

## SUMMARIES OF THE ARTICLES IN ENGLISH

## PHILOLOGY

P. 7. *Agapova Nina A.* Tomsk State University (Tomsk, Russia). **KEYWORD OF FOLKLORE SIGN: STATUS, PROPERTIES, SPECIFICITY (LINGUO-CULTURAL ASPECT).** The idea of the keyword is universal: this concept appears in a variety of sciences. Though in each scientific area understanding of the keyword has the nuances and semantic shades, the nuclear component in each case remains invariable: keywords are the basic, most important lexical units "holding" the text unity. The term "keyword" functions in philology, psychology, pedagogics and technique of teaching, even in the field of programming. In the field of linguistic researches keywords are allocated in author's products, cycles of texts or even in discourses. A. Vierbitska introduced the term "keyword" into linguistic science. Her approach is basic: the researcher uses linguo-cultural point of view when allocating and analysing the key lexicon. Thus, the keyword is not a simple semantic "support" organising the text, it also contains cultural information. It is the linguo-cultural understanding of the nature of the keyword that allows to analyse texts sated with cultural information, which folk signs refer to, most fully and adequately.. All researches of the given folklore genre develop in several basic directions: study of the sign from the point of view of genre specificity; taking into account its text features; consideration of the sign as cultural "scenario" and, at last, study of the expressive means used in signs. In the present work the folk sign is for the first time considered through the prism of the keyword, which is the bearer of cultural information and the basis building the text of the sign. A similar approach to the study of the folk sign is brand new. Firstly, the keyword builds the text of the sign from the beginning up to the end. Or as a teaching technique the keyword is the support of the entire text. Secondly, the given lexical unit is a container for cultural information: its functioning in other signs is a proof of it. A significant distinctive feature of the keyword of the sign is that it is capable to model a certain household situation in the person's consciousness. As a rule, individual signs are built around the words that are key ones in other signs, in new variations realising their cultural potential. It is also necessary to note the ability of the keyword to have a determinant. A determinant is a word or a word group giving the keyword additional cultural connotation. Not every keyword can have a determinant: it is characteristic for words that lack enough cultural potential to function independently, and an additional unit is required to compensate for it. The listed properties are basic for distinguishing the keyword of the folk sign.

**Key words:** linguo-culture; folk sign; keyword; cultural; folklore microgenre.

P. 11. *Arsenyeva Tatiana Ye.* Tomsk State University. **COMMUNICATIVE TACTICS OF REPORTING NEWS IN EDUCATIONAL DISCOURSE ("LET'S SPEAK RUSSIAN" RADIO PROGRAMME).** The communicative singularity of educational discourse on radio is supposed to have unique strategies and tactics. In the given article the tactics of reporting news is considered as one of the key communicative instruments of the information strategy in educational discourse. The article describes various linguistic means, which realize the communicative tactics of reporting news in educational radio discourse. The author of the article understands educational discourse as a communicative phenomenon. Its general strategy is spread of knowledge, education and culture. The practical material for the research was the Echo of Moscow's "Let's Speak Russian" radio programme issues. Three key communicative strategies of educational discourse are identified in this article: learning, formation of informative activity of audience, information strategy. All of them are implemented by various communicative instruments. Learning strategy and strategy of formation of audience informative activity are unique for educational discourse on radio. The information strategy is basic for different types of discourses. But in educational discourse it carries out the function of integration of education and information in the Echo of Moscow radio. The tactics of reporting news is the key tactics of information strategy. This tactics is realized by information message, which is connected with the Russian language. The results of the analysis show three communicative instruments of information tactics: 1) "information occasion", 2) "commenting", 3) "advertising". The purpose of using the communicative instrument "information occasion" is to attract attention of the audience by reporting new information. The communicative instrument "commenting" creates an image of the programme whose authors have their own opinion. The characteristic feature of the communicative instrument "advertising" uses preferences of the contemporary process of media convergence. The news is presented with a link to other programs of the Echo of Moscow, where the message has already been delivered. In the given article the communicative instruments were classified, the lexical markers were selected, the functions of instruments were defined. The communicative tactics of information was classified as a link between the mission of mass-media and the mission of education. The analysis of material shows that the tactics of reporting news is realized by special communicative instruments. This tactics carries out specific functions for educational discourse: expanding of audience, attracting new radio listeners, promoting successful contact between audience and authors, marking topic of the program or part of the program.

**Key words:** educational discourse on radio; communicative strategy; tactics; linguistic means.

P. 15. *Yershova Valentina Ye.* Tomsk State University (Tomsk, Russia). **STYLISTIC FEATURES OF CONFLICT TEXTS IN TALK-SHOWS.** The article examines the stylistic features of conflict texts of mass media. The article deals with the texts of Russian television talk-shows. The speech of participants in talk-shows has the signs of public speech, which includes the elements of codified literary language, and the signs of colloquial speech. First of all, it is stipulated by the oral nature of the talk-show; secondly, by specifics of public communication, i.e., specific rules of behaviour in such a situation. The predominance of colloquial speech or public communication elements depends on the programme type (its subject matter) and communicative habits of the talk-show participants. These conditions also influence the formal / informal type of communication. Such sign of talk-show texts as the narration "intimacy" usually vanishes in a conflict situation. Yet, another feature appears: emotion, expression, estimation of communication. Using such means the speaker, as a rule, tends to make their speech persuasive and expressive. In a conflict situation these effects often take the form of verbal shocking behaviour. In this case speakers can disregard the rules approved by society. It can affect the speech level. For example, in such situations speakers can abuse elements of informal style, use expletives and swearwords. That sort of communication leads to speech aggression. In conflict texts one more feature is revealed, typical for public communication in whole. It is the interchange of "standard and expression". It is expressed in the following way: speakers use standard phrases and emotional, expressive elements in

communication at the same time. The conflict in talk-show is centred around a problem, which is a result of different interpretation of some facts, events, etc. And this sometimes results in a clash. In the situation of confrontation the centre of conflict can drift. Opponents can proceed from discussion of the central problem to the level of criticism. Sharp conflicts usually appear in the second case. However, these conflicts can develop in two ways. On the one hand, speakers can resort to speech aggression, disregarding the speech norms. On the other hand, correctness of their viewpoints can be proved by means of using constructive arguments, rhetorical devices, appropriate for the situation.

**Key words:** talk-show; stylistic features; conflict; public speech.

P. 19. *Katunin Dmitry A.*, Tomsk State University (Tomsk, Russia). **LANGUAGE LEGISLATION OF KOSOVO AND METOHİJA IN POST-SOCIALIST PERIOD: SERBIAN VERSION.** In the recent decades the territory of Kosovo is characterized by a strongly pronounced interethnic conflict situation. It now has an inconsistent status, for by the legislation of the Republic of Serbia Kosovo and Metohija is its autonomous region, and by laws of the self-proclaimed Republic of Kosovo is an independent state. Besides, a number of the communities located in the north of the region and directly bordering the territory of Central Serbia are supervised neither by the authorities of the self-proclaimed state, nor by the government of Serbia. Though the sources of Kosovo crisis are caused by a number of contradictions (confessional, economic, political, etc.), one of its main reasons was the ethnic conflict between the two largest communities of the region – Albanian and Serbian. Respectively, study and analysis of language legislation (as an integral component of language policy carried out at the state level and as means of settlement and solution of interethnic contradictions in the region) have essential value for identification of problems in international relations and tracking the dynamics of their condition. In the article the legal acts of the Republic of Serbia regulating the status and aspects of use of languages and alphabets in the country as a whole and in the territory of municipalities located in the Autonomous Region of Kosovo and Metohija are considered. Documents of the municipal level are provided created by the legal canons of the Republic of Serbia, both for the communities located in the north of the region and not recognizing the government of the self-proclaimed Republic of Kosovo, and for the communities of the mainly Albanian part of the region that have alternative – Albanian and Serbian – authorities. As a whole the analysis of regulations on official use of languages stated in laws of the municipal level of Kosovo and Metohija created by the legal canons of the Republic of Serbia shows the significance of this issue for this region. Almost all the considered documents of the 1990s contained articles on the official status of languages and alphabets. In areas mostly populated by Albanians, obligatory bilingual official communication was provided. In latest documents this linguistic parity is not so consistent, which can be explained by the status of its originators, who became displaced persons (refugees) after the NATO forces entered the region. On the other hand, the equality of the Serbian and Albanian languages and alphabets as stated by most of the laws is in many respects declarative, as now Serbians and Albanians practically do not live at the same territories, and the process of creation of a new monoethnic municipalities realized by the authorities of the self-proclaimed Republic of Kosovo in execution of recommendations of UNMIK only aggravates the observed tendencies.

**Key words:** sociolinguistics; language policy; official language; Yugoslavia; Serbia; Kosovo.

P. 25. *Nagornaya Victoria.* Tomsk State University (Tomsk, Russia). **VARIATION OF SYNONYMS IN BIBLICAL TEXTS IN M. LUTHER'S TRANSLATION.** The article is devoted to one of the modern branches of linguistics – variology. The term "language variation" in the article is used in broad sense, implying synonymy of lexical units. The object of the research is biblical texts in M. Luther's translation; the subject is the variable synonyms picked out by the author of the article. The topicality of this research is conditioned by the relevance of the development of variology, as well as by convergence of synchronic and diachronic aspects of the language research and due attention to the facts concerning dynamics and transformation of the language. In the article the dynamic approach is realized for the initial text of translation of the New Testament created by Luther in September 1522 is compared with the author's last edition prepared in 1545. According to the classification of synonyms suggested in the Duden dictionary of German synonyms, variable synonyms in the biblical texts in M. Luther's translation are considered as regional, group, subject and historical synonyms. The use of the regional synonyms for Luther is especially topical as the target language of the Bible is based on the language practice of several offices of Germany. For example, in the text of 1522 Luther uses the West German word *Pfenning*, while in a later edition he changes it for *Grosschen*, the word typical of the southern part of Germany. Examining group synonyms, the following observation is taken into consideration: oral speech was the tool of the simple people, and written form belonged to the highest strata of the population of Germany. In this regard, lexical units functioning in oral speech, and lexical units most often found in written speech belong to group synonyms. For example, the colloquial expression *gab er den geyst auff* and the verb *verscheiden* differ mostly in their stylistic colouring. It is worth considering the words *Satan* and *Teufel* as an example of the subject synonymy which implies identical semantic meaning and a different connotation of lexical units. Historical synonyms are words which have similar lexical meaning in different historical epochs, for example, *weib* and *Gemalh*. The research states that the borderline between regional, group, subject and historical synonyms in texts of the Bible translation is indistinct. Many of the lexical units are at the same time regional and group, regional and historical, or group and subject. The diachronic analysis makes it possible to draw the following conclusion: Luther's primary purpose was to provide availability of the text of the Bible translation to all layers of the population of Germany, while over time he aspires to enrich the German language by using variable synonyms.

**Key words:** variation; synonyms; the German language; texts of the Bible.

P. 29. *Stepura Svetlana N.* Tomsk State University, Tomsk Polytechnic University (Tomsk, Russia). **1930S RUSSIAN TRANSLATION OF JAMES JOYCE'S NOVEL ULYSSES, FIFTH EPISODE.** For the first time the specificity of the translation of James Joyce's novel *Ulysses* made in the 1930s by the team of the first translation association headed by I.A. Kashkin is studied. The material of the analysis is the fifth episode of the novel. It takes a special place in the novel as *Ulysses* is Bloom. It is in this episode that Bloom, the title character of Joyce's novel, first reveals to the reader. The episode translation is studied in the aspect of its compliance with the complex plan of the author, which he explained in special schemes of the novel. The basis of the fifth episode is the ninth chapter of Homer's *The Odyssey* – "Lotus eaters". Besides, the episode is defined by such semantic dominants as botany, chemistry and the Eucharist. The given episode is characterized by the lack of action; its task is to specify the value of leisure as it gives an opportunity to best show the inner life of the character. Therefore, the entire episode represents the walks of the main character, Bloom, along the streets of Dublin. Lotus is famous for its narcotic effect. Joyce used the lotus influence allegorically. It is shown by the reference to heat and hot countries where the climate relaxes people and makes them as lazy as if they were under the influence of the lotus. So there appears the floral theme that runs through the entire episode. We find numerous references to flowers. They are the name and nickname

of the main character that are not translated; idioms; names of flowers made-up by the author, etc. In a sense, lotus is compared to a drug. In the episode the notion of the drug is represented by mentioning chemical substances in the pharmacy Bloom enters, as well as through Eucharist, which by Joyce has an impact similar to opium on people. Bloom's loneliness is equated to the condition of narcotic intoxication, his desire to escape from the reality, which is even more obvious after his internal monologue in the pharmacy. When translating the monologue and the scene of the Eucharist in church, V.M. Toper replaced some words as idioms and author's word-formations cause difficulties in the transformation process of the material into Russian. We noted that the problem had been solved creatively – idioms had been transferred by the corresponding Russian equivalents, author's word creation found reflection in the work of the translator. The choice of the translation of a certain word was based on the episode content, not on its dictionary meaning. Thus, the comparison of the given translation with the original allows us to say that V.M. Toper preferred the creative type of translation typical for the Kashkin group of translators, therefore, not all of the details and nuances of the original text had been translated into Russian. But, on the other hand, V.M. Toper managed to reproduce the main idea of the fifth episode of the novel that goes back to chapter nine of Homer's *The Odyssey*, "Lotus eaters".

**Key words:** James Joyce; *Ulysses*; translation; I.A. Kashkin.

P. 33. *Tubalova Inna V., Emer Yulia A., Perevalova Darya A.* Tomsk State University (Tomsk, Russia). **CONFLICTOGENIC TEXT: COGNITIVE AND LANGUAGE FEATURES OF GENERATION (EXPERIMENTAL STUDY)**. In the article results of experimental modelling of text generation to study communicative strategies of conflict realization in virtual communication are presented. Virtual communication is realized in a variety of communicative spheres, their internal organization reflects the structure of real communication. The described experiment assumes an explication of models of conflict daily communication in the virtual environment. At the stage of planning the authors based on the facts that specifics of text realization of the conflict is defined by the features of discourse it is realized in. The target audience was students of Tomsk (99 people; including 58 Humanities students, and 41 non-Humanities ones) aged 18-23. The aim of the experiment was to reveal the communicative strategies of response to a conflict text stimulus in daily virtual discourse. The hypothesis was that in the consciousness of informants there are discourse-oriented models of speech reaction to a conflict stimulus. The level of conflictogenic potential of the text that creates the scenario of the conflict defines the type of the reaction conflict scenario: joining the conflict or resolving it. The type of conflict reactions depends on the professional sphere of respondents. As experimental material a fragment of chat communication in text representation was offered, on the basis of which respondents modelling natural communication of a discourse of a given type gave remarks according to discourse rules. In the fragments shown to informants the scenario of starting the conflict is fixed. The reaction remarks received as a result of the experiment fixed options of response: various forms of resolution of the conflict or getting involved into it. In the article the analysis of reaction texts on two conflict-stimulating posts (<http://gorod.tomsk.ru>) is given in the aspect of formation of speech models of response to the conflict. The experiment confirmed the hypothesis that the level of the conflictogenic potential of the text, which creates the scenario of the conflict, defines the type of reaction to the conflict scenario: joining the conflict or resolving it. The intra text status of conflictogenic potential proves by the fact that in experimental conditions the number of conflict strategies prevails. Thus, the number of reactions to conflict depends on the specifics of the stimulating text, in this case - the object of reflection, and on the way of verbalisation of the stimulating text. The hypothesis about distinction of reactions of Humanities and non-Humanities students was not sufficiently confirmed. Reactions to the conflictogenic text of both groups are similar, distinctions are scarce and concern some particulars.

**Key words:** conflict; virtual communication; discursive model of text generation; communicative strategies.

## PHILOSOPHY, SOCIAL AND POLITICAL SCIENCES

P. 39. *Gorbatova Viktoriya V.* Moscow State University (Moscow, Russia). **RADICAL ISLAMIC ORGANIZATIONS IN CONDITIONS OF POLITICAL ISLAM "RENAISSANCE" IN ARAB EAST COUNTRIES**. In modern conditions the questions connected with Islam and its place in the political process of separate states, regions, and its role in universal political events are the subjects of broad and sharp discussions. In connection with a number of "revolutions" in the Arab East when the representatives of the radical Islamic organizations came to power to change the secular regimes this topic got a special urgency. The last globalization tendencies defined consequences of these events to the whole world. They are characterized by the growth of radical Islam ideas and by the strengthening of the activity of network Islamist structures worldwide. Despite the increased interest to these problems the categorial basis for understanding is not completely defined. Such terms as "political Islam", "Islamic political radicalism" and "radical Islamic organizations" have been firmly included into a scientific context without exhaustive and conventional interpretation. The fact that political Islam, which is often treated by experts as a synonym of Islamism and Islamic fundamentalism, along with theoretical, has an expressed practical orientation is seldom emphasized. This peculiarity relates political Islam with the Islamic political radicalism, but does not identify with it. The latter phenomenon has its own subjects (certain Muslim states, parties, movements, and groups). The radical Islamic organizations are a kind of such movements. They can be characterized as religious structures aimed at practical embodiment of their slogans, principles and ideas. Within the period of "political turbulence" critical for the Arab East region the practical part of political activity of the radical Islamic organizations moves to the forefront. Now their representatives actively participate in the competition for the secular power, and in a number of states they have already gained appreciable victories (Tunisia, Egypt, Libya). There is simultaneously a natural transformation of institutional bases and forms of Islamists activity. They turn from religious structures into political parties, changing their orientation from the corresponding levels of political relations to regional problems. Under these conditions there is a process of "the new elite" creation in the Middle East states, when the elite is formed mainly from the Islamists representatives. The "Arab East Islamization" and the revival of Islamic political radicalism in the region primarily lead to mass migration of the population and to the emergence of the internal political conflicts, including the real prospect of military force use. The situation specified brings new calls for the Muslim and non-Muslim states (including the Russian Federation).

**Key words:** radical Islamic organizations; political Islam; Arab spring.

P. 42. *Khvastunova Yulia V.* Gorno-Altai State University (Gorno-Altai, Russia). **METHODOLOGICAL ASPECTS OF RELIGION STUDY (BY EXAMPLE OF RELIGIOUS ENVIRONMENT IN ALTAI REPUBLIC)**. Today more researchers understand the necessity of the use and working out of a complex approach to study religion. In a number of cases such phenomena as feelings, belief, mystical experience, emotions, and religion itself fall out of the main target of research. This leads to an adequate ques-

tion about translation and introduction of scientific terms in the sphere of description and study of religion and vice versa. The problem of typology of religious traditions cannot be sufficiently explained, because it involves the necessity to find both the appropriate scientific notions and the introduction of scientific terms into the science and the consent to this of the scientific society. The necessity of conceptualization (fixation in notions) simultaneously leads to reduction of live religion to almost lifeless theories in religion studies. Polymethodic study of religion is especially important in the light of the introduction of an educational course of Basics of Religious and Secular Ethics (BRSE) in the polyethnic and polyreligious region (the Altai Republic), and of the introduction of topics and discussions about new religious movements (NRM). It is also important to know and study minorities in the religious sense and regional specific features. In the Altai Republic, for example, a specific ethnocultural religious environment should be a separate field for the research. Most of the local Altai beliefs are represented by the activity of social organizations ("Tengry", "Ene til", "The Altai Spiritual Centre", etc.), although it is now that the processes of their reforming into religious organizations have begun. An example of this work is the activity of organizations that popularize the ideas of "White Belief", burkhanizm and tengrianism. The question about understanding and giving explanation of NRMs is still a critical issue. Important features of NRMs are the following characteristics: takeover of the confessional space and its distortion, specific properties of novations, appearance of new indicators, cultural pluralism, etc. Apart from the traditional religions, such as the Russian Orthodox Church, the Roman Catholic Church, the Islamic organizations and different Protestant religious organizations, the local pagan, shaman, burkhanism, tengrianism and White Belief (Ak Dian) organizations work. Part of them are registered in the status of a social organization, for example, "Tengri" and "The Altai Spiritual Centre". White Belief, burkhanism and some other directions still do not refer to any religious class. It is suffice to mention the problem of extremism. In the Altai Republic this problem exists in the form of Islamic religious extremism and nationalism on the part of some Altai religious leaders. The religion, in its true sense, is a very strong mechanism that resists extremism. It is the religious consciousness that is capable of solving and mitigating the problem of growth of extremism actions in the 21st century. Still, we see sometimes that fake fanatic speculations, composed of chaotic bits from different religious beliefs, are confused with true ideas of religion.

**Key words:** methodology of studying religions; religion study; typology of religions.

P. 45. *Khitruk Yekaterina B.* Tomsk State University (Tomsk, Russia). **CONCEPTUALIZATION OF RELATIONS BETWEEN SEX AND HUMAN NATURE IN PATRISTIC TRADITION OF 2 – 7 CENTURIES.** The article describes a define period of the Christian anthropology formation – 2-7 centuries. Attention has been paid to reveal and conceptualize the ontological status of sex differentiation. The context of formation of Christian anthropology position in the indicated period is revealed as "Christian Platonism" in this work, i.e., a combination and opposition of two totally different presentations about the world and human construction. The Christian doctrine originally appears under presentation about the human body as an essential part of the human called to transformation and spirituality as human nature in general. On the other hand, the Platonic world view insists on the idea of the flesh overcoming due to askesis. These two different and discordant sets were interconnected in the early period of formation of the Christian theory. Thus, Origen said human bodies would transform and take a new spiritual way of existence after the future total resurrection. They would not be burdened by "rough" flesh, digestion system and sex distinction by Origen. So, on the one hand, the human body transforms, on the other one, it is not the body in the original meaning. This detail was detected and immediately attacked by some St. Fathers – Jerome of Stridonium, Epiphanius of Salamis, Methodius of Patara. Sex difference was recognized as an inalienable attribute of the human body and, in general, human nature. However, Gregory of Nyssa in his anthropology does not acknowledge sex as an inalienable part of the human. St. Gregory speaking about God's image characterizes sex difference as something alien to God's image, a protection mechanism in case of the Fall. By Maximus the Confessor the principle of difference, including the sex one, is positive. The world was made by God as a number of differences and oppositions the human is called to combine and conciliate. The results of transformations are not elimination of differences, but their total and final conciliation. Thus, sexual differentiation is essential for human nature and its components cannot and should not be overcome. So, the analysis of formation of patristic anthropology in 2-7 centuries shows a clear tendency of realization of originality of the Christian doctrine about the human, the first to theoretically postulate the essential place of sexual duality. The realization is formed during a complex process of separation of the Christian understanding of the human from the non-Christian, first of all, Platonic attitude to the body.

**Key words:** sex; Platonism; anthropology; eschatology; image of God; patristic tradition.

P. 51. *Shpagin Sergei A.* Tomsk State University (Tomsk, Russia). **POWER INSTITUTIONS IN TOMSK REGION: POLITICAL AND LEGAL ANALYSIS.** The article presents an analysis of features of the structural organization and functioning of the political power in Tomsk Region in 2006–2011. Regulatory legal acts and other official documents of the region, as well as periodicals materials, are investigated. At the heart of research is R.F. Turovsky's technique, according to which in studying the institutional design of the power in the Russian regions it is necessary to concentrate on interaction of governors with legislative assemblies, local governments and territorial bodies of federal departments. Though the Charter of Tomsk Region provides various mechanisms of parliamentary control over executive power, these norms do not work in practice. But the governor has a set of real possibilities of influence on the work of the regional parliament. The right of a legislative initiative of the Governor of Tomsk Region and his control over the United Russia Party faction in the Legislative Duma is one of the most used opportunities of such influence. The head of the region dominates over the bodies of the local government. The proofs are experiences of introduction of the post of city manager in large municipalities and establishment of real control of the governor over election of the mayor of Tomsk. For a long time the governor influenced the process of appointment of heads of federal bodies in the area thus securing their loyalty. Only in the second half of the 2000s this influence was lost. Since then law enforcement agencies of the region became one of the means of federal control strengthening over the area and Tomsk elite. The relations with the federal level of power are the main factor of region's condition and development. In search of the reasons of high stability of the regional power in the article special attention is paid to numerous advisory and coordinating bodies by the Governor and legislative assembly of the region. They are the Council of Public Initiatives (Sovet obtshestvennyh iniciativ), Youth Parliament (Molodezhny parlament), Public Chamber (Obtshestvennaya palata), Council of Municipalities (Sovet municipal'nyh obrazovaniy), and tens of interdepartmental commissions, coordination councils and committees. Their activity allows to coordinate interests of various groups outside the legitimate representative bodies and to correct the political agenda. Such bodies can provide for the needs of official power institutions to communicate within the structure and get feedback from regional community thus partially replacing public policy. The conclusion is drawn on insufficiency of official documents as the empirical basis of research of regional policy.

**Key words:** power institutions; governor; Legislative Duma; local government; coordinating and advisory bodies.

## CULTUROLOGY

P. 57. *Verevkina Irina D., Shagov Nicolay V.* Tomsk State University of Architecture and Building (Tomsk, Russia). **SOCIO-CULTURAL PREREQUISITES OF HOUSING STOCK FORMATION IN RUSSIA (1917 – 2010)**. Housing construction was one of the developing direction in architecture not only in our country but in many world countries in the 20th century in order to satisfy the increasing social needs. These needs were satisfied only taking into account the basic economic and political state power interests. The basic social problem of people began to be solved on the federal level. This problem was to ensure housing for all people in Soviet Russia, it was the first experience in the history of developing architecture. The above mentioned aspects required regular search for the rational type of dwelling. The 1920s slogan was: a new type of dwelling to the socialist country. New socialist society needs new forms and types of housing to satisfy new household and cultural needs of the population. The ninety-year period of Russian housing stock development was full of changes due to many factors, among them were: intensive development of the existing cities and building new ones in the industrial region of the country; a sharp increase in urban population because of its migration from the country; the state policy to develop this or that type of housing property; the economic conditions of country development giving opportunity to form housing stock with wide introduction of progressive achievements in the sphere of building and architecture; world policy, and many others factors. The above mentioned conditions influenced greatly the rate and amount of building in different historical periods of the new Soviet state development. The housing fond of our country from 1917 to 2010 was formed with close participation of the state itself and government structures. Over the entire Soviet period the total housing area per one person changed from 4.6 m<sup>2</sup> to 23.0 m<sup>2</sup>. Construction of housing was regulated by the Party and government resolutions and statements. About 400 political documents related to housing formation were adopted for that period. They played a significant role in the development of Russian architecture in the housing construction sphere. The authors of this article systematized the normative and government documents and on their basis defined four periods in the housing stock development in Russia. The long-term goal of the government is to find a mechanism allowing to build 1 m<sup>2</sup> of living space per one person in our country.

**Key words:** housing; housing policy; normative and operative documents; socio-cultural factors; Soviet architecture.

P. 60. *Divakova Nataliya A.* Altai State University (Barnaul, Russia). **MUSIC AND SOUND CAPABILITIES OF BARNAUL RELIEF (BY EXAMPLE OF SCULPTURAL DECORATION OF FACADE OF HOUSE OF ALTAI MINING DISTRICT CHIEF)**. In this paper we propose a new approach to analyzing landscape-cultural elements, which could eventually lead to the creation of music and sound model of a place, a city, a region. A synthetic route contributes to creating a complete picture of sites. It is based on selection of the main features for characterization in order to achieve the integrity of its perception, and personalization features, that is, the absence of any scheme. Creation of such features should be based on information selection to describe the locations selected subjectively by each observer and the dominants (symbols) for each individual site and their further possible combination through internal and external textual means. The main final goal, which regulates the semantic content of the site features, should not be completeness, but integrity. That is why we have a right to talk about the selection of features rather than their ordering. The selection process is subjective, therefore, another feature of this complex is the multiplicity of geographical features. The most obvious elements of the cultural landscape of the city are monuments. They, to a greater extent, determine the look of the place, its specificity. An important role in the look of the place are style forming sculptural elements, organizing and decorating the facades of buildings. Sculptural reliefs of Barnaul have a number of common features that suggest the formation of a peculiar shape of the city. Among them is a symmetric dominant organizational structure. Statement of the problem of order and symmetry with respect to any kind of human activity dates back to the objective laws of the universe, the essence of which is rooted in the constant balance between the creative rhythm of the universe and the forces seeking to disrupt the order, to plunge it again into its original state. Such objectivity is observed only in music, so musical sound analysis of the sculptural decoration of the House of the Chief of the Altai Mining District of Barnaul, a high relief in the attic, is possible. Basing on the concept of ornament outlined by Ye.V. Sintsov, the author comes to the music and sound characteristics of all other sculptural elements that adorn the facade of the building, and change the understanding of this landscape-element. Thus comes an obvious conclusion, which consists in the fact that the possibilities of sculptural reliefs are greater than it is commonly believed, from a purely decorative function to the function of creating a special meta-space, promotion of various games with the spatial characteristics, which inevitably entail different kinds of terrain modelling culture.

**Key words:** music; landscape; ornamental; integrity of landscape of culture.

## HISTORY

P. 65. *Grin. Lada V.* Kuban State University (Krasnodar, Russia). **INFLUENCE OF AMERICAN IMMIGRATION LEGISLATION ON JEWISH DIASPORA FORMATION IN USA (MIDDLE 17 CENTURY – 1914)**. There are several periods in the history of American immigration. According to a researcher S.V. Filippov, 4 periods are distinguished. First period (up to 1781). This period covers unrestricted populating of the country that was taking place until the establishment of the USA as a new independent state. Second period (1781–1830). During this period immigration was not regulated or constrained by the state in any way. Third period (1830–1875). During this period the entry of new migrants was regulated by the local state legislation. Fourth period (1875 – present). During this period immigration is thoroughly controlled by the federal government. The Jewish ethnic community in the USA comprised three large immigrant groups: 1) Hispano-Portugal (from the middle of the 17th century to the first quarter of the 19th century); 2) German (from the 1820s to 1880s); 3) Eastern European (from 1881). Overall, from the legislation point of view, one could characterize the researched period (middle of the 17th century – 1914) as a favourable period for Jewish immigrants. The main differences between the waves of immigration were the scale and the conditions of immigration to the USA. As far as the first, less numerous Hispano-Portugal group of immigrants is concerned, the researchers do not possess abundant information pertaining to the conditions of immigration. In case of the German group of migrants, on the other hand, researchers are able to source the information from the Castle Garden Immigration Station in New-York, which used to process the immigrants in 1820–1890. Castle Garden used to function as a charity organisation, providing shelter and a warm welcome to those newly arrived. It also provided the immigrants with practical advice on the social services available for the newly arrived. At the end of the 19th century, about three quarters of all immigrants arrived in the USA via the New-York Port. A new federal station Ellis Island was built in 1892 for processing of the immigrants. This station

had a new policy of filtering out those with infectious diseases, unprivileged or disabled, as well as labourers on a contract. The Ellis Island Station became a place of rejection for many Jewish families and was witness to many heartbreaking stories. Nativism on the part of the well-established American residents could be pointed out as a prominent feature of the Jewish immigration of the time. It grew particularly strong at the end of the 19th century and forced the Federal Government to introduce a restrictive policy. On top of that, each wave of Jewish immigration stumbled upon a negative attitude of the previous, well settled and americanised wave of Jewish immigration. These attitudes of the older Jewish immigrants correlated with the general attitudes of the American public and initially caused unfriendliness and even hostility among the Jewish community. However, as the new-comers adapted to the American way of life, these negative attitudes became less and less noticeable. Immigrants became assimilated and adapted to the economic, cultural and linguistic aspects of their new life. While developing their ethnic cohesion as American Jewish, they continued the traditions of their former homeland, at the same time connecting to their new ethnic identity as Americans.

**Key words:** immigration; adaptation; restrictive policy; anti-Semitism; nativism.

P. 69. *Litsareva Yelena Yu.* Tomsk State University (Tomsk, Russia). **EUROPEAN UNION MEMBER STATES ON RECOVERY FROM 2008 ECONOMIC CRISIS.** Economic and financial crisis of 2008 became a major test for the EU and for Economic and Monetary Union. Recession in Europe was more profound than in the United States. On the eve of the crisis there was no clear strategy for economic development in the European Union, and instruments of macroeconomic regulation were weak. European countries, emphasizing attention more on internal problems at the initial stage of the crisis, had not demonstrated a desire to coordinate or carry out any general steps. But later, during the world economic crisis, some countries of the EU made joint efforts both to prevent crisis and its consequences, carefully analyzing the causes and developing recommendations and new solutions. With the development of anti-crisis policy, the EU demonstrated clearly the Anglo-Saxon and continental models. The Anglo-Saxon model included the state's impact on the financial sector including nationalization of troubled banks. In the continental model there were two approaches: 1) a powerful government intervention in industry for economic recovery (French), 2) more restrained attitude of the state (German). After the deepening of the financial crisis in the spring of 2010, it became increasingly clear that significant changes are required for the EMU management structure, that EMU cannot function effectively. So it was necessary to reform the European financial system and labour relations. Accession of new members significantly affected the functioning of the European Union. It primarily concerned the expanded euro zone and, first of all, the differentiation of the participating countries. Therefore, the adoption of ten members, and then another two without a proper reform of the organization as a whole could well lead to difficulties or to paralyze all further work. To put an end to projections concerning the further fall of euro and the collapse of the euro zone, to avoid the situation that had arisen in Greece, a European stabilization mechanism was developed. In December 2010 at the Summit of European Union in Brussels member states had decided to establish a permanent stabilization fund aimed at maintaining the stability of the single European currency and national economies. The countries of euro zone set a stabilization mechanism, which could be used if necessary to ensure the stability of the euro zone as a whole, but the provision of any requested financial assistance should be subject to strict conditions. A permanent fund was to be established by June 2013.

**Key words:** economic and financial crisis; Economic and Monetary Union.

P. 77. *Nekrylov Sergey A., Fominykh Sergey F., Merkulov Sergey A., Litvinov Aleksandr V.* Tomsk State University (Tomsk, Russia). **SIBERIA RESEARCH INSTITUTE AND STUDY OF HISTORY, ARCHEOLOGY AND ETHNOGRAPHY OF REGION (1919-1920).** The article is devoted to the reconstruction of activities of History and Ethnography Department of the Institute for Research in Siberia (1919-1920). On the basis of published and unpublished sources, the work of the section of History, Archeology and Ethnography is described at a congress in January 1919 during the Civil War, it was to organize the Institute for Research in Siberia, in Tomsk. The speakers at the congress were K.D. Loginovsky, V.I. Anuchin, B.P. Denikel, A.D. Kryachkov, M.M. Khvostov, V.F. Smolin, A.N. Lipsky, N.A. Zinevich and P.G. Liubomirov. Reports by the participants of the Congress are analyzed. They reflected the state of knowledge of the history of Siberia and outlined the prospects for further researches. The section was in favour of organizing the collection of materials on the history of the war and the revolution and opening of the Department of Ethnography in Tomsk University. History and Ethnography Department of the institute planned a long-term plan of activities. In addition to uniting the institutions and scientific societies involved in the study of Siberia, the Department had to sum up of what had been done regarding the collection and processing of materials on the history, archeology and ethnography of Siberia, republish inaccessible materials, identify and protect ancient monuments, train researchers. Expeditions were planned to collect ethnographic, dialectological and other materials, archaeological excavations and publication of papers. 17 meetings were held, at which, in addition to the reports a wide range of issues were discussed related to the study of the region. The funds of the Institute helped to organize a series of archaeological, ethnographic and dialectological expeditions. The researchers were trained. By the initiative of V.F. Smolin works were conducted on drawing up the archaeological map of Siberia. This map with explanatory text provided an opportunity to estimate the then available archaeological material of Siberia. S.I. Rudenko headed a commission that studied the composition of the tribal population of Siberia. The result was a compilation of ethnographic (tribal) cards of the Yenisei Province of Tobolsk, a number of districts in Tomsk and Altai regions. These materials were scheduled to transfer to the Academy of Sciences. Professor A.D. Grigoriev studied old dialects of Siberia, and Professor B.P. Dennike studied ancient monuments and wooden architecture. The Department also worked on the problem of preservation of the archives of Tomsk. The summary of the Department activities over the brief period of its existence is given.

**Key words:** science; history; archeology; ethnography; Siberia; Tomsk.

P. 82. *Fendel Yelena R.* Tomsk State University (Tomsk, Russia). **MISSIONARY SCIENCE AND HISTORICAL AND ETHNOGRAPHIC MUSEUM: CREATION PREHISTORY OF KAZAN ECCLESIASTICAL ACADEMY MUSEUM.** This article considers how new means of knowledge objectification emerge in the process of academic education disciplines development. The particular case is creation of an academic museum as a representation means of principal new content that appears as a result of interaction of theoretical and empirical levels of knowledge. The example is the prehistory of the Kazan Ecclesiastical Academy Museum creation. Academy museum creation was associated with common academic education, as well as the specialized profile and separate disciplines, as stated by Academy Regulations. Every academy had its own specialization profile. Kazan Academy had missionary specialization. First academy museums were opened as the Church Archeology ones after introducing Church Archeology discipline under 1869 Regulations. The subject needed visualization. Kazan Church Archeology lecturer N. Krasnoseltsev sought for museum

opening in 1873 and 1881 but he failed. He returned to the question in 1888. It was a crucial point for the academy and its missionary specialization as the destiny of the specialization was in question. The Kazan missionary specialization was informal in 1869–1884. Therefore it developed the theoretical direction and diverted from the missionary practice. New Regulations of 1884 allowed officially the specialization. Official authorization only opened possibilities for development but had no effect on the bias. In 1887 one student entered the Tatar Department and one - the Mongolian one. On the other hand, in the second half of the 19th century Orthodox activity increased because of the Orthodox Missionary Society (reformed in 1869) support. Academy professors created some projects to overcome the crisis between theory and practice. One of them was the museum project. But the original Kazan museum idea was transformed. They created a project of the Church Archaeology and Missionary Ethnographic Museum. So, ethnography became the museum profile object of missionary disciplines as an applied part of missionary specialization. The new of the ethnographic program of 1884 Regulations was the inclusion of unwritten peoples of Siberia that attracted attention of the Kazan Translation Commission within the development of missionary practice. So, peoples whose cultures experienced transfer from oral to written speech joined the mission. As a result a new cognitive meaning appeared. It was "not sufficient to take up... (knowledge) from books and lectures". Missionary ethnographic museum was a new representation means to provide new facilities by objects that reflected aboriginal everyday life and national character. It replaced field work for some students.

**Key words:** history of Russian higher education; missionary sciences; ecclesiastical academy museums.

P. 85. *Kharus Olga A.* Tomsk State University (Tomsk, Russia). **STATE POWER REORGANIZATION IN RUSSIA IN EARLY 20 CENTURY: PROJECTS AND REFLECTION OF TOMSK LIBERAL INTELLIGENTSIA (1905 – FEBRUARY OF 1917).**

Liberals' paying special attention to the problems of power institutions reorganization was due to their inner convictions that only the state that stood guard over public interests could conduct reforms by the means, which made arbitrariness and breach of law impossible. As far as the issue of power organization is concerned the ground of Tomsk liberals had been formed by the beginning of the first Russian revolution and drawn up in the programme since the local department of the Cadet Party was established in November 1905. Believing that the constitutional monarchy was the most optimal form of governing for Russia Tomsk cadets put emphasis on formation procedures and plenary powers of the State Duma as a public representative office. Revolution of 1905–1907 changed the views of the liberally thinking intelligentsia about how various strata of society were ready to realize the projects of state power reorganization. Understanding the lessons of revolution that revealed vividly acuteness of social and political confrontation in the society resulted in the refusal from euphoria in the estimation of possibilities to realize political reforms on the base of democratic principles but at the same time strengthened the conviction of liberals that mature civic consciousness was necessary to develop. Measures directed at the increase in both legal and general culture of the population were considered to be an extremely important component of the process of political organization reformed. In general, analysis of the views of the liberally oriented initiative minority of Tomsk about the perspectives of power institutions reorganization in Russia at the beginning of the 20th century makes it possible to conclude that they had an invariant core oriented at the formation of a lawful state and the use of only legal means to achieve this purpose. Basic principles and techniques of improving the forms of state power suggested by theoreticians of liberalism were characterized by the obvious commonality and remained unchanged, which determined the style of liberals' political thinking itself, in spite of individual nuances of interpretation typical of intelligentsia representatives.

**Key words:** political modernization; lawful state; liberalism.

P. 93. *Sherstova Ludmila I.* Tomsk State University (Tomsk, Russia). **ABORIGINAL POLICY OF MOSCOW TSARDOM IN SIBERIA: PROBLEM OF SYNTHESIS OF SOCIAL AND POLITICAL INSTITUTIONS IN 17 CENTURY.**

The 17th century was a controversial period in Russian-aboriginal relations. On the one hand, there were some objective factors that contributed to the integration process of aboriginal population into the structure of Moscow Tsardom and made this process relatively easy; on the other hand, insurmountable obstacles for this process appeared quite frequently. It is crucial to understand that before they met each other, both Russian social and state system, and Siberian aborigines with their social structures, had already passed a fairly complicated way of development. Moscow brought to Siberia the only known form of interstate relations – the tributary system, but a large part of aborigines were already familiar with such kind of relations long before Russians came to their lands. That was a common Eurasian political legacy, which Moscow had borrowed from the Golden Horde and then transformed, and which Siberian natives (or their substrates) met long before that, while being a part of Central Asian states of ancient and medieval times. Moscow could not bring to Siberia a set social class structure, because at that time it had not formed yet. But it showed some principles of social organization. Based on the needs of the state, Moscow authorities determined a special form of tribute for Siberian natives – yasak, and a registration to the tributaries district (ulus, zemlitsa, kin). Thus, they took their place in the social class structure of Moscow Tsardom, based on estates principle of organization. This was a consequence of the weak Russian ethnos consolidation and initial form of building the Russian State as a multi-ethnic society, where nationality was substituted by the social class. That was the fundamental difference between Moscow and the then existing Western European states that also came to an end of centralization process, but kept the principle of mono-ethnic states. While the interaction between the Moscow socio-political system and local governmental or potestarian structures took place, in the 17th century their synthesis had also begun, and the common Eurasian legacy made this process a lot easier. Therefore Siberia of the 17th century was seen by the authorities as a part of Moscow Tsardom, as a part of the "royal estates, ulus" and its indigenous population was seen as an indispensable element of Russian society. Due to the "Eurasian features" of the medieval Russian state and the "open" character of the Russian ethnos, as indeed most of Siberian ethnicities had such a character, the aborigines were not treated with any kind of isolationist mood, and no policy delimiting them from the rest of the Russian population was held. Nationality was substituted by social class both mentally and legally, and this fact inevitably accelerated their incorporation into the emerging nationwide social body, creating better conditions for their further development within the Russian state.

**Key words:** Siberia; aborigines; Moscow; policy; synthesis.

P. 99. *Yushnikov Aleksandr V.* Tomsk State University (Tomsk, Russia). **RUSSIAN CONSERVATIVE JOURNALISM OF 1860 – EARLY 1870S ON FRENCH REVOLUTION.** Russian conservative thought of the second half of the 19th century due to a number of reasons was inferior to the other two socio-political trends – the liberal and the radical ones in terms of quantity and quality of publications of historical and journalistic nature. This is largely due to the fact that being close to the throne and pursuing conservative goals, proponents of this trend seldom saw much sense in the active epistolary activity, especially when it came to some particulars. Of course, the conservatives were brilliant masters of literary and journalistic expression. However, when they turned to history, they concentrated

mainly on the domestic one. Works on foreign history in this environment were negligible. In particular this applies to publications on the French Revolution. If among the supporters of other areas of social and political thought of the second half of the 19th century the interest in the revolutionary events in France at the end of the 18th century was high, the conservatives, in general, did not go beyond stating the fact that the French Revolution was evil. As an example, an article entitled "The lessons of history. Essays on modern France" (1871) by a then famous Russian journalist E.M. Feoktistov (1828-1898) who developed from a liberal to a staunch conservative. One of the few people dealing with this issue in more detail was N.A. Lyubimov (1830-1897), a renowned physicist and conservative publicist. On the pages of "Russian Herald" starting with 1880 he published a series of articles on the French Revolution entitled "Against the current. Conversations about the revolution. Sketches and essays in conversations of two friends" that he later revised and published as a book, *The Collapse of Monarchy in France* (1893). There NA Lyubimov directly stated the reason that prompted him to turn to the subject, noting that the edge of the 1870s-1880s was of a distinctly revolutionary character, and those who then proposed to make the constitutional transformation of the state played for the revolutionaries, . He thus emphasizes the importance of his work, against the revolution as such by example of revolution in France. His articles rejected revolution and appealed to the contemporary reader by drawing parallels with the Russian reality of that time. The author showed great erudition for a journalist in this matter, a good knowledge of the sources and the historiography of the issue citing both. But, like any work of journalistic nature, it was written with clear accents (in this case – conservative ones). In this sense, it is definitely biased. But this bias is of interest in this context.

**Key words:** Great French Revolution; conservatism; journalism.

## LAW

P. 101. *Kazakov Vladimir V.* Tomsk State University (Tomsk, Russia). **ON ORGANIZATIONAL AND LEGAL ISSUES OF FINANCIAL SECURITY IN STATE POWERS REALIZATION BY LOCAL GOVERNMENTS.** The current legislation on budget and on local government presumes that means of local budgets should first be directed on the local issues. In the conditions when practically all municipalities became subsidized, it is obvious that additional financial means are necessary for realization of the state powers transferred to local governments. Otherwise, spending municipal money on solving the questions that are not local can result in ignoring the problems of local population, and, as a result, a negative social situation in municipality, growth of municipal debt. Today one of the fundamental principles of giving certain state powers to local governments in the legislation of the Russian Federation is the principle of economic and financial security. It means that endowing local governments with state powers should be made with obligatory transfer of economic resources and financial means necessary for their implementation. Public authorities guarantee economic and financial security of the realised state powers to local governments. Endowment of local governments with certain state powers without transfer of necessary and sufficient economic resources and financial means is not allowed. Local governments use the delegated state and municipal powers in the degree provided for economically and financially. The author of the article considers each component of this principle and their application using the court practice experience. For example, in transfers to local governments of the financial means necessary for implementation of certain state powers, the question of calculation of the financial means necessary for local governments to realise them is one of the key problems. The author of article offers his view of this problem.

**Key words:** finance; state powers; local government.

P. 108. *Mukhacheva Yekaterina S.* Tomsk State University (Tomsk, Russia). **CORRELATION BETWEEN ECONOMIC AND PRACTICAL IMPOSSIBILITY OF OBLIGATION FULFILLMENT.** The article is devoted to the problem previously unexplored in the Russian civil doctrine of correlation between the concept of economic impossibility of performance of the obligations, created in the beginning of the 20th century, and the phenomenon of practical impossibility of fulfillment of the obligations, which was developed in the 1990s in the uniform civil law and later borrowed by many national legal systems (including Germany). The aim of the present research is to find out how much this innovation helps the regulation of the contractual relations and if it might be useful for the Russian civil doctrine and legislation, which is currently under the process of reformation. Learning the proceedings of the representatives of the Pandect Law School and the contemporary studies of German Law on obligations, making deep analysis of *lex mercatoria* (the *UNIDROIT Principles of International Commercial Contracts 2010*, the *Principles of European Contract Law 2002*, the *Draft Common Frame of Reference 2009*) and Russian civil legislation, revealing the origins of the concepts of the economic and practical impossibility of fulfillment of the obligations, the author comes to a conclusion that the scopes of the concepts of economic and practical impossibility of fulfillment coincide to a certain extent. The author believes that the provisions on practical impossibility of fulfillment in the form they exist in German civil law and *lex mercatoria* cannot be recommended for the reception by Russian civil legislation, as it will lead to a conflict of the transplanted provisions with Art. 451 of the Russian Civil Code (RCC) and, therefore, to the problems in law enforcement. In the article it is recommended to provide gross disproportion between the expenses and efforts of the debtor, which are necessary for fulfillment and the interest of the creditor in this fulfillment, i.e. practical impossibility of fulfillment of the obligations, which is a type of hardship of fulfillment, as an independent basis for modification or termination of a contract by the court applicable regardless of whether practical impossibility occurred (before or after obligation arose). In this connection, the author proposes to add the following rule to Art. 451 (2) RCC: "A contract may also be modified or terminated at the request of an interested party, if its specific fulfillment requires from the obliger expenses and efforts which, taking into account the subject matter of the obligation and the requirements of good faith, are grossly disproportionate to the interest in fulfillment of the obliged".

**Key words:** economic impossibility of fulfillment of obligations; practical impossibility of fulfillment of obligations; hardship of fulfillment of obligations; *clausula rebus sic stantibus*.

## ECONOMICS

P. 112. *Akerman Yelena N., Mikhchalchuk Aleksandr A., Trifonov Andrey Yu.* Tomsk State University (Tomsk, Russia), Tomsk Polytechnic University (Tomsk, Russia). **CLUSTER DYNAMICS OF POTENTIAL ECONOMICS EDUCATION DEVELOPMENT.** A multi-dimensional statistical (dispersing and cluster) analysis of quality of higher school applicants for the integrated group of specialties (profiles) "Economics" on the basis of the results of entry tests of 2011-2012. On the basis of parametrical T-criterion and nonpara-

metric U-criterion of Mann-Whitney for two independent samples a conclusion about an insignificant difference of quality of students enrolled by the Unified State Examination mean score in 2011-2012 is made. Despite the exterior stability of quality of students rough local dynamics in distribution of results of the Unified State Examination is revealed in 2011-2012. 14 cluster high-quality dynamic models of higher schools for "Economics" distinguished significantly all clusters by sets of indexes (a mean score of the Unified State Examination, its difference for 2012 and 2011, and the number of the enrolled), state-financed places ( $\lambda$ -criterion of Wilks), parametrical F-criterion, rank criterion of Kraskel-Willis, and the median test. Within the analysis homogeneous groups of clusters are selected for each indicator. Qualitative classification of higher schools by "Economics" is made basing on different criteria. Outcomes of similar clustering of higher schools can be considered within the ongoing reform of higher education, for example, when making decisions about optimization of the net of higher schools and their financing.

**Key words:** multi-dimensional statistical analysis; entry tests; Economics education; cluster.

P. 116. *Muraviev Igor V., Lozhnikova Anna V.* Tomsk State University (Tomsk, Russia). **TECHNOLOGY LEVEL AND INNOVATIVE PORTFOLIO OF RUSSIAN COMPANIES: ON ADEQUACY OF ASSESSMENT AND EXISTENCE OF INTERRELATION.** Basing on the analogy of territorial and production complexes the issues of forming the modern organizational and economic mechanism of realization the tools of public-private partnership in the sphere of modernization and technological development of Russian economy are considered. To solve this task a comparative analysis is made of classical forms of modernization, technological (organizational and technical) level of production, on the one hand, and technological advances and companies audit, the balance of break-through and improvement projects in the innovative portfolio of companies, on the other hand. In this regard modern approaches towards assessment of organizational and technical level of enterprise included in methodological recommendations of RF Ministry of Economic Development on elaboration of programs of state enterprises innovative development are strictly criticized. Conclusions about high technological level of largest Russian companies are made without consideration of the traditional aspects of analysis that define that level – conditions and intensity of equipment renewal, which are good examples of the set of negative trends in long-term period (high level of depreciation, big share of obsolete equipment, unacceptably low coefficient of major tools renewal, low ratio of capital to labour). A comparative analysis of sets of priority directions of science, technologies and techniques development, sets of critical technologies and their specification in terms of R&D approved by the President of RF in 2006 and in 2011 respectively is made. By example of oil and gas sector of Russian economy conclusions about the evolution of these documents content are made. These documents determine the vector of initiation and realization of break-through projects within critical technologies. In particular, state support is stated for the existing race of increasing the volume of extraction and export of oil, while in the sphere of deep processing of oil the declared break-through in the practice of state regulation of the activity of oil and gas companies is not programmed. The table demonstrates the technological scarcity of Russian refining petrochemicals and critically low indicators of shares of Russian production on the national and international markets of petrochemicals products. In the article conclusions are made on the absence of interrelation between the processes of defining of the existing technological level of large Russian companies and elaboration of break-through and improvement projects as part of their innovative portfolios.

**Key words:** company's technological level; break-through and improvement projects; technologies.

P. 122. *Chernikov Boris V.* Tomsk State University (Tomsk, Russia). **CREATING NON-MATERIAL MOTIVATION SYSTEM AIMED AT SUSTAINABLE PERFORMANCE.** Employees of value based companies supporting sustainable performance produce more than others over the long term. They routinely show up at work, they are less likely to quit, they go above and beyond the call of duty, and they attract people who are just as committed to the job. As a result of comparative analysis across industries and job types, it was found that employees of value based companies who share these values demonstrated 16% better overall performance and 125% less burnout than their peers. They were 32% more committed to the organization and 46% more satisfied with their jobs. They also missed much less work and reported significantly fewer doctor visits, which meant health care savings and less lost time for the company. We have identified two components of thriving. The first is vitality: the sense of being alive, passionate, and excited. Employees who experience vitality spark energy in themselves and others. Companies generate vitality by giving people the sense that what they do on a daily basis makes a difference. The second component is learning: the growth that comes from gaining new knowledge and skills. Learning can bestow a technical advantage and status of an expert. Learning can also set in motion a virtuous cycle: people who develop their abilities are likely to believe in their potential for further growth. The two qualities work together; one without the other is unlikely to be sustainable and may even damage performance. The combination of vitality and learning forms employees who show results and find ways to grow. Their work is rewarding not only because they successfully perform what they are expected to today but also because they have a sense of what they and the company are headed for. In short, they thrive, and the energy they create is contagious. There are four mechanisms that create conditions for thriving employees: providing decision-making discretion, sharing information, minimizing incivility, and offering performance feedback. The mechanisms must interact. For instance, if you let people make decisions but give them incomplete information, or leave them exposed to hostile reactions, they will suffer rather than thrive. One mechanism itself will get you part of the way, but all four are necessary to create a culture of thriving. The four mechanisms that help employees thrive do not require enormous efforts or investment. What they do require is leaders who are open to empowering employees and who set the tone. As we noted earlier, each mechanism provides a different angle necessary for thriving. You cannot choose one or two from the menu; the mechanisms reinforce one another. Creating the conditions for thriving requires your concerted attention. Helping people grow and remain energized at work is valiant on its own merits – but it can also boost your company's performance in a sustainable way.

**Key words:** non-material motivation; values; corporate social policy; thriving.

P. 125. *Eikhler Larisa V.* Siberian State Automobile and Highway Academy (Omsk, Russia). **THEORETICAL RESEARCH OF INTEGRATION PROCESSES IN MOTOR TRANSPORT.** Repeated transformations of the administrative structure of the transport branch resulted in the fact that the market of transport services is out of state's influence. The transition process from the system of administrative management in the transport complex to the system of regulation demands search of effective means of influence on motor transportation company (MTC) activity. For restoration of the lost properties and strengthening of new system qualities of the cargo motor transportation complex development of theoretical and practical bases of integrated interaction of managing structures is urgent. Now in Russia a new scientific direction studying integration in social and economic systems with branch orientation is formed. In researches of D.A. Pumpyansky, Ye.V. Budrina, G.D. Antonov, O.P. Ivanov, D.S. Sadriyev various approaches to implementation of schemes of integration for various branches and fields of activity are presented. At the same time,

questions of methodology of integrated interaction of MTC are insufficiently developed for motor transport. For a more precise theoretical study it is necessary to consider integration from the point of view of dynamics of economic communications cooperation processes increase. Therefore, research of signs of the standard classification of integration as a basis of classification requires to consider the target and spatial (vector) approaches. The integration processes in economy have branch specifics and act differently in the industrial sector and in motor transport. If in the industry, in power industry, in extracting and processing branches integration, first of all, reflects the processes of takeovers and merges and forms bigger integrated structures, in motor transport of general use MTCs aspire to integrate only on an informal basis. Thus, it is possible to draw a conclusion that integration processes reflect the growth of volume indicators, which corresponds to the needs in transportations. Having analysed the tendencies of development of the RF motor transportation complex, having compared them with the growth rates of volume indicators and structural transformations in the branch, it is possible to draw a conclusion that merge and concentration of the capital on transport on the basis of integration and globalization of economies of regions of the Russian Federation in the world economic space in the long term is expected. For this purpose it is necessary to support cooperation movement for the motor transport uniting the participants by common interests without infringement of property rights.

**Key words:** self-organizing system; economic integration; cargo motor transportation complex; concentration; integration processes.

## PSYCHOLOGY AND PEDAGOGICS

P. 133. *Abakumova Natalia N., Guba Pavel S.* Tomsk State University (Tomsk, Russia). **USE OF COMPETENCE PROBLEMS IN FOREIGN COMMUNICATIVE COMPETENCE FORMATION.** The article describes the possibility of using competence problems in the context of studying at an institute of higher education. The competence approach is introduced to solve a difficult didactic problem – creation of a uniform package of competencies for all levels of lifelong education. We also see another problem – insufficient quantity of applied methodological recommendations about organisation of educational practice at an institute of higher education, oriented towards purposeful, productive and effective formation of graduates' planned competencies. To solving the specified problem we have tried to develop competence problems as a special educational form, which allows to effectively form key and meaningful competencies. By a competence problem we mean a problem directed at the creation of a special situation allowing to reveal key and meaningful competences of a student. In our opinion, the use of competence problems in the educational process is prospective enough as it enables to solve the following tasks: internal and external monitoring of academic progress of students, their intermediate assessment, self-certification of an institute of higher education. In general, the competence problem is developed on the basis of the cross-curriculum content. The content of the problem is oriented to using practical situations that are typical for everyday life. A model structure of a competence problem is given in the article. As competence problems were tested in Foreign Language class for students of technical specialties, hence, the foreign communicative competence became basic for us. This competence can be defined as an ability and readiness to carry out foreign communication with certain requirements determined by the programme, which, in turn, are based on the complex of knowledge and skills specific for a foreign language such as lexical, spelling, grammatical, phonetic, etc. Foreign communicative competence is a multicomponent formation, which include language (linguistic), sociolinguistic, sociocultural, discursive and strategic competences more often. The development of linguistic and discursive competences and the assessment technique of their formation are shown using the example of the competence problem in the English language made for students of the Faculty of Mechanics and Mathematics. Basing on the long-term experience of teaching a foreign language we consider it necessary to include the degree of students' mastering competence problems in the efficiency estimation of their preparation. The use of similar problems in the Foreign Language class makes it possible to activate students' motivation to foreign language learning, increase active vocabulary, form the foreign communicative competence.

**Key words:** competence problem, foreign communicative competence, foreign language.

P. 137. *Bokhan Tatiana G., Staselko Alexandr A., Terekhina Olga V.* Tomsk State University (Tomsk, Russia). **LIFE QUALITY AND PSYCHOLOGICAL SAFETY OF PEOPLE LIVING IN RISK OF ANTHROPOGENIC ENVIRONMENTAL THREAT (BY EXAMPLE OF SAYANO-SHUSHENSKAYA HPP RESIDENTS AND WORKERS).** The study of the quality of life of people who have been in extreme conditions, first of all, assessment of the probability of maintaining their health, including mental one, after exposure to extreme factors, is now a crucial scientific and practical problem in our country due to the increasing number of anthropogenic environmental disasters and the increasing number of those who survived in such extreme events. This social significance of the problem updates objectives for psychology related to the search of the basis for the development of methods and tasks of prevention and rehabilitation of mental health of the population living and/or working in the risk of anthropogenic and environmental hazards. This article is about the quality of life and psychological safety among people living near Sayano-Shushenskaya hydroelectric power plant and workers of the plant, witnesses to the anthropogenic environmental disaster in 2009. It includes parameters of the severity of the components of life quality of the population, a comparative analysis of physical and mental health components in groups of "residents" and "workers", the results of the cluster analysis to identify individuals with different levels of satisfaction with the physical and psychological components of health and its statistically significant differences, the dynamics of the dominant states and emotions reflecting the psychological security in the time (past, present, future) of life of "residents" and "workers", witnesses of the disaster. It was revealed that respondents are not uniform in the assessment of satisfaction with life quality: there are people with higher and lower levels of life quality in both groups. In this case, two years after the event acute negative reactions transformed into "invisible stress", still, many of the respondents indicated a positive trend with respect to their perception of the future, which reflects not only the hope of safety, but also of "good life", self-self-fulfillment in various spheres of life. It shows possible personal resources in the prevention of "invisible stress" and its negative impact on life quality of people living in risk of anthropogenic environmental threat.

**Key words:** quality of life; physical health; psychological health; population; anthropogenic environmental threat; psychological safety; invisible stress.

P. 143. *Minakova Ludmila Yu., Obdalova Olga A.* Tomsk State University (Tomsk, Russia). **COMPETENCE APPROACH IN REALIZATION OF PROFESSION-ORIENTED PROJECT METHOD IN TEACHING FOREIGN LANGUAGES.** The paper deals with the questions of linguistic education for the students of non-linguistic specialties. The analysis of modern state of teaching

foreign languages has been made and the main demands to the level of the corresponding competences possession for foreign language professional communication fulfillment have been determined. It is shown that the competence approach has a series of peculiarities: a complex of skills and knowledge and the ability to use them in certain conditions of real life is considered as a competence; a competence is always personally affected by the characteristics of a person and it is revealed as a personally recognized feature involved in subjective experience; the competence approach demands a new pedagogical culture and methodological efforts formation, new technologies and teaching principles research which lead to the creation of the competences formulated in the Standards of higher education. The model of teaching a foreign language to non-linguistic students has been designed by the authors taking into consideration the paradigm of foreign language professional education. The model includes the following aspects: the aim and tasks, the content of education and technologies used while realizing the competence approach in working out new educational programs. The types of competences, formation of which ensures the development of ability and readiness to solve the problems of professional foreign language communication, have been found. In this case we speak about the formation of such competences as foreign language communicative competence (linguistic, social linguistic, discursive, sociocultural, social, strategic), professional competences, general competences. While choosing technologies in the process of these competences formation it is necessary to approach education to the real professional activities or their imitation. This approach can be reached while using the forms of teaching process organization that create optimal conditions for partnership of communication members, expression of personal opinion on the problems discussed, that can be considered as essential features for the reality of professional activities. The aim of education is determined as the formation of communicative professional competence through the use of project method having professional direction at the lessons of a foreign language. The authors' model promotes the most effective formation of foreign language communicative competence of natural science students on the basis of professionally oriented project method according to the themes, which provide the unity of professional training and teaching foreign language professional discourse.

**Key words:** linguistic education; competence approach; professional communication; project method.

P. 149. *Rakhimov Timur R.* Tomsk Polytechnic University (Tomsk, Russia). **KEY COMPETENCIES OF EDUCATOR IN EDUCATIONAL PROCESS ORGANIZATION FOR FOREIGN STUDENTS IN RUSSIAN INSTITUTIONS OF HIGHER EDUCATION.** The urgency of this topic is based on the fact that competency approach in education becomes a priority way of development of educational programs in Russian universities, especially in the light of the growing integration into the international educational space. The purpose of this article is to realize competency approach in relation to educators teaching foreign students in Russian universities by means of formulation of key competencies, which would increase the quality and efficiency of educational process. To achieve this goal in the article several tasks are solved. 1) analysis of the essence of the notion "competency" and its relation to the notion "competence". In the context of this task content elements of competency were pointed out, a scheme reflecting the process of its development was presented. Further it was shown that despite the harmony with the term "competence", competency is only its component. Competence is a set of competencies, which is confirmed by the "successful" life experience of their application. 2) formulation and development of key competencies of educator teaching foreign students in the English language in a Russian university. Within this task a five-year experience of teaching professional subjects to foreign students in the English language in Tomsk Polytechnic University was taken into account. The following list of competencies was formulated: communicative competency (the focus is on the development of speaking and comprehension skills due to the fact that for most foreign students English is not their native language. It is also suggested that the educator take into account three useful principles: "standby", "KISS" and "Feedback"); sociocultural competency, (the focus is understanding and consideration of national psychological peculiarities of foreign students); information competency as contemporary "new literacy" (the ability of an educator to sustain effective communication with students by means of Internet and personal educator's website); professional competency (development of broad "professional horizon" and ability to adopt elements of "needs-oriented education"). As a tool of implementation of the latter it is suggested to use the module approach in education. Also it is pointed out that while working with foreign students, one needs to actively involve the element of self-study, because this skill is relatively more developed.

**Key words:** competency; competence; foreign students; educational process; institutions of higher education.

P. 154. *Smetanova Yulia V.* Tomsk State University (Tomsk, Russia). **VALUE AND SENSE BASE OF ENTREPRENEURIAL ACTIVITY.** In modern society, the study of entrepreneurship and entrepreneurial thinking are extremely important. Researchers agree that to understand the psychology of business it is important to analyze the value-semantic base of entrepreneurial activity. The paper presents the results of research of the value-semantic base of entrepreneurial activity of successful entrepreneurs of the city of Tomsk. The study involved 50 entrepreneurs. Over 60% of respondents were in the business for more than 10 years, and 30% – for more than 15 years. About 20% of the entrepreneurs – the study participants – are the founders and recognised market leaders. The materials for the study were different forms of interviews. To process and interpret the data the method of content analysis and the method of existential analysis with elements of transtemporal analysis were used. It was found that the start of entrepreneurship is associated with a life crisis caused by the reconsideration of the existential bases of one's being, such as responsibility, sense and freedom. We have identified two basic forms of life crisis that were the impetus for starting a business: crisis of living conditions and crisis of development. The study revealed the complex and unstable experience in forming the business self-identity of successful entrepreneurs. The periods of their social role development are very dynamic in terms of values and senses. In addition, most respondents tried to separate the time of the start of a business and of business self-identity formation. The latter, as a rule, was often blurred in time (and in the reflection of their life is constantly moving along the time-line), or was connected with a particular success in the chosen field of activity. The values were identified that successful entrepreneurs consider the basis of their today's career. These values can be classified into several sets: external (financial), personal (activity, self-perception and psychological well-being), existential (freedom and responsibility). In general, understanding the value and sense base of entrepreneurial activity and the features of its dynamics at different phases of this activity has an independent research value and can be used in psychological and educational practice.

**Key words:** entrepreneurship; value and sense base of activity; career; successful entrepreneurs.

P. 158. *Solovyova Anastasia L.* Tomsk State University (Tomsk, Russia). **FEATURES OF COMPETENCE APPROACH IN DEVELOPING PHYSICAL CULTURE PROGRAMS FOR GEOLOGY AND GEOGRAPHY PROFILE STUDENTS.** In modern domestic pedagogy quite a number of different approaches are known that underpin training. Among them there are both well-known and well-established (traditional knowledge-oriented, system, activity, comprehensive, student-centered, student-activity), and

new ones (situational, contextual, poly-paradigm, information, ergonomic, etc.). The latter applies to the competence approach. Competence-based approach uses two basic concepts: competence and competency. Until now, the debate continues even on the interpretation of these terms. Most authors appeal to the dictionary. However, even dictionaries characterize these concepts differently and most of them reflecting terminology well-established in some areas, give several meanings of these terms. Thus, competence-based approach focuses on the development of human capabilities to implement certain competences, to teach people to act effectively in a real situation. Competence-based approach has prerequisites from both teaching practice and theory. The goal of the competence-based approach application in vocational education is the formation of a competent specialist. Competences in modern pedagogy of professional education must be seen as a new, market-driven type of goal-setting in educational systems. Competence-based approach driven primarily by new vision of goals and evaluation of vocational education sets its demands to other components of the educational process – the content, teaching techniques, tools of monitoring and assessment. The key here is the design and implementation of teaching technologies, which would create a situation of inclusion of students in different types of activities (communication, problem solving, discussions, debates, projects). Competence-based approach objectively meets social expectations in the education community as a whole and the interests of participants of the educational process. However, this approach contradicts many of the prevailing stereotypes in the education system, the existing assessment criteria for curriculum, teaching, and administrative activities. It is important that all activities related to the implementation of competence-based approach in education are carried out exclusively with the system approach. There are no important and unimportant tasks, for the new long-term content of mass education is its system and applied character. The analysis of state educational standards of the new generation for the Faculty of Geology and Geography grounds the development and use of the pilot program in physical education to form and develop professional competences of students majoring in expeditions and field specialties.

**Key words:** education; competence approach; geological and geographic profile.

P. 162. *Trifonova Yulia A.* Tomsk State University (Tomsk, Russia). **SPECIAL FEATURES OF INTERCONNECTION BETWEEN DYNAMICS OF PROFESSIONAL IDENTITY AND TYPES OF REFLEXIVE ACTIVITY OF TEACHERS' TRAINING COLLEGE STUDENTS.** This article describes the research procedure, which allowed following the students' reflexive dynamics and revealing certain regularities in the dynamics of professional identity. 50 students of Tomsk State Pedagogical College took part in a two-year seminar. The content of the reflexive kind of tasks offered to students concerned definition and objectification of their available information on the specific character of personal qualities, which are important for the successful learning of trade. Students compared the results and their self-esteem; they were required to express their reasoned agreement or disagreement with the results. Meanwhile the unexpectedness of the situation allowed the researchers to observe students' "primary" emotional reactions on the existing results, as well as their dynamics in the process of reflexive work. The content of utterances of young people (reflexive activity) was analysed, as well as emotional reactions during this reflective activity. The process was recorded by a voice-recorder and by forms of monitoring methods of emotional expression by H. de Superville. Several characteristics of reflexive activity assessment have been allocated: readiness for consideration, type of reasoning, readiness for dialog, emotional background. Analysis of the reflective activities in the seminar showed the following: 1) 22% of students have "positive" reflection; 2) 44% of the students have "poorly differentiated", unexpressed reflection; 3) 34% have "controversial", inconsistent reflection. Then there was a psychosemantic analysis based on the texts of reflexive seminar interviews. Categories corresponding to the three forms of professional self-determination were identified. On the ground of the obtained results three groups of respondents with different professional identities were allocated: 1) students who identify themselves with the profession they acquire (46%), 2) students who do not identify themselves with the profession they acquire (16%), and 3) students with an uncertain professional identity (38%). All respondents with "positive" reflection have demonstrated productive reflexive activities in both phases of the study (22%). Another 28% were those respondents who have demonstrated a reflexive increase compared with the first stage. It should be noted that 20% of this group earlier showed "controversial" reflection, whereas the group with the "poorly differentiated" reflection showed no visible dynamics of reflection. Respondents with undeveloped professional identity (10%) during the process of implementing the program began to see the possibility of their realization in the teaching profession. Although students with an uncertain professional identity had not committed a "transition" to a "more mature" identification, in the process of implementing the program they have expanded their range of meaning.

**Key words:** professional identity, reflexive activity, identification, research procedure.

P. 166. *Sharafeeva Alla B., Zagrevsky Oleg I.* Tomsk State University (Tomsk, Russia). **CONCEPTUAL APPROACHES TO PHYSICAL CULTURE SPECIALISTS TRAINING FOR RECREATIONAL ACTIVITIES.** The higher education system is designed to provide facilities for the training of graduates of the new formation, who aim at self-development and professional competence. Thus, skills acquisition is a priority in education. A block of general professional disciplines and a block of special disciplines are essential components of graduates training. In addition, a necessary component of personal qualities is a specialist formed in the process of training. In the implementation of the Bologna process in education, the competence approach is used. This approach facilitates the creative human activity, promotes innovation. It develops professional competencies, generic methods, standards and rules of professional activity. One approach to competency training is student-activity approach, which assumes that the center is a student, their interests, knowledge, and skills. Context, as a conceptual condition of formation of competencies requires professional orientation. Motivational potential of this approach stems in the fact that the source of the content of education is the content of professional activities. In order to realize their personal potential students use educational games that simulate future career. Functional approach is closely related to the theory of the concept of personality and role of training. Functional approach in this context involves the isolation and analysis of the functions corresponding to certain professional roles (physical education teacher, coach, organizer of sports and recreational activities, etc.) to determine their purpose and development activities (programs, algorithms, activities) to implement these functions. The central concept of problem-based learning is a problematic situation, which is understood as the existence and recognition of the contradictions in the learning process, phenomenon. Basing on the analysis the problem situation becomes a problem task that needs explanation and resolution of the contradiction. Communicative approach focused on a more active interaction of students not only with the teacher, but also with each other. Module approach helps to gradually and consistently solve the tasks of professional competence formation. As part of the competency approach, each module contains information and professional characteristics. Analysis of the literature and the study of the basic requirements to professional education defines the conceptual approaches: competence, personality and activity, function, task, module, integration. Integrative ap-

proach to teaching provides a comprehensive vision and understanding of complex phenomena and processes of social and professional reality, a holistic understanding of a particular object, phenomenon, activity.

**Key words:** specialist; physical education; recreation; conceptual approaches.

## SCIENCES ABOUT EARTH

P. 169. *Gorbatenko Valentina P., Krechetova Svetlana Yu., Belikova Marina Yu., Razumova Olga V.* Tomsk State University (Tomsk, Russia), Gorno-Altai State University (Gorno-Altai, Russia). **IDENTIFICATION OF MESOSCALE CONVECTION AND THUNDERSTORMS BY SPACE PLATFORM DATA.** The production potential of MODIS (Moderate Resolution Imaging Spectroradiometer) for definition of the degree of instability of the atmosphere is investigated. Spectroradiometer MODIS is installed on the space platform Terra for studying the atmosphere of the Earth and its surface on 36 channels. Numerous parameters have been developed to measure convective instability, which are defined according to aerologic sounding. The more common ones include the Lifted Index (LIFT) and two indexes (TOTL and K Index) containing static stability and dew point at levels of 850 hPa and 700 hPa. Indexes are calculated on the basis of the data of aerologic sounding of the atmosphere. The MODIS Atmospheric Profile product (MOD07) consists of several parameters including atmospheric stability, temperature and moisture profiles, and atmospheric water vapor. All of these parameters are produced for 20 levels at 5 x 5 km pixel resolution including indexes Lifted Index, TOTL and K Index. As the characteristic of instability three indexes computed on radiosonde and satellite data are compared: Lifted Index, TOTL and K Index. Characteristics of the atmosphere for days with thunderstorms at a Western Siberia station for the period of 2009-2011 were investigated. The total of 76 days with thunderstorm during the researched period have been considered. The statistical calculations and figures showing comparison between indexes derived from the atmospheric sounding and satellite data are presented. Two of the satellite derived instability indexes (Lifted Index, TOTL) are well correlated with those derived from radiosondes. Figures showing spatial distribution of indexes during a thunder-storm at one of the meteorological stations are given. Taking into account the fact that spatial resolution MYD07\_L2 is 5 x 5 km, the probability of thunderstorm activity, which is directly connected with atmospheric instability, can be defined for each cell of the grid. MODIS allows determining spatial position of powerful convective cells and improving the forecast of thunderstorms. The researches play an important role as they have a high potential for increase in spatial accuracy of thunder-storms forecasting.

**Key words:** thunderstorms; instability of atmosphere; Spectroradiometer MODIS.

P. 175. *Kizhner Lubov I., Maltseva Natalya A.* Tomsk State University (Tomsk, Russia). **VERTICAL PROFILE PARAMETERS OF TROPOSPHERE REFRACTIVE INDEX OVER NORTHERN ATLANTIC OCEAN.** Radiometeorological simulation of the troposphere of large regions is urgent. Simulation includes obtaining of the mean vertical profile of the refractive index in the troposphere. On the basis of these data refraction in the troposphere is calculated. The most fundamental of such works is the Radio Climatic Atlas (USA) published in 1966, however, it is based on meteorological data limited in space and time. The relevance of this work is in further research and refinement of the radio climatic regime of the oceans, which due to scarce observations is not studied enough, it is particularly important for the water area of the Atlantic Ocean. We made the calculation and analysis of the mean vertical profile of the refractive index  $N$  in the troposphere over the North Atlantic. The calculations were performed at 64 stations located on the coasts of Europe, America, the islands and on the weather ships in the open part of the ocean. To perform the calculations data on the climate of the atmospheres over the countries of the northern hemisphere were used: the mean values of temperature, humidity and atmospheric pressure at stations in Europe, North America and the Atlantic Ocean. Climatic data were calculated for a 10-year period and presented at standard isobaric surfaces. Two parameters of exponential and four parameters of bi-exponential models of the mean vertical profile of the refractive index of the considered territory were calculated. Parameters were defined by the least squares method. The calculations were performed for the four central months of each season: February (winter), May (in spring), August (in summer), and October (autumn). We estimated the restoring of the refractive index profile by the coefficient of determination  $R^2$ . Its numbers are greater than 0.900. In this case, the exponential model reflects profile  $N$  more accurately in sub-equatorial and temperate latitudes and the bi-exponential one reflects profile  $N$  in subtropical and tropical latitudes. By the results of the calculations using the program "Surfer" maps of the spatial distribution of the parameters of the two models were constructed. We analysed the spatial and temporal variations of the model parameters for four months. The extreme values of the calculated parameters were highlighted. The significance of the work lies in the fact that the parameters of the two models for this area were calculated using a large number of data. Its results will be used in the preparation of the Radio-Climatic Tropospheric Atlas of the Atlantic Ocean.

**Key words:** refractive index of air; refraction of radio waves; ultra short waves; Atlantic Ocean.

P. 181. *Lepokurova Olesya Ye.* Tomsk Polytechnic University (Tomsk, Russia). **GEOCHEMISTRY OF UNIQUE FRESH ALKALINE WATER BASIN OF CHULYM.** The hydrogeological conditions of the unique mineral water "Omega" deposit are investigated in the article. The uniqueness of this water consists in high alkalinity (pH between 8 and 10) and low salinity waters (up to 1 g/l). It is shown that the basin of the Chulym on the border of the West Siberian Basin and the Yenisei hydrogeological folded area in the sediments of the Cretaceous and Jurassic at depths ranging from 500–100 to 800–1500 m has favourable hydrogeological conditions for the formation of this type of water: flow of fresh fracture-vein waters of the Yenisei Ridge in the zone of deep faults in the basin, large capacity of sandstones with high values of porosity, no water confining stratum. It caused the storage of huge stocks of fresh water at big depths. The results of researches of ion-salt, gas and isotopic composition of the water confirmed that it is infiltrate and it circulates in the zone of active water exchange. The mineralogical structure of water containing deposits of the Illesky suite was studied represented by sand, sandstones and silts. The chemical, gas and isotope composition of mineral water "Omega" was thoroughly examined, data on other waters of the basin of the Chulym were also provided. According to the received data the water is warm (in the mouth the temperature is 21...23°C), sub-saline with the total salinity level of 0.2...0.4 g/l, alkaline (pH 9.1...10.3) and with Eh –86 mV. By its chemical composition the water belongs to hydrocarbonate sodium (soda) type. The water contains such specific components as metasilicic acid (up to 35 mg/l) and dissolved organic substances (up to 10 mg/l by DOC). In gas structure nitrogen (76...77%) prevails, then oxygen (18...19%), methane numbers are low (0.5%). The isotope compo-

sition of water is investigated:  $\delta D$  and  $\delta^{18}O$ , as well as isotope composition of carbon of the dissolved ion of  $HCO_3^-$  ( $\delta^{13}CHCO_3^-$ ). The latter has a sharply facilitated value ( $-30.3\text{ ‰}$ ) that indicates biogenic genesis of  $CO_2$  as a part of  $HCO_3^-$  formed by oxidation of the organic substance of soils and coals, and disseminated in rocks. The results of the calculation of equilibria in the water-rock system are given. The water dissolves primary aluminosilicates of water-bearing rocks: feldspar (except albite), muscovite, biotite, pyroxene, hornblende, epidote, and many others. At the same time the solution plants secondary minerals: clay (hydromica and Ca-montmorillonite) and carbonates (calcite, dolomite, siderite). Of all the elements entering the solution by dissolving aluminum silicates, Na least of all links in the secondary deposits, therefore, continues to accumulate in the water. In addition, the lack of carbon dioxide in the water stimulates accumulation of the group of  $OH^-$  formed by hydrolysis. Thus, fresh alkaline sodium bicarbonate water are formed.

**Key words:** geochemistry of groundwater; water-rock system; alkaline mineral water "Omega".

P. 187. *Sevastyanova Ludmila M., Nikolchenko Yury N.* Tomsk State University (Tomsk, Russia), Gorno-Altai State University (Gorno-Altai). **POTENTIAL WIND AND SOLAR POWER RESOURCES IN ALTAI KRAI.** An important advantage of renewed power resources is almost inexhaustible potential and ecological purity. Prospects of research are connected with sharp power deficiency in Altai Krai and presence of a large number of settlements without centralized power supply. Use of renewed power resources can sharply cut the expenses of budgetary funds on delivery of fuel for diesel electric power stations, increase the supply stability of electricity and heat for the population. Farmers, small and medium businesses, tourist camps and other recreational objects can become wind power consumers in the territory of the region. The research is to estimate the potential wind and solar power resources of Altai Krai. To determine the wind and solar energy potential of the territory a detailed study of its climatic conditions defining the wind and solar modes is carried out. By the result of the analysis of the wind mode and of wind stream specific capacity the southwest and northwest areas of Altai Krai are optimum for constructing wind power stations of small and average power, the northeast area – for stations with small power. In other areas where the average annual speeds of wind are less than 3.5 m/s their installation is unprofitable. Studying of radiating characteristics of the climate and cloud mode of the territory has shown an increase in solar power resources from the northeast to the southwest of Altai Krai. Three zones with various potential solar power resources are allocated: 1) more than 1300  $kW\cdot h/m^2$ , 2) 1200–1300  $kW\cdot h/m^2$ , 3) less than 1200  $kW\cdot h/m^2$ . In all three zones solar power systems of average and small sizes can function constantly. The territory division into districts has shown expediency of use of solar radiation as an additional energy source for the population. Effective work of solar batteries or solar installations of other types lasts from March till September. Use of independent solar and wind power installations and storages that provide long-term accumulation of energy is most perspective. To specify the operating mode of wind and solar power stations the list of indicators should be considerably expanded. For detailed estimation of potential renewed resources additional researches are necessary to examine the microclimatic features of the areas.

**Key words:** renewed energy sources; wind power resources; solar power resources.

P. 194. *Semenova Natalya M., Vorobyov Sergey N., Kolesnichenko Larisa G., Ruzanova Albina I.* Tomsk State University (Tomsk, Russia). **GEOECOLOGICAL ESTIMATION OF WHITE LAKES SYSTEM IN VASYUGAN LANDSCAPE RESERVE (TOMSK REGION).** A few large lakes (Big, Small and Medium White) are located in the axial part of the Great Vasyugan Mire in the Vasyugan Landscape Reserve. These lakes have been studied insufficiently. Their genesis and mechanisms of change with the surrounding landscapes are not well understood, and still disputed. During field studies in the area of the White Lakes original data were obtained on the morphology of the lakes, the chemical composition of lake water and bottom sediments, the diversity of the animal population of the lakes, as well as on the chemical composition of bogs water and soil on lake shores. The studies were conducted in late May 2009. The results characterize the spring and early summer aspect of the condition and functioning of the wetland landscapes of the watershed of the Vasyugan Mire system. The Landscape Area of White Lakes is a unique wetlands system located at the very top of the Ob-Irtysh watershed plateau. Aerial processes, as well as surface and subsurface runoff from the drainage space, influence the formation of the chemical composition of lake water. The composition and quality of water in the lakes depend on both the landscape-geochemical characteristics of drainage basins that represent different types of wetlands, and the area of their waters. The water area of the largest lake (the Big White) is 1.96 square km, the maximal depth is 5.73 m. Most part of the shoreline of the Big White and the north shore of the Medium White border open mire complexes. Local watershed between the lakes is a northern section of pine-cottongrass-sphagnum and pine-shrub-sphagnum raised bog of 3.5 x 2.5 km. Within this bog massif Small White Lake is located. The analysis of the current status of the study area is carried out in comparison with the data of the published sources. The list of sources used contains 18 items. The analysis of the previously published and original data showed some features of the formation of the chemical composition of lake waters and distribution of elements and their compounds in the environment near the White Lakes. The paper provides interesting data on zoobenthos productivity, which is abnormally high for Vasyugan lakes. The White Lakes are located on the territory of the Vasyugan Reserve that RF government plans to establish. The landscape system of the White Lakes Area is developing under the conditions of high geochemical autonomy and represents exceptional value for background monitoring of the environment on a regular and sustained basis.

**Key words:** Vasyugan Landscape Reserve; White Lakes; Great Vasyugan Mire; geoecological estimation and monitoring.

## BIOLOGY

P. 201. *Dyukarev Yegor A.* Institute of Monitoring of Climatic and Ecological Systems, SB RAS (Tomsk, Russia). **DIURNAL AMPLITUDE OF PEAT SOIL TEMPERATURE.** The results of monitoring of peat soil temperature in an oligotrophic pine-shrub-sphagnum community at the field station "Vasyugan" in Bakchar district of Tomsk Region are given. Monitoring of soil temperature at depths of 2, 5, 10, 15, 25, 40, 60 and 80 cm was carried out by autonomous temperature logger from June 28, 2005 to September 6, 2010 with a time step of 15 minutes in summer and 1 hour in winter. The results of observation reflect the general patterns of input and output of solar radiation coming onto the active surface. In the warm season diurnal fluctuations of temperature penetrate to a depth of 25 cm. The amplitude of the diurnal temperature variation is 5.9–10.2 °C at the surface layer, and 0.3–0.5 °C at a depth of 25 cm. The diurnal variation of soil surface temperature is usually characterized by a maximum in the middle of the day and a minimum just before sunrise. The maximum soil temperature at a depth of 2 cm is observed at about 4 pm local time in May-June, and at a depth of 5 cm the

maximum is observed at 5 pm, at a depth of 10 cm – at 6 pm, at a depth of 15 cm – at 8 pm. At a depth of 25 cm from the surface the maximum temperature is weak, and it is 5 hours later than at a depth of 2 cm. In June and July the minimum soil temperature in the diurnal course at a depth of 2 cm is observed at 6 am. At a depth of 5 cm the time lag is 40 min, at a depth of 10 cm – 1 hour and 30 minutes, at a depth of 15 cm – 2 h 30 min, and at a depth of 25 cm – more than 5 hours. Thermal fluctuations in peat soil are effectively neutralised: in the upper layer due to the high insulating ability of moss, in the lower layers because of the saturation of peat by water and the absence of convective motions. Variations of temperature fluctuations amplitude with a known period allow us to determine the coefficient of effective diffusivity. The effective thermal diffusivity of the upper layer of moss is 8 – 9 cm<sup>2</sup>/hr from June to September. Low values of thermal diffusivity (5.05 cm<sup>2</sup>/hr) are observed in May due to low humidity of mosses.

**Key words:** soil temperature; diurnal amplitude of temperature; peat soil; peatland ecosystems; soil thermal diffusivity.

P. 206. *Milyaeva Yelena V., Makhatkov Igor D., Yermolov Yury V., Kirpotin Sergey N.* Institute of Soil Science and Agricultural Chemistry, SB RAS (Novosibirsk, Russia). Tomsk State University (Tomsk, Russia). **FLOODING DEVELOPMENT ALONG CAUSEWAYS IN FOREST-TUNDRA CONDITIONS OF WESTERN SIBERIA.** Local flooding along causeways is common for the heavy soils in the north of Western Siberia. The flooding marks out as a separate category of human impact. Much of the research is devoted to the phenomenon of transformation of ecosystems in the flooding area. In this paper we attempt to quantify the occurrence of flooding in tundra. Landsat ETM with a resolution of 15 m / pixel and Spot with a resolution of 10 m / pixel were used for decoding images of landscapes. Materials of inventory of flooding that occurred within three years after the construction of causeways in the Pur-Taz interfluvium in the area of a typical tundra were used as initial data. The total length of surveyed roads was 103 km. Amount of flooding and its area in the central and marginal wetlands, drained parts of the local watersheds, were used as the main characteristics. Road sections crossing the peaty bands of runoff and valleys of the former rivers, which are part of local watercourses, were classified into a separate category. 55 sites of flooding with the total area of 59.8 hectares were marked throughout the surveyed roads. Only three cases of flooding but very big in size were noted on the parts of the bands of previous runoff and river valleys. Flooding occurred due to errors when installing artificial water channels inside the roadways at such causeways. In the central and marginal parts of the local watershed flooding occurs at about the same rate – 0.58 cases per kilometer of road in the central part, and 0.55 cases – in the marginal areas of watersheds. At the same time sites of flooding were bigger in size ( $1.36 \pm 0.33$  ha) in swampy areas of watersheds. In general, the total area of flooding here was about 0.79 hectares per kilometer. Due to the flat relief flooding here develops along the roads, covering the surrounding hollows of palsas. In the marginal parts of the local watershed flooding was smaller, on average –  $0.79 \pm 0.15$  ha. The flooding areas here were 0.44 hectares per kilometer. Flooding in marginal areas is confined to small watershed depressions and runoff hollows, and develops along the landforms. Sites of 1.0 to 0.5 hectares dominate in areas of flooding. The greatest contribution to the flooding (about 75%) comes from a few large sites of the territory. The analysis of flooding has shown that reduction of its occurrence rate and the reduction of its area is a challenge. In the central parts of the watersheds flooding occurs with very little vertical difference of the surface and uncertain direction of water runoff, which it is difficult to account for when designing culverts. Small depressions and hollows of runoff with a minimum height difference are not pointed even on large-scale maps, which also complicates the prognosis of flooding.

**Key words:** tundra; landscapes; man-made effects; flooding.

P. 212. *Nikonova Nina N., Yerokhina Olga V., Pustovalova Lilia A., Shurova Yevgenia A.* Institute of Plant and Animal Ecology, Ural Branch RAS (Yekaterinburg, Russia). **CURRENT STATE AND EVOLUTION HISTORY OF VEGETATION COVER IN KRASNOUFIMSK FOREST-STEPPE.** The biodiversity of current flora in forest-steppe of the Cis-Uralian area in Sverdlovsk Region (Krasnoufimsk forest-steppe) according to many years of research is revealed. Steppe flora is represented 960 species of vascular plants, which belong to 105 families and 403 genera. The analysis of flora is made using an electronic database. It can be related to the Mediterranean Fabaceae-type by the spectrum of basic families. The analysis of life forms revealed that the prevailing in the flora is the grassy one (90.3%). A significant part of the cenosis spectrum are weeds and eurytopic species (25.5%) because of the anthropogenic impact on the area. Visible mesophyte dominance in the flora (49%) determines the character of the forest-steppe. The location determines peculiarities of the formation of flora in Krasnoufimsk forest-steppe. This area is the arena of collision and inter-penetration of different floras. There are many species of the Eurasian (36.3%), Holarctic (17.7%) and Europe (17.0%) geoelements. Currently, the foundation of flora is represented by the boreal floristic complexes involving forest-steppe and steppe species. The local nucleus of the flora is 9.7% of the total number of species. It includes a significant number of endemic and relict species of different historical time. We need to note that although the nature of the forest-steppe flora is preserved, its trend is boreal by the current ecological spectrum and the relation of cenosis groups. The structure of vegetation cover and its change over time (17th-20th centuries) using the geo-botanical maps, including archive ones, is shown in the article. The historical depth of transformation into forest-steppe is determined by three centuries that had an appropriate environmental impact. Now natural ecosystems in forest-steppe cover only 25% of the territory, including: forests – 14%, meadows – 7%, steppes – 4%. A retrospective analysis of phytodiversity of the area takes into account the paleobotanical data from other works on the topic. The family of woody-shrub vegetation type (Betulaceae, Salicaceae) dominated in the pre-boreal period. Currently the families Asteraceae, Poaceae and Fabaceae are represented by the largest number of species. Consequently, there was a change of the tundra-shrub landscape to mesophilic forest-steppe. The studied area of Krasnoufimsk forest-steppe can be regarded as an independent phytochorion at the rate of a district belonging to the Eastern European steppe province of the Eurasian steppe region by the nature of its flora and vegetation.

**Key words:** analysis of present-day flora; vegetation cover dynamics.

P. 218. *Chugunova Yulia K., Vyshegorodtsev Anatoly A.* Institute of Ecology of Water Bodies Used for Fishery (Krasnoyarsk, Russia), Siberian Federal University (Krasnoyarsk, Russia). **CURRENT STATUS OF FISH DIVERSITY AND PARASITES OF FISH IN KRASNOYARSK RESERVOIR.** Regulation of the Yenisei River basin has resulted in the appearance of an entirely new hydrological, hydrochemical, hydrobiological characteristics. The species composition and ichthyocenosis structure has changed under the new conditions. Biological productivity generally increases. About 30 species of fish and agnathous lived in the flood zone before the reservoir was created. Rheophilic forms were the base of ichthyocenosis (60%). The most numerous species were represented by dace, roach, perch, starlet and taimen. Currently only 25 species of fish and 1 species of agnathous inhabit the Krasnoyarsk Reservoir. The ichthyofauna diversity of the reservoir was due to the fishes in the Yenisei River mainstream, tributaries, ducts and partially to the immigrants from the lakes of the flood zone. In fact, the fishes of the Upper Yenisei were preserved and redistributed in the waters of the pond. As a

result of spontaneous settlement three species (carp, verkhovka, trout) appeared in the lake, two species (cisco, peled) appeared due to the formation of pasture aquaculture and one species appeared during acclimatization (bream). Acclimatized species fully naturalized are represented by bream, carp and verkhovka (non-target species). All of them have formed self-reproducing populations. Baikal cisco and peled do not form self-reproducing populations and exist due to the constant immigration of young of the fishes. Over the last twenty years, preferential development is provided to the fish with rapid reproductive potential, with lack of food specialization and indifference to the spawning substrate and dragged spawning or summer spawning with deficiency in providing spawning areas and underdevelopment of prey. The process of parasite fauna formation apparently took place in three stages, similar to most reservoirs, meanwhile each stage was characterized by significant changes in the structure of the parasite-fauna. The first stage represents the destruction of the rheophilic complex due to the loss or reduction of the maximum number of their intermediate and definitive hosts and the beginning of the formation of the limnophilic complex, whose members are related in their development to limnophilic fish. The second stage was characterized by stabilization of the number and species of parasites. The third stage is represented by change in the parasites due to the introduction and distribution of a range of new species of fish, abiotic factors and anthropogenic impact on the pond. At present, fish of the Krasnoyarsk Reservoir are represented by 31 species of parasitic organisms, cestodes dominate in species diversity and extensiveness, trematodes and peritrichous bacteria dominate in numbers. In general, the formation of parasite fauna of fishes in the Krasnoyarsk Reservoir can be considered complete in its basic features, characteristic for this type of reservoir diseases: bothriocephaliosis, triaenophorus, ligula and ergasilus infections.

**Key words:** ichthyocenosis; fauna complex; parasite fauna.