obruchev was born (1863–1956).

UDC 51(09)

V.N. Belomestnykh, L.A. Belomestnykh, N.N. Krulikovsky
THE TRIED TO PROVE THE GREAT FERMA THEOREM

After the founders of the high mathematical education and mathematical science in Siberia, doctor of pure mathematics Fyodor Eduardivich Molin and holder of master's degree Vladimir Leonidovich Nekrasov, Vsevolod Aleksandrovich Maleyev is, probably the most notable figure. This article is devoted to the argument of his life and activity.