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## ABSTRACTS

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### MATHEMATICS

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*pp 5–20*

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**DIFFERENTIAL METHODS OF BOUNDARY – VALUE PROBLEMS DECISION WITH FRACTION ORDER DERIVATIVES IN MATHEMATICAL PHYSICS**

**Bazzaev A. K.**

The article reviews the results of the local-one – dimensional differential circuits plotting for the differential equations in the partial derivative of fraction order in the multi-dimensional area. Using the maximum principle for the differential equations we obtained the apriory estimations in the uniform metrics which proved the local one-dimensional circuits convergence.

**Key words:** difference schemes, maximum principle, convergence and stability, locally one-dimensional schemes).

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*pp 21–30*

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**AUTOMATED MONITORING AND FORECASTING SYSTEM FOR THE EDUCATIONAL SYSTEMS CONTROL**

**Kovalyova M. A., Korovkina A. YU., Voloshin S. B., Syrtsev G. A., Farniev S. R.**

The automated data processing system for the educational system control was designed allowing to obtain, systemize and analyze information, to monitor labour market in education sphere of the North Ossetia-Alania Republic, to study the correspondence of the teachers' structural peculiarities with the market demand.

**Key words:** uniformed electronic educational space, pedagogical staff, data base, client-server application.

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*pp 30–40*

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**MATHEMATICAL MODELING IN MINING, NON-FERROUS METALLURGY AND NANOINDUSTRY**

**Orlova N. S., Khostelidi V. N., Kachalkina Ya. N., Plieva A. R.**

The examples of mathematical and computer modeling methods use for the engineering problems decision are presented. Particularly, the adsorbent vibroboiling modeling problem in the apparatus for the technological exhausts purification in metallurgy, heat-exchang problem modeling in the drum of the hot caking in mining and non-ferrous metallurgy and also the problem of nanoparticles layer modeling in the technical equipment of powder nanostructure catalytic synthesis are presented.

**Key words:** mathematical modelling, computer modelling, vibrofluidized bed, adsorbent, drum unit hot pelletizing, powder nanostructures.

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**pp 40–46**

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**ON APPROXIMATIVE COMPUTATION OF HYPER SURFACE INTEGRALS ON INTEGRATION VECTOR****Plieva L. Yu.**

The article deals with quadrature formulas of interpolation types for the approximative computation of hypersurface integral on the integration vector with weight function. The error value is given.

**Key words:** hypersingular integral, error estimate, quadrature formula, interpolation polynomial.

**MEDICINE**

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**pp 47–53**

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**PROPHYLAXIS OF DENTAL IMPLANTATION COMPLICATION****Bazaeva I. K., Lalieva Z. V.**

Ozonotherapy is included into prophylaxis complex of the dental implantation complications reducing the inflammation genesis in the perimplantative zone up to 25 % also the complication burden is reduced without medical load increase for the patients. Ozonotherapy after the dental implantation reduces risk of inflammation processes.

**Key words:** prevention of complications in dental implants, ozonotherapy, inflammatory genesis, periimplantation region, inflammatory diseases.

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**pp 53–64**

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**FYTOTHERAPY IN THE COMPLEX TREATMENT OF CHRONIC PERIODONTITIS****Djoeva R. F., Lalieva Z. V., Khodova E. L.**

Possessing a numerous list of drugs, the practical physicians often appeal to the natural and vegetative preparates use. The reason is in the unique properties of fytopreparatories, their ability to have directed action, good endure in prolongation use, the negative side effects absence.

**Key words:** herbal medicine, chronic periodontitis, conservative treatment, nervous system, mucosal immunity of the oral cavity.

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**pp 64–69**

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**IMMUNE MODULATOR «DERINAT» AFFECT ON THE IMMUNE SYSTEM INDICATORS OF THE CHILDREN WITH OBSTRUCTIVE BRONCHITIS****Kaitmazova N. K.**

The article presents research data of the immunological status of children with obstructive bronchitis. Cytokines content in blood serum was calculated. It was proved that the children with obstructive bronchitis need immunological examination and immunodeficits

variations require decoding. The work practical value is in the diagnostics optimization and immune correction for the children with obstructive bronchitis resulted in immunoreactivity disturbance.

**Key words:** immunoglobulins, phagocytosis, immunity, obstructive bronchitis, children, treatment.

**pp 70–74**

**SWEET FLAG POLISAXARIDES AFFECT ON THE CARCINOGENESIS OF LIVER AND ESOPHAGUS IN THE EXPERIMENT**

**Kokoev L. A.**

The sweet flag polisaxarides affect on the tumors formation in the rats' liver and esophagus induced with N-nitrozodiethylamine was studied. The results prove these polisaxarides ability to reveal anti-carcinogenic affect on liver and esophagus cancer resulted in the carcinoma formation frequency reduction, tumors growth and malignization braking of the neoplastic changes in them.

**Key words:** malignant neoplasms of liver and esophagus, polysaccharides calamus, N-nitrosodiethylamine.

**pp 75–81**

**INCREASE OF CONSERVATIVE TREATMENT EFFICIENCY OF PERIODONTITIS OF SEVERE AND MODERATE SEVERITY**

**Maskurova Yu. V., Dzgoeva I. A.**

The treatment of patients with generalized periodontitis of severe and moderate severity using antioxidants is the effective treatment method in comparison with the traditional methods. The clinical X-ray examinations proved this methodics use to expedient and perspective and it must be added to the traditional therapy.

**Key words:** parodontitis, conservative treatment, antioxidants, stomatology, system of regulation of oxidation-reduction transformations, synthesis of an organic matrix.

## HUMANITIES

**pp 82–86**

**SOUTHERN CAUCASUS PROBLEMS IN THE REGIONAL INTERETHNIC RELATIONS SYSTEM IN XX–XXI CENTURIES**

**Dulaeva Z. S.**

The article studies new independent states formed after the USSR collapse, their role in the geopolity of the leading world powers, interests sphere intersection in the Bolshoy Caucasus region and interaction perspectives. The main aspects of the Study are the Southern Caucasus problems in the regional international relations system in 90-s of XX century beginning of XXI century and their decision ways.

**Key words:** sovereign state, the collapse of the Soviet Union, geopolitics, the greater Caucasus, regional, international relations, globalization.

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**pp 87–93**

**MAIN PROBLEMS OF MOUNTAIN PEOPLE IN THE  
RUSSIAN FEDERATION**

**Kachmazov G. E.**

The article considers the social problems of the mountain territories on the whole.

The factors influencing on the mountain inhabitants were studied. Modern social state of Mountain territories in the North Ossetia-Alania is characterized.

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**pp 93–97**

**INNOVATION FORMS OF THE INDEPENDENT  
WORK ORGANIZATION AS THE STUDENTS'  
READINESS FORMATION TERMS FOR SELF-  
CONTROL**

**Tarieva V. A.**

The article describes «self-control» as a person's activity directed to analysis and efficiency increase in education process. The independent work organization is considered to be an effective instrument and active stimulus of the students' readiness formation for self-control, being an aim, directed to the given activity implementation and realization.

**Key words:** self-control, self-study, innovation, self-organization, self-discipline, reflectivity, motivation.

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**pp 97–105**

**SCIENTIFIC EXPERTISE IN LAW-MAKING  
ACTIVITY OF THE LEGISLATIVE AUTHORITIES**

**Fidarov T. K.**

The article analyzes the scientific expertise concept in legislation, characterizes its role in the qualitative legislative substance formation, regulating social life.

**Key words:** scientific expertise, expertise in legislative activities, expertise in regulatory activities.

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**pp 110–109**

**ETHNOS LIFE-ACTIVITY FUNDAMENTALS AND  
ETHIC REGIONAL SAFETY**

**Tsopanova A. V.**

The last years events both in our country and in the world testify the especial importance of the ethnic factor in the society life. The ethnic revival is considered to be one of the main features of the humanity development at the present stage. The main aims of the ethnos life-activity include biological, social-biological and social ones, which understanding provides the safe existence norms successful operation.

**Keywords:** ethno-regional security, ethnos, ethnic conflicts, the purpose of the ethnic group functioning, ethnogenesis

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## EARTH SCIENCES

pp 110–117

### WAVGLET ANALYSIS USE FOR THE SEISMOLOGICAL DATA PROCESSING

Zaalishvili V. B., Melkov D. A., Dzeboev B. A.

The algorithms of discrete wavelet conversion (DWC) on the basis of Fourier Fourier rapid transformation (FRT) were elaborated. The examples of spectral-time decomposition of seismic records are presented. The software is realized in MATLAB and can be applied for the various data processing.

**Key words:** wavelet analysis, discrete wavelet transform (DWT), fast Fourier transform (FFT), seismogram.

## AGRICULTURAL SCIENCES

pp 118–122

### GISTOMORPHOLOGY OF QUAILS' BURSA OF FABRICIUS IN THE EARLY POSTNATAL ONTOGENESIS

Lepodarova A. V., Gusova B. D.

The gistostructure of the quails' bursa of Fabricius in the early postnatal ontogenesis was studied. The morphometric characteristics of the quails' bursa from the 1-st day till the sexual maturation is presented.

**Key words:** quail, histomorphology, fabriciana bag, postnatal ontogenesis, bursal ratio.

pp 122–129

### THE USE OF PLOUGHS WITH PNEUMATIC SAFETY – DEVICE IN THE FOOTHILL AREAS

Kudzaev A. B., Tsgoev D. V.

Ploughing is one of the labour-consuming processes in agriculture and it is traditionally carried out with ploughs. The modern producers manufacture ploughs of general purpose and only sowe of them-special purpose ploughs for the stone soils. The soil density in mountain and foothill area is rather high resulting in the plough failures and the agrotechnical requirements infringement thus reducing the cultures yield. So the necessity of the reliable plough construction with the safety-device for the mountain and foothill area soils becomes rather actual. To achieve this aim a special plough with pneumatic safety-device was designed.

**Key words:** plough, stony soils, pneumatic fuse, tractive resistance, spring fuse, hydropneumatic fuse.

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## TECHNICAL SCIENCES

pp 130–133

### MODERN PROBLEMS OF CAD DEVELOPMENT FOR ELECTRIC BLASTING

**Sakhanskaya I. V.**

A general CAD device for blasting works was studied. The comparative characteristics of drilling blasting CADs used in the Russian mining industry are presented.

**Key words:** computer-aided design electroexplosive work, mining industry, environmentally safe explosive compounds, rocks.

## ECOLOGY

pp 134–136

### ECOLOGICAL RISKS MODELING IN THE NORTH OSSETIA-ALANIA REPUBLIC

**Zorina I. Yu.**

The methodics of the ecological risks modeling in the North Ossetia-Alania Republic using GIS and the maps of the technogenic and natural hazards is considered.

**Key words:** herbal medicine, chronic periodontitis, conservative treatment, nervous system, mucosal immunity of the oral cavity.

pp 137–142

### ANALYSIS OF ECOLOGICAL RISKS DURING ELECTRICBLASTING WORKS

**Sakhanskiy Yu. V.**

The main ecological risks in the mining and cutting working places were considered. The technogenic impact reduction methods on the ecosystems during electric blasting were generalized and systemized.

**Key words:** environmental conflicts, socio-environmental risks, the life support of the population, the principle of rapid development, the North Caucasus.