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EVALUATION OF BACKGROUND REGULAR ELEMENTS CONTENT  
IN SOILS OF TULYM ROCK (PERM REGION)

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Data for local background regular elements content in soils of Tulym Rock situated on the territory of Vishera Reserve in Perm Region is given. The local background content values for 11 elements including Sr, Pb, As, Zn, Cu, Ni, Co, Mn, Cr, V, Ti were received. For this purpose measurements of soil element content using X-ray fluorescence spectrometry on spectrophotometer «SPEC-TROSCAN MAX-G» were conducted. Numbers of elements were acquired for 7 phytocenoses of mountain taiga belt, pregolets belt and for Tulym Rock in whole. During analysis of correlation matrix direct and reverse dependencies between parameters investigated were revealed. Local background regular elements content values were presented for spruce-fir-sorrel-fine-fern forest, mixed forest, fir-spruce-bilberry-fine-fern forest, fir-spruce bilberry forest, bilberry spruce forest, sparse birch-fir montane forest, broken mixed bilberry forest; for mountain taiga and pregolets belts; for Tulym Rock. Dependence of soils elements content on elevation of field stations was determined. Data received could be recommended for environmental investigations purposes.

**Keywords:** Vishera Reserve, local background content, X-ray fluorescence spectrometry, Tulym Rock, heavy metals, regular elements.

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## THE POLARIZATION OF SYSTEM MOVING IN THE COASTAL ZONE OF THE LENINGRAD REGION IN 1989–2015

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*The influence of «coastal factor» on structuring and transformation of system of moving in the Leningrad Region is considered and estimated. It is set that the selitebny space in a seaside zone «is displaced» and all Post-Soviet period continues «to be tightened») directly to the coast and its next periphery four subbelts of seaside moving are identified: actually, seaside (from 0 to 50 km from the sea), a belt of the short-range periphery of a seaside zone (from 50 to 100 km), a belt of the periphery of a seaside zone (from 100 to 150 km) distanced from the sea and a belt of the post-periphery of a seaside zone (at distance of 150-200 km from the seashore). The factors the settler and demographic distinctions northern (with more steady, dense, and balanced framework of moving and its economic base) and the southern coast of the Gulf of Finland are revealed; it is shown that density of population and set-*

lements everywhere decreases in process of removal not only from the sea coast, but also St. Petersburg that demonstrates essential, corrective action on moving of a factor of a metropolization.

**Keywords:** system of moving, settlement, municipality, coastal zone, thalasso attractiveness, sea economic activity, Leningrad Region.

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## TECHNOGENIC GEOCHEMICAL FLOWS OF COAL-MINING AREAS AND THEIR IMPACT ON THE ENVIRONMENT (FOR EXAMPLE, THE DONETS BASIN)

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Results of research of technogenic geochemical streams in the Donetsk Basin are presented in article. Scales influence of primary and secondary technogenic streams on environment components – air, soils, the surface and underground water are established. It is recommended to reduce the negative effects of the formation of the environmental situation within the coal-mining territories to develop a specialized specified traffic management system.

**Keywords:** geochemical streams, coal dumps, Donbass, chemical composition, pollution level, technogenic mine water.

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## DEBRIS FLOW HAZARD OF EASTERN CAUCASUS

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The purpose of this work – mapping of zoning mud pools in Eastern Caucasus (within the Russian Federation) to the maximum one-time amount of the solid component of lodging with the release of the genetic component such as water, and the creation of mud characteristics database. The resulting map and database in the current conditions are relevant for the development of recreational facilities of the Eastern Caucasus republics, as well as the health and safety of people.

**Keywords:** mudflow pool, map, database, genesis.

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## APPLICATION OF SETTLEMENT MONITORING OF URBAN ECOSYSTEMS OUTSIDE

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*In this paper we investigate air pollution by industrial enterprises (the example of the city of Nalchik). It has been revealed that some contaminants exceed maximum permissible concentration. Calculate the air pollution index. For the first time revealed high pollution areas of the city of Nalchik. Concluded that significant anthropogenic pollution of the air basin of study area.*

**Keywords:** atmospheric air, polluting substances, air pollution index, maximum permissible concentration, industrial enterprises.

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## THE USE OF HISTORICAL AND PALEOTECTONIC ANALYSIS OF GAS-BEARING CAPACITY ASSESSMENT OF THE YEYSK AREA OF THE KRASNODAR REGION

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*The study provides the methodological approach to assess the prospectivity of the deposits which considers the geological structure and degree of development of the area under study, the history of its geological and logging surveys, critical assessments of possibilities and of the results of the methods used to determine target productivity and system approach to the problem. The authors also proposed the methods of sequential interpretation of thicknesses which made possible the assessment of tectonism predetermining target productivity.*

**Keywords:** efficiency assessment, methodology, system analysis, data interpretation, paleotectonic analysis.

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## THE USE OF COMPLEX VECTORS IN THE STUDY OF TIME SERIES OF GEOMAGNETIC VARIATIONS

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*Averaged along long-term temporal rows of geomagnetic variations, parameters of the regression model, which connects vertical and horizontal components of the vector of variations, were suggested to utilize in frames of «data mining» methodology ideas. The novelty of the approach is the description of the regression as four parameters of a complex vector corresponding to regression coefficients. The computational results are presented for seven observatories of the world-wide net.*

**Keywords:** complete vector, magnetic observatory, geomagnetic variation, times row.

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## IRON IN SURFACE AND UNDERGROUND WATER BASIN THE SEA OF AZOV

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*Levels of the content of Fe and pH in the water of system "The mine waters – the river – the sea" on example of East Donbass territory are presented on the basis of the literary data analysis and materials of own researches. The regression model which describes the relationship between the pH value and the sulfate ions content was calculated. Geochemical barriers and the pH value, at which the intense precipitation of iron hydroxides is identified. The mechanisms of iron behavior in different types of water are described. The processes of oxidation in different conditions are considered in detail, as well as variation in the modes of element occurrence. Extremely high content of total iron in surface water area of coal mining and its increasing in river, estuarine and marine waters was discovered. The authors explain this situation with the fact that the total iron is in this waterbodies has the colloidal form complexes with organic and mineral substance.*

**Keywords:** iron, mine waters, river waters, sea waters, geochemical barrier, sulfates.

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## HOLOCENE SIGNALS OF CLIMATIC HUMIDITY IN CHERNOZEM SOILS OF DIFFERENT HISTORICAL PERIODS WITHIN CENTER OF EASTERN EUROPE

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Modern and buried under mounds chernosem soils, developed 3500–3700 and 4300–4600 years ago have been studied within South-Eastern part of Central Russian Upland. According to the buried soils properties, more humid climatic conditions took place in the study periods on comparison with modern climatic state. Carbonate profiles of buried and modern soils have about similar parameters, but according to reconstruction of organic matter, soil organic carbon stocks in the past were in 1,6–2,6 times more than contemporary indexes. Taking into account separation of the study periods by extremely dry climatic episode 4000–4200 years ago, variability of climatic conditions in the South-East of Central Russian Upland during interval 3500–4600 years ago (especially 3700–4300 years ago) could be the highest for all Holocene.

**Keywords:** holocene, evolution of soils, chernozems, Central Russian Upland.

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## ECOLOGICAL AND GEOCHEMICAL ASSESSMENT OF THE TOPSOIL OF THE OKTYABR DISTRICT OF ROSTOV-ON-DON

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The article presents the main results of the ecological and geochemical research of the state of topsoil of the Oktyabr District of Rostov-on-Don. The content and main features of distribution of heavy metals in the soils from different functional zones of Oktyabr District have been analyzed. The accumulation of heavy metals in the soils of industrial and settlement urban landscapes has been noted. The long-term trends in accumulation of heavy metals in topsoils were identified. The soil pollution level was assessed as acceptable and moderately dangerous.

**Keywords:** heavy metals, functional zones, sources of pollution, geochemical associations, total pollution index.

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