УДК 519.6:551.510.413.5

**FILLING GAPS METHOD IN CRITICAL FREQUENCY DATA ON THE BASED   
COMBINATION OF THE WAVELET TRANSFORMING METHOD   
AND THE AUTOREGRESSIVE MODELS**

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Method of multicomponent modeling of ionospheric data, based on combination of wavelet-transformation with autoregressive integrated moving average models is described. It allows to perform data analysis and build a prediction. To evaluate the method and modeling algorithms based on it we used data of critical frequency *f*0*F*2, recorded at the station “Paratunka” (Kamchatka Peninsula). While data modeling features associated with solar activity which appear in periods of strong earthquakes in Kamchatka are marked.

**Key words:** wavelet transform, autoregressive model, critical frequency, anomalies.

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**MOBILE REFRIGERATION CHAIN FOR SHELLFISH PROCESSING**

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This article covers issues connected with the continuous refrigeration chain created for processing, storage and delivery boiled and frozen mussels to the consumer. At the same time the quality of mussels should be preserved to the greatest extent. Project of mobile processing complex for the production of boiled and frozen mussels using cryo-freezing process with liquid and gaseous nitrogen is created. Mobile complex is to be located at two forty-foot isothermal containers based on truck’s type «MAZ». Complex can quickly process raw mussels at its catching place and deliver boiled and frozen products to distribution refrigerators.

**Key words:** continuous refrigeration chain, boiled and frozen mussels, liquid and gaseous nitrogen, mobile complex.

УДК 656.69(268)

**TOPICALITY OF MAKING DECISIONS CONCERNING SHIPS MONITORING   
IN NORTHERN LATITUDES**

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Within the next few years the essential increase of economic activity in the Arctic region is expected, therefore we are in for navigation activization on the way of Northern shipping way. In this context making decisions concerning ships monitoring is very timely.

**Key words:** Northern sea way, Arctic regions, Shtokmanovskoe mine, continental shelf, monitoring.

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**IONOSPHERIC PARAMETERS APPROXIMATION BASED ON WAVELET   
TRANSFORMATION AND CONNECTIONIST COMBINATION**

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Method of ionospheric data approximation is given. It is based on construction combination of multiple scale wavelet transformation and connectionist which allows to study data structure, to forecast and to reveal anomalous features in ionosphere during solar activity. A basic wavelet function which provides lowest data approximation error is defined. Connectionist software systems are made. Method *effectiveness is proved statistically*.

**Key words:** wavelet transform, neural networks, ionospheric parameters, solar activity.

УДК 574.5(571.150)

**BIOTA OF COMMERCIAL HYPERHALINE LAKES OF ALTAY TERRITORY   
INTO TRANSGRESSIVE AND REGRESSIVE PHASES OF WATER CONTENT**

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Results of long-term monitoring researches on hyperhaline Kulundinskoe Lake and Bolshoe Yarovoe Lake of Altay territory are given. The comparative analysis of mineralization and chemical composition of lakes’ water, numerical and production parameters of phytoplankton and Artemia populations depending on the phase of water was held. Similarities and distinctions in biota reaction of basins on the change of abiotic factors are noted.

**Key words:** artemia, transgressive and regressive phases of water, the hyperhaline reservoirs, biota.

УДК 639.2.053.8

**RATIONAL APPROACH TO DEVELOPMENT OF ANNUAL TAC FORECASTS   
FOR MEDIUM AND LONG LIVED FISHES**

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Dynamics of long-living fish stocks is rather conservative thanks to a complex age-size structure of them.   
It practically excludes sharp interannual fluctuations of the biomass stocks and consequently the recommended TAC. This circumstance allows to redistribute annually efforts of TAC assessment for each stock, alternating a labor-consuming comprehensive assessment procedure with simplified intermediate methods. Intermediate methods of TAC assessment are essentially easier and faster to execute than full procedures. They are based on estimation of tendencies in the biomass stock during some short period before the year of forecast. An interval between two neighbour full assessments depends on features of the stock dynamics, current state, and trade value, and usually doesn't exceed two or three years. The approach is especially effective when a total number of stocks estimated according to this scheme doesn't exceed 5-6 units. The further increase in quantity of estimated stocks makes advantage of this approach less appreciable.

**Key words:** Total Allowable Catch (TAC); abundance index; catch per unit effort (CPUE).

## УДК 502:37.03(571.66)

## RESEARCH OF PUPILS’ ECOLOGICAL CULTURAL LEVEL STUDING AT BYSTRINSKIY COMPREHENSIVE SECONDARY SCHOOL

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The article presents data of sociological research conducted among pupils of Bystrinskiy comprehensive secondary school as well as employees and volunteers of «Bystrinskiy» Cluster of Natural park called «Vulkani Kamchatki». The findings allow us to determine the level of pupils’ ecological culture at Bystrinskiy comprehensive secondary school in comparison with employees and volunteers of «Bystrinskiy» Cluster of Natural park called «Vulkani Kamchatki».

**Key words:** ecological culture, school, natural park, ecological scholarship.

УДК 574.5(571.66-25)

**SUMMER PLANKTON AND BENTHOS IN SMALL SUBURBAN RECREATIONAL   
LAKES NEAR PETROPAVLOVSK-KAMCHATSKY**

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First time ever water physicochemical properties, species composition of phytoplankton and zooplankton and some lakes’ macrozoobenthos located in recreational zone of Petopavlovsk-Kamchatsky are made. All examined lakes are small in their square and depth and can be characterized as «pond-lakes». Data on fish fauna is demonstrated for the Lake of Mikizha only. 15 taxa of micro alga and 21 taxa of zooplankton have been detected in the lakes’ plankton.

**Key words:** lakes, biogenic elements, plankton, benthos, taxonomic composition, micro-algae, rotifers, crustaceans, mollusks.

УДК 664.959

**DETERMINATION OF FOOD VALUE OF MOULDED PRODUCTS   
ON THE BASE OF FISH MINCEMEAT**

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Description of fish mincemeat and the ways of it’s use are described in the article. Definition of products food value is given. Peculiarities of chemical composition of vegetable component which enters into the composition of moulded products formulation are stated. Food value of moulded products produced according to formulations is described. The degree of daily maintenance satisfaction in main substances and energy while using developed variety of moulded products is estimated.

**Key words:** moulded fish mincemeat, fish product from mincemeat, food value, chemical composition.

УДК 664.951.2:639.222

**STUDY OF HYDROLYSIS PROCESSES AND PACIFIC HERRING FAT OXIDATION   
USING CHLORIDE POTASSIUM FOR MATURATION INTENSIFICATOR**

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Description of biochemical changes while fish salting is given. Fatty-acid composition of pacific herring is defined. The influence of chloride potassium concentration on the rate of pacific herring biochemical maturation process is researched. The fact of chemical indicators dependence denoting lipids change on the way of chloride potassium application.

**Key words:** salting, biochemical maturation, pacific herring, chloride potassium, fat, oxidation, hydrolysis.

УДК 664.951.6:639.222

**INFLUENCE OF VEGETABLE COMPONENTS ENTERING INTO   
THE COMPOSITION OF FILLINGS ON THE QUALITY   
OF PRESERVE WHILE STORAGE**

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In the article you can find decription of pacific herring biochemical properties. Main ways of influence on fish lipids which produce antioxidative effect are characterized. Chemical composition of sea buckthorn, Hippophae rhamnoides and red currant *Ribes rubrum* is given. Studies of the influence of *Hippophaë rhamnoídes berries* and red currant berries on chemical factors change while storage of herring preserve are described.

**Key words:** technology, salting, pacific herring, chemical composition, plants berries.

УДК 664.951.6

**USE OF FILLINGS, SAUCES AND GARNISHES IN THE PRODUCTION   
OF PRESERVED FOOD PRODUCTS**

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In this article the main tendencies of development of production technology of preserved food products are considered, as well as the review of information concerning assortment of fillings, sauces and garnishes used during production of preserved food in Russia and abroad is presented.

**Key words**: production of preserved food, fillings, sauces, garnishes, quality, safety.

УДК 597.552.511: 591.5 (571.651)

**ESTIMATION OF ABUNDANCE, DISTRIBUTION AND AGE STRUCTURE   
OF PACIFIC SALMON SPECIES OF ONCORHYNCHUS WITHIN THE BASIN   
OF THE AMAAM LUGOON (*CHUKCHI PENINSULA*)**

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The characteristic of spawning areas and distribution of sockeye and pink salmon in the water bodies located within the territory of the Amaam coal deposit is given. Salmon abundance in the basins of different type is estimated. Salmon age is estimated due to ear-stones. Correlation of different types of spawning sockeye salmon is demonstrated.

**Key words:** sockeye salmon,pink salmon, abundance, age structure.

УДК 664.8:582.272

**PROSPECTIVE DIRECTIONS OF BROWN ALGAE APPLICATION IN FOOD INDUSTRY**

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Properties of brown algae polysaccharide are studied. Technologies of alginate extraction are described.

Algae species being alginate source are given. The influence of raw algae drying methods on qualitative parameters of dried algae and on properties of sauces containing mayonnaise produced on its base.

**Key words:** alginic acid, alginates, sorbates, amendment, drying, emulsive products, sauces containing mayonnaise, viscidity.

УДК 504.5: 553.411(571.66)

**ECOLOGICAL PROBLEMS OF GOLD MINING, TRANSPORTATION, PROCESSING   
AND UTILIZATION ON OZERNOVSKIY ORE FIELD IN KARAGINSKY REGION**

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In present article we disclose ecological problems in the process of mining, processingand utilization ofore gold in Kamchatke on the example of Ozernovsky ore gold deposit in Karaginsky municipal region. Conservancy propositions including recovery of natural landscape on the territory of deposit, application of indispensable technologies and closed cycle of production, constant ecological monitoring with indispensable involvement of district members of the public are made.

**Key words:** ore field, gold, landscape, breach of acres, quarry, relief, atmospheric air, water objects, environmental pollution, waste products and wastes of consumption, construction, exploitation.

УДК 353.2:332.821(571.66)

**IMPROVEMENT OF THE HOUSING POLICY ON THE LEVEL OF THE RUSSIAN   
FEDERATION SUBJECT (ON THE EXAMPLE OF KAMCHATKA REGION)**

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Housing policy is analyzed in the given article. Some specific housing and communal services and power economy problems of Kamchatka region are presented. Measures concerning housing policy improvement on the level of the Russian Federation subject (on the example of Kamchatka region) and the project of long-term lease system are offered.

**Key words:** improvement project, housing policy, Kamchatka region.

УДК 353.2:332.14(571.66)

**IMPROVEMENT OF THE PROCESS OF DEVELOPING AND IMPLEMENTATION   
OF INDIGENE NORTH SMALLER PEOPLES OF KAMCHATKA REGION   
SUPPORT PROGRAM**

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In the article the we touch upon the problem of state policy implementation concerning preservation and development of indigene North smaller peoples. The project of measures for this activity improvement is offered.

**Key words:** Indigenous Peoples of the North, management problems, programs.

УДК 323.2

**MECHANISMS OF SUPERVISION AND INTERACTION BETWEEN   
THE FEDERAL CENTER AND POLITICAL REGIONAL ELITE**

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The article gives insight of interaction between the federal center and regional political elite. The most important political and economic mechanisms of the federal center control system of the Russian Federation regions.

**Key words:** political elite, centre, region, political mode, imperial model, president, governor.

УДК 378.16:811.111

**USE OF INTERACTIVE BOARD IN TEACHING FOREIGN LANGUAGE TO STUDENTS   
OF ECONOMICS DEPARTMENT (ENGLISH LANGUAGE, TECHNICAL UNIVERSITY)**

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The article deals with the use of interactive board as the information technology and methodological innovation in teaching foreign language to students of economics department. Teaching foreign language with the use of interactive board or dialogue training optimizes educational process and increases the students’ motivation. The advantages of working with the board are listed for both students and teachers in Technical University. Varieties of usage interactive technology further education improvement and provide harmonized development highly-qualified specialists.

**Key words:** Interactive board, information technologies, interaction, multimedia courses, teaching foreign language.