

## INVESTIGATIONS OF BAR-CODE RODS OF DIGITAL LEVELS

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Nowadays digital levels are being used to do high - precision as-built surveying levelling with short ways while assembling and maintaining engineering structures and equipment. In order to test their technical specifications it's necessary to investigate levels and levelling rods. Besides, while doing levelling or when transported, some accidental mechanical blows can course the violation of a digital level electronic system. In this case there appears the necessity to conduct repeated investigations. The method of "digital level – bar-code rod system" investigation that can be applied both in laboratory and field conditions is suggested in this article.

**Key words:** digital levelling; bar-code rod; adjustment.

## THE INVESTIGATION OF EARTH'S CRUST MOVEMENTS AND DEFORMATIONS ON A TASHTAGOL'S GEODYNAMIC GROUND

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By the results of ten cycles of GPS-observations taking into account laws of the theory of elasticity research of horizontal earth movements on Tashtagol's geodynamic ground was carried out. Distributions of movements and deformations were received, visualization of the basic characteristics was executed.

**Key words:** geodynamic ground, movements and deformations of the earth's crust, visualization.

## DEPENDENCE OF FLAT AND SPHERICAL LAYER CORRECTIONS IN AN INCOMPLETE TOPOGRAPHIC REDUCTION ON THEIR THICKNESS AND RADIUS OF A CONSIDERED ZONE

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The article estimates errors committed in calculations of a reduction of a gravitational field of the Earth when replacement of a spherical layer by a flat one in the area of a circular zone of 200 km takes place. Conditions at which the Buge

adjustment (an infinite flat-parallel layer) corresponds to a spherical circular layer are considered.

**Key words:** gravitational field reduction, spherical parallel layer, flat parallel layer, Buge plate.

## **INFLUENCE OF ELECTROMAGNETIC FIELDS ON ACCURACY OF INDICATIONS OF ELECTRONIC GEODETIC DEVICES**

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Some questions of the account of the hindrances created by electric mains, on electronic component GLONASS/GPS-receivers, and as, possible ways of decrease in electromagnetic loading on devices are considered.

**Key words:** electronic tacheometer, an electromagnetic field, geodetic GLONASS/GPS-receivers, a magnetostatic field, electromagnetic indignations, crown discharges, frequency range.

## **METHODIC OF ORTHOPHOTOPLANS' CREATION BY MEANS OF LIDAR DATA**

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In the article orthomosaic creation method by means of lidar data in MicroStation TerraSolid software is shown.

**Key words:** orthomosaic, lidar scanning, methodic, accuracy assessment.

## **INVESTIGATION OF SIGHTING ACCURACY OF MEDIUM AND HIGH RESOLUTION SATELLITE IMAGES**

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Accuracy of satellite images processing substantially depends on the accuracy of points' measurement in digital image. The results of investigations of sighting accuracy using satellite images of medium and high resolution during georeferencing are given.

**Key words:** satellite images, geometrical referencing of images, sighting, accuracy assessment.

## **NATURAL AND ANTHROPOGENIC THERMAL BALANCE OF THE EARTH**

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The role of human activities in global climate warming is described. There is a conclusion that the periodical weather condition alternations are caused by natural regularities cosmic and terrestrial in comparison with which the technogenesis effect is enormously small and appears only in short-term local scale. This is confirmed by the comparative analysis of natural and anthropogenic thermal balance of the Earth.

**Key words:** climate, thermal balance of the Earth, global warming factors, glasshouse effect, anthropogenic influence.

## **GEOPORTAL DECISIONS IN THE SPHERE OF THE STATE REAL ESTATE CADASTRE SERVICES**

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At the present moment the state service of cadastral real estate is a system, that includes different kind of information. Availability of this information can be taken into account due to geoportals based on GIS technologies. It allows to improve an efficiency of the state service system.

**Key words:** geographical information systems, geoinformational area, geoportal, the state service of cadastral real estate.

## **INTEGRATED ASSESSMENT OF LAND RESOURCES**

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The article presents the data on the history of the legal right basis for land resources utilization in Russia and the statistics of Russia's entering the world market of resources and raw materials. The legal right basis for the land market is shown. Some propositions are given as concerns the methodical approach to the development of the system forecasting (approved by practice) of Russian territories natural potential development.

**Key words:** integrated assessment, natural potential of territories, principles and factors of the technical approach, system forecasting of the territory natural potential development.

## **INFORMATION SUPPLY OF RATIONAL USE AND PROTECTION OF NORTHERN TERRITORIES**

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Features of rational use and protection of the lands of northern territories, such as an establishment of borders of territories of traditional wildlife management, granting of the lands under objects of oil-and-gas branch, finding and the account of the broken and polluted lands, planning recultivation are considered. Offers on perfection of an information supply of rational use and protection of the lands of northern territories are presented.

**Key words:** traditional wildlife management, oil-and-gas branch, information supply, data base, recultivation.

## **THE ALGORITHM OF A CHOICE APOCHROMATIC PAIR OF GLASSES IN MULTICOMPONENT ASTRONOMICAL OBJECTIVE**

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The algorithm of a choice apochromatic pair of glasses in multicomponent astronomical objective is presented in the article.

**Key words:** algorithm, objective, apochromatic pair of glasses.

## METHOD FOR RECOGNITION OF THREE-DIMENSIONAL SHAPE OF OBJECTS IN ITS POLARIZED THERMAL RADIATION

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In article presents methods and techniques of remote determination of the three-dimensional shape of objects and getting their three-dimensional image. The comparative analysis of different methods of detection. Also provides a method of obtaining three-dimensional images of objects on their own polarized infrared radiation in real time.

**Key words:** thermal imaging, polarization, thermogram, three-dimensional image.

## CURRENT TRENDS IN OPTICAL SIGHTS FOR HUNTERS

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The basic trends in the development of hunting sights are presented in the article and the article reports on the design of a new optical system with high features.

**Key words:** scopes for hunters, characteristics, optical design.

## OPTOELEKT RONICAL ALARM SYSTEM TO EXCESS OF MAXIMUM PERMISSIBLE CONCENTRATION CARBON IN AIR

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In article deals the optoelektronical alarm system to excess of maximum permissible concentration of carbon in air. Its function chart, time diagram's and a design of the primary converter are resulted.

**Key words:** emitting diodes, emitting diodes, optoelectronic emitting receiver (OER)optoelectronic systems.

## **THE MULTIPURPOSE OPTOELEKTRONICAL AUTOMATED MONITORING SYSTEM OF THE OPTICAL PARAMETERS OF OIL AND MINERAL OIL**

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Offer the block diagramed of the automated analytical monitoring system of quality of oil and mineral oil on a basis optoelektronical multipurpose automatic controller- measuring systems with to help it is possible to measure simultaneously following parameters: density, the maintenance of water, salts, sulfurs, and also the expense.

**Key words:** the automated analytical monitoring system, oil, oil products, optoelectronics, measuring system.

## **INCREASE OF CONTRAST AND INFORMATION IMAGES ON THE BASIS OF THE SPECTRAL AND SPATIALLY-ANGULAR FILTRATION OF RADIATION**

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The method of pseudo-color coding offered in the present work from-brazheny is based that till now the most part of any in-formation, including interferograms, is estimated visually, and contrast sensitivity of an eye to color changes on two order exceeds chuvstvitelnost eyes to intensity changes.

**Key words:** pseudo-colors, interferogram, information.

## **HIGH-PERFORMANCE COLORIMETRIC METHOD FOR AUTOMATIC COLOUR CLASSIFYING DIAMONDS**

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The article considers method for classifying diamond according to their color based on diamond digital images registration and their after-treatment. Image processing allows greatly to minimize the influence of the position, glare and individual particularities of the diamond on result of the measurement. The results of the experiments have demonstrated the increasing of the sorting accuracy up to 98 per cent when proper exclusion of flares, black inclusions and the areas adjoining crystal edges was made.

**Key words:** color theory, RGB-method, classification diamonds by color.

## **RESEARCH OF FROSTS AS ECOLOGICALLY DANGEROUS PHENOMENA**

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The essence, origin, spatial distributions of the frosts in Novosibirsk Region are considered by the example of five-year period of the XXI-st century; these exemplify ecologically dangerous phenomena which became more frequent in the late years of new century.

**Key words:** climate, ecology, dangerous phenomena, frosts, temperature.

## **HISTORICAL ASPECTS AND MODERN TRENDS OF LEASING DEVELOPMENT IN RUSSIA**

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The activity of distribution leasing in Russia has begun in the middle of XX century, where the subject of contract called «lend lease» was the military technology. The Government of the Russian Federation considers the basic advantages of leasing before the commodity credit, decisions about development of financial lease. The specificity of the Russian financial market has led to variety leasing operations.

**Key words:** the contract of «lend lease», the leasing relations, the leasing organisations, the leasing financing, the leasing services.