L 12722-63   EPF(c)/EWP(j)/EWT(m)/BDS   ASD   Pr-4/Pc-4   RM/WW   66

ACCESSION NR: AP3002294   s/0062/63/000/006/1111/1114   65

AUTHOR: Dolgiy, I. Ye.; Meshcheryakov, A. P.; Gayvoronskaya, G. K.

TITLE: Synthesis and properties of silicon and germanium-containing hydrocarbons of the cyclopropane series

SOURCE: AN SSSR. Izv. Otdeleniye khimicheskikh nauk , no. 6, 1963, 1111-1114

TOPIC TAGS: silicon-containing hydrocarbons, germanium-containing hydrocarbons, cyclopropane series

ABSTRACT: Hydrocarbons of the cyclopropane series having an atom of Si or Ge in the molecule were synthesized and properties, including extensive Raman data, were described. (Trimethyl germyl-methyl) cyclopropane, (trimethyl silylmethyl) cyclopropane, (triethylsilyl) cyclopropane and (trimethylsilyl) cyclopropane, and for comparison, neopentylcyclopropane, were studied. In the reaction of the unsaturated silicon hydrocarbon with methylene iodide in the presence of Cu-Zn vapors, neither the Alpha or Beta position of the double bond (in the case of trimethylallyl- or trimethylvinyl silane), nor the nature of the element found in the position Beta to the double bond (in the case of trimethylallyl silane, trimethylallyl germane and 4,4-dimethylpentene-1) show any significant effect on the yield of the cyclopropane produced.

Card 1/2/   Association:Inst. of Organic Chemistry, Academy of Sciences SSSR

MESHCHERYAKOV, A.P.; DOLGIY, I.Ye.

Method of producing unsaturated ketones in the cyclopropane series.
Dokl. AN SSSR 154 no.1:152-154 Ja'64.   (MIRA 17:2)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
Predstavleno akademikom A.A. Balandinym.

ACCESSION NR: AP4019975   S/0020/64/154/006/1376/1378

AUTHOR: Dolgiy, I. Ye.; Meshcheryakov, A. P.

TITLE: Synthesis and properties of dimethyldi-(cyclopropylmethyl)-, methyltri-(cyclopropylmethyl)- and tetra-(cyclo-propylmethyl) silanes

SOURCE: AN SSSR. Doklady*, v. 154, no. 6, 1964, 1376-1378

TOPIC TAGS: dimethyl silane, methyl silane, cyclopropylmethyl silane, silicon-hydrocarbon, zinc copper vapor

ABSTRACT: Dimethyldi-(cyclopropylmethyl) silane

was obtained with 32% yield. It was not possible to precipitate the reaction product of methylene iodide with only one multiple bond of dimethyldiallylsilane.

Card   1/3

ACCESSION NR: AP4019975

namely, dimethylallyl-(cyclopropylmethyl) silane. This is the second hydrocarbon known which contains three 3-membered carbon rings and the first hydrocarbon of this type which contains a silicon atom. However, in a fraction precipitated during fractionation of the reaction mixture which boils below the hydrocarbon named, some impurity (10-15%) of unsaturated hydrocarbon was found which obviously was either methylallyldi-(cyclopropylmethyl) or methyldiallyl-(cyclopropylmethyl) silane or a mixture of them. When methylene iodide was reacted with tetraallyl-silane in the presence of zinc-copper vapor, silicon-hydrocarbon was obtained with about a 13% yield which according to boiling temperature and elementary analysis data, is tetra-(cyclopropylmethyl) silane
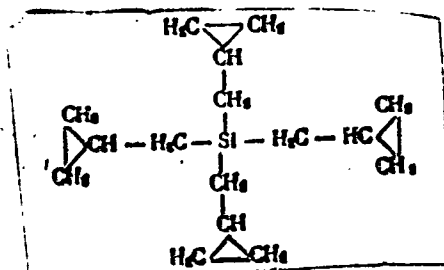
Card 2/3

ACCESSION NR: AP4019975

"I. V. Vikha took part in the experiments." Orig. art. has: 00

ASSOCIATION: Institut organicheskoy khimii im N. D. Zelinskovo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences SSSR)

SUBMITTED: 20Jul63   DATE ACQ: 23Mar64   ENCL: 00

SUB CODE: CH   NO REF SOV: 005   OTHER: 002

Card 3/3

DOLGIY, I.Ye.; MESHCHERYAKOV, A.P.

Interaction of diazoacetic ester with tetraallylsilane. Dokl.
AN SSSR 157 no.3:615-618 Jl '64.   (MIRA 17:7)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo AN SSSR.
Predatavleno akademikom A.A. Balandinym.

MESHCHERYAKOV, A.P.; DOLGIY, I.Ye.

Synthesis and properties of hydrocarbons with two adjacent three-membered carbon rings. Izv. AN SSSR Ser. khim. no.7: 1333-1335 Jl '64.   (MIRA 17:8)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.

MESHCHERYAKOV, A.P.; PETROVA, L.V.

Synthesis of mono- and diacetylene hydrocarbons having quaternary
carbon atoms. Izv. AN SSSR. Ser. khim. no.8:1488-1497 Ag '64.
(MIRA 17:9)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

DOLGIY, I.Ye.; MESHCHERYAKOV, A.I.; SHVELOVA, I.P.

Comparative reactivity of alky.-substituted derivatives of
cyclopropane. Izv. AN SSSR Ser. khim. no.1:192-194 '65.
(MIRA 18:2)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

MⅠⅩⅠⅠ ⅢⅩⅠⅠ, ...: . Ⅰ , Ⅰ .

Ⅰ ...   .
. ...
no.1:   - .1   .

1. ...   .   Ⅰ . .   .
...   11,   .

L 01815-67 EWT(m)/EWP(j)   RM

ACC NR: AP6035641   SOURCE CODE: UR/0062/66/000/001/0116/0121

AUTHOR: Meshcheryakov, A. P. and Erzyutova, Ye. I., Institute of Organic Chemistry
im. N. D. Zelinskiy, AN SSSR (Institut organicheskoy khimii AN SSSR)

TITLE: Free-radical method of synthesis of hydrocarbons with several quaternary
carbon atoms in the molecule

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1966, 116-121

TOPIC TAGS: free radical, synthetic hydrocarbon

ABSTRACT: When di-ter-butyl peroxide is decomposed in hydro-
carbons, several parallel reactions occur: 1) homolytic break-
down of the peroxide at the O-O bond with the formation of a
butoxy-radical $(CH_3)_3CO$; 2) removal by the butoxy-radical of
labile H-atoms from the solvent molecule with the formation of
free radicals; 3) reactions of free radicals formed from the
solvent of recombination of the hydrocarbons, disproportionation
and polymerization. The more stable the radicals formed, the
more they are capable of recombining to form dimers. Experiment-
al data shows that the stability of free radicals rises with an
increase in the number of substituents at the atom with the non-
paired electron and the greater the branched character of these substituents.
Aryl substituents increase the stability of free radicals more than do alkyl. The
authors used trialkyl- and aryldialkylsubstitued methane as solvents, which have the

Card 1/2

0922   0045

L 01815-67

ACC NR: AP6035641

least labile H-atom at the tertiary carbon. Orig. art. has: 1 table. [JPRS: 37,177]

SUB CODE: 07 / SUBM DATE: 11 Sep 63 / ORIG REF: 005 / OTH REF: 006

Card 2/2 fv

MESHCHERYAKOV, A. S.

MESHCHERYAKOV, A. S.: "Some problems in the theory of semi-proper
continued second-order fractions." Saratov State U imeni N. G.
Chernyshevskiy. Saratov, 1956.
(Dissertation for the Degree of Candidate in Physicomathematical
Sciences.)

SO: Knizhnaya Letopis', No. 26, 1956

MESHCHERYAKOV, A.V.,inzh. (Khar'kov)

Theory and design of compensators for NSM-1 levels with self-
adjusting line of sight. Izv.vys.ucheb.zav.; prib. no.3:131-
134 '58.   (MIRA 12:2)
                    (Surveying--Instruments)

OGLC3LIN, D.N.,prof.; MESHCHERYAKOV, A.V.,inzh.

New mine surveying level with self-adjusting sights axis. Gor. zhur.
no.4:59-61 Ap '58.   (MIRA 11:4)
        (Mine surveying--Equipment and supplies)

AUTHOR: Meshcheryakov, A. V.   6-58-6-9/21

TITLE: Level NSM - 1 (Nivelir NSM - 1)

PERIODICAL: Geodeziya i kartografiya, 1958, Nr 6, pp. 41 - 44 (USSR)

ABSTRACT: The factory for surveying instruments at Khar'kov developed
                the level NSM - 1. In this level the line of sight is auto-
                matically adjusted in a horizontal position. An exact description
                explains by which means this is achieved. In the optical
                laboratory of the factory the accuracy in the adjustment of the
                line of sight to the horizontal position was investigated. This
                investigation is described. The results of the investigation and
                the estimation of the accuracy are mentioned in a table. The
                data of this table show that the error of the adjustment of the
                line of sight by the compensator does not exceed 0",2. Several
                additional investigations proved this result. The first test
                set of these instruments will show inhowfar the efficiency of
                work can be increased in using these levels. There are 2 figures
                and 1 table.

Card 1/2

Level NSM - 1   6-58-6-9/21

1. Geophysical surveying--Equipment   2. Theodolites--Design   3. Theodolites
--Calibration

Card 2/2

·3(4)·

AUTHOR: Meshcheryakov, A. V.   SOV/154-59-1-12/19

TITLE: Optical Mining Theodolite With an Inside Distance Meter
                 (Opticheskiy marksheyderskiy teodolit s vnutrennim dal'nomerom)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"-
                 yemka, 1959, Nr 1, pp 115-131 (USSR)

ABSTRACT: The great number of experiments in the USSR and abroad for
                 employing the optical range finder in longitudinal surveys in
                 mines had no success. General deliberations on the possibility
                 of an instrument to be used for this purpose are given at
                 first. The range finder with a basis inside and a lens repre-
                 sents the most convenient instrument as for construction and
                 easiness of work. It belongs to the theodolite OTTG-30
                 (system by N. A. Gusev). The device has a basis 50 mm long
                 and an accuracy of 1 : 300 in distance measuring in mines
                 between 5 and 60 m. The drawbacks of the apparatus are:
                 the necessity of computing the distances by a formula or
                 table, and the small accuracy in distance measuring. - The
                 possible methods of eliminating these drawbacks are pointed
                 out here, and further hints for improving the construction
Card 1/3   and manufacture of the device are given. In this connection,

Optical Mining Theodolite With an Inside Distance   SOV/154-59-1-12/19
Meter

a close investigation is carried out. At first, the construc-
tion of this device is described in short, then its theoretical
accuracy is investigated, and it is shown that the accuracy
is nearly double the accuracy demanded. The use of uniform
reading scales in the distance meter with a lens compensator
complicates the work. This drawback can be eliminated by
the use of nonuniform scales. In this connection, the theory
of building up and computing nonuniform scales for a distance
meter is described. An analysis of instrumental drawbacks in
the distance meter with an inside basis is then given. It
shows that the device can be manufactured with an accuracy
of under 1 : 2,000 as it is required for distance measuring
in mines between 20 and 60 m. The accuracy of coincidence of
two pictures of lines of the distance-measuring mark is
investigated, and the computation of the separating device
(for obtaining two independent pictures of the two halves
of one line) is indicated. Finally, the method of preparing
the distance-measuring scale is described. The investigations
carried out show that the nonuniform scales of the distance
Card 2/3   meter with a lens compensator can be produced in series

Optical Mining Theodolite With an Inside Distance   SOV/154-59-1-12/19
Meter

according to the actual values of the focal distances of
the compensating lenses. This permits to read the dis-
tances directly on the distance-measuring scales. There are
10 figures and 1 table.

ASSOCIATION: Khar'kovskiy zavod marksheyderskikh instrumentov (Khar'kov
Works of Mine-surveying Instruments)

Card 3/3

ORLOVSKIY, S.V., kand. tekhn. nauk; MESHCHERYAKOV, A.V., inzh.

Mine orientation by optical device for the projection of vertical points.
Ugol' Ukr. 3 no.11:40-41 N '59.   (MIRA 13:3)
                   (Mine surveying—Equipment and supplies)

< (1)

AUTHOR: Meshcheryakov, A. V.   SOV/5-59-5-1 /26

TITLE: Optical Mining Transit OMT-30 (Opticheskiy marksheyderskiy
                teodolit OMT-30)

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 5, pp 55-59 (USSR)

ABSTRACT: Khar'kovskiy zavod marksheyderskikh instrumentov (Khar'kov
                Works for Underground Survey Instruments) have developed a
                new optical mining transit OMT-30 with a self-adjusting line
                of the zero point on the vertical circle. The transit serves
                the measuring of horizontal and vertical angles as well as
                the carrying-out of geometrical and trigonometrical levelings
                of the 1st order in pits and in open-face mining. The root
                mean square deviation in angle measuring with full repetition
                under the usual conditions does not exceed ± 5". In the
                carrying-out of geometrical leveling the root mean square
                deviation in the determination of the elevation difference or
                kilometer of a reciprocal leveling does not exceed
                The main data of the transit and a description of the
                are presented. In 1958 the transit was tested in pits. At
                present a batch of test transits are being tried, and series
Card 1/1   production is being prepared. There are 4 figures and 2 tables.

MESHCHERYAKOV, A. V., Cand Tech Sci -- (diss) "Self-restoring compen-
sators." Moscow, 1960. 20 pp; (Ministry of Higher and Secondary Spec-
ialist Education RSFSR, Moscow Inst of Engineers In Geodesy, Aerial
Photography, and Cartography); 150 copies; price not given; (KL, 28-60,
161)

LEBEDEV, N.N., dotsent, kand. tekhn. nauk; MESHCHERYAKOV, A.V., kand. tekhn. nauk

High-precision optical centering device. Izv. vys. ucheb. zav.;
geod. i aerof. no.3:109-116 '64.   (MIRA 18:3)

1. Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i
kartografii (for Lebedev). 2. Khar'kovskiy zavod marksheyderskikh
instrumentov (for Meshcheryakov).

PSCHENICHNYY, I.P.; SHTEYGARDT, Yu.N.; MESHCHERYAKOV, A.V.; VASIL'YEV, V.N.; SOKOLOVA, E.F.; BROVKOVICH, E.D.; RUBANOVSKIY, B.R.; LUR'YE, R.G.; PARAKHONYUK, Z.M.; GOROKHOVSKIY, B.I.; ZHDANOV, V.S.; GORBUNOVA, Z.V. GLIKIN, M.I.; TAVAR'YAN, E.A.; SUKHODOLYA, Ye.I.

L 47050-65   EWA(k)/FBD/EWG(x)/EWT(1)/GEC(k)-2/EEC(t)/T/EEC(b)-2/EWP(k)/EWA(m)-2/
EWA(h)   Pn-4/Pn-4/Po-4/Pf-4/Psb/Pi-4/Pl-4   IJP(c)   WG

ACCESSION NR: AP5007551   S/0368/65/002/001/0090/0091

AUTHOR: Meshcheryakov, A. V.; Rom-Krichevskaya, I. A.

TITLE: Some characteristics of a laser with prism reflectors

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 1, 1965, 90-91

TOPIC TAGS: laser cavity, laser reflector, laser pump energy, laser efficiency

ABSTRACT: The authors investigated a laser whose external end reflectors were
paired flat mirrors mounted at a nearly right angle to each other, and total in-
ternal reflection prisms, whose ray paths were similar to those of these mirrors.
The mirrors could be inclined to each other at a small angle which could be meas-
ured accurate to 5". The corners of the reflectors were placed mutually perpen-
dicular at a distance of 290 mm from each other. A slot approximately 0.1 mm wide
is left between the mirrors of one reflector for extraction of the energy from
the resonator. The active rod was 70 mm long and 7 mm in diameter, made of
neodymium-activated glass and located in the center part of the resonator. The
dependence of the threshold pump energy on the angle of inclination of the two

Card 1/3 2

L 47050-65

ACCESSION NR: AP5007551

mirrors is shown in Fig.1 of the Enclosure. The increase of pump energy when the
angle between the mirrors is larger than 90° is explained. It is concluded that
for minimum pump energy and maximum output energy the total internal reflection
prism used in optical resonators should have an angle somewhat smaller than 90°,
and never larger. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 17Jun64   ENCL: 01   SUB CODE: EC

NR REF SOV: 000   OTHER: 000

Card 2/3

L 63381-65   EWA(k)/FBD/EWT(l)/EWP(e)/EWT(m)/EEC(k)-2/EWP(i)/T/EWP(k)/EWP(b)/
EWA(m)-2/EWA(h)   SCTB/IJP(c)   WG/WH
ACCESSION NR: AP5019761

UR/0051/65/019/002/0264/0269
621.375.9:535

AUTHOR: Rom-Krichevskaya, I. A.; Ratner, A. M.; Meshcheryakov, A. V.

TITLE: Threshold power of a laser with misaligned optical system

SOURCE: Optika i spektroskopiya, v. 19, no. 2, 1965, 264-269

TOPIC TAGS: solid state laser, neodymium laser, glass laser, laser optics, laser
alignment

ABSTRACT: The authors determine the threshold pump power of a solid-state laser
having an angular beam spread on the order of 10—20' and a misaligned optical sys-
tem (which includes the tested rod), and the influence exerted on the threshold
power by the condenser lens placed in front of one of the mirrors confocally with
the rod. A laser system is considered whose principal elements are the rod, plane
mirrors, and a condenser lens. Such a system has been shown previously to be equiv-
alent to a system with confocal spherical mirrors. The misalignment of the optical
system may be due to a relative tilt of the optical axes of the mirrors, or to in-
accurate finish of the rod. The maximum tilt angle under which laser action remains
unaffected is determined by simple geometric optics calculations. Experiments were

Card 1/2

L 63381-65

ACCESSION NR: AP5019761   3

made with a neodymium-glass laser operating at 1.06 μ wavelength, the rods tested
being 70 mm long and 6—8 mm in diameter. The experimental results show that the
permissible tilt angle is directly proportional to the resolution of the lens used
in the experiment, so that the effect of optical misalignment can be compensated
by using a proper lens. The maximum tilt angle is found to be approximately d/2F,
where d is about half the rod diameter and F the focal length of the lens. Some
advantages of a system with flat mirrors and a lens over one with spherical mirrors
are indicated. It is also shown that by testing the laser with a set of several
lenses it is possible to determine the degree of inhomogeneity of the rod. "The
authors thank N. L. Kramarenko for preparing the multilayer reflecting coatings."
Orig. art. has: 3 figures and 8 formulas.   [02]

ASSOCIATION: none

SUBMITTED: 04May64   ENCL: 00   SUB CODE: EC, OP

NO REF SOV: 002   OTHER: 005   ATD PRESS: 4080

Card 2/2

L 46018-66   EWT(1)/EEC(k)-2/T/EWP(k)   IJP(c)   WG/GD

ACC NR: AT6015137   SOURCE CODE: UR/0000/66/000/000/0144/0149

AUTHOR: Kramarenko, N. L.; Meshcheryakov, A. V.; Naboykin, Yu. V.;

Ratner, A. M.; Rom-Krichevskaya, I. A.

ORG: Physico-Technical Institute of Low Temperatures, AN UkrSSR (Fiziko-
tekhnicheskiy institut nizkikh temperatur AN UkrSSR)

TITLE: Investigation of losses and loss-associated characteristics of laser
radiation

SOURCE: Respublikanskiy seminar po kvantovoy elektronike. Kvantovaya
elektronika (Quantum electronics); trudy seminara. Kiev, Naukova dumka, 1966,
144-149

TOPIC TAGS: solid state laser, laser R and D ,   LASER RADIATION

ABSTRACT: A method for experimental determination of the radiation loss in a
solid-state-laser resonator is suggested. A 4-level system is considered. The
loss is determined, a plot of output energy vs. mirror transmissivity is
constructed, and estimated and experimental results are compared for a Nd-glass

Card   1/2

L 46018-66
ACC NR: AT6015137

specimen. All quantities that enter a total-radiation loss formula, except for dispersion loss, are directly measureable. Thus, the problem is reduced to determining the dispersion loss. The latter is derived from the experimental data on the effect of the first-mirror transmissivity upon the threshold pumping energy. The knowledge of the resonator radiation loss permits determining the optical transmissivity of mirrors. Orig. art. has: 4 figures and 16 formulas.

SUB CODE: 20 / SUBM DATE: 12Feb66 / ORIG REF: 004 / OTH REF: 002

Card 2/2 fv

VELIKORETSKIY, D.A.; LORIYE, K.M.; FINKEL', I.I.; GRIGORCHUK, Yu.F.;
BERGER, L.Kh.; UUTROBINA, V.V.; KHARCHENKO, V.P.; MESHCHERYKOV, A.V.,
student V kursa; OBEREMCHENKO, Ya.V., kand.med.nauk; NIKITIN, A.V.;
MUKHOYEDOVA, S.N.; KUSMARTSEVA, L.V., assistent; KUZNETSOV, V.A.,
dotsent; KUKHTINOVA, N.A., assistent; BONDARENKO, Ya.D. (g. Fastov);
KURTASOVA, L.V. (g. Fastov); PEVCHIKH, V.V.; CHURAKOVA, A.Ye.;
BABICH, M.M.; KUZ'MIN, K.P.; PAVLOV, S.S.; SHEVLYAKOV, L.V., kand.
med.nauk; IGNAT'YEVA, O.M.; ZEYGERMAKHER, G.A.; GUTKIN, A.A.;
POLYKOVSKIY, T.S.

Resumes. Sov.med. 25 no.11:147-152 N '61.   (MIRA 15:5)

1. Iz Instituta grudnoy khirurgii AMN SSSR (for Velikoretskiy, Loriye,
Finkel'). 2. Iz bol'nitsy No.3 Gorlovki Stalinskoy oblasti (for
Grigorchuk). 3. Iz Tyumenskoy oblastnoy bol'nitsy (for Berger,
Utrobina). 4. Iz Karatasskoy rayonnoy bol'nitsy Yuzhno-Kazakhstanskoy
oblasti (for Kharchenko). 5. Iz Gospital'noy khirurgicheskoy kliniki
I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova
(for Meshcheryakov). 6. Iz kliniki propedevticheskoy terapii Stalinskogo
meditsinskogo instituta na baze oblastnoy klinicheskoy bol'nitsy
imeni Kalinina (for Oberemchenko). 7. Iz kliniki gospital'noy terapii
Voronezhskogo meditsinskogo instituta (for Nikitin, Mukhoyedova).
8. Iz kafedry obshchey khirurgii Kishinevskogo meditsinskogo instituta
(for Kusmartseva).   (Continued on next card)

MESHCHERYAKOV, A.V. (Moskva)

    Mitral insufficiency and problems of surgical treatment. Fel'd. i
akush. 26 no.11:9-11 N '61.   (MIRA 15:2)
                      (MITRAL VALVE)

MEN'SHIKOV, V.V.; USVATOVA, I.Ya.; LEBEDEVA, R.N.; MESHCHERYAKOV, A.V.

Functional state of the adrenal glands and steroid therapy in surgical interventions. Khirurgiia 39 no.9:39-45 S'63
(MIRA 17:3)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - deystvi-tel'nyy chlen AMN SSSR prof. B.V. Petrovskiy) i mezhkliniches-koy gormonal'ncy laboratorii pri gospital'noy terapevticheskoy kliniks (zav. - deystvitel'nyy chlen AMN SSSR prof. A.L. Myasnikov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

SOLOV'YEV, G.M.; USVATOVA, I.Ya.; MESHCHERYAKOV, A.V.

Function of the adrenal cortex in experimental extracorporeal circu-
lation. Eksper. khir. i anest. 9 no.2:77-80 Mr-Ap '64.   (MIRA 17:11)

1. Laboratoriya iskusstvennogo krovoobrashcheniya pri kafedre gospital'noy
khirurgii (zav. - prof. B.V. Petrovskiy) i gormonal'naya laboratoriya pri
kafedre gospital'noy terapii (zav. - prof. A.L. Myasnikov) I Moskovskogo
ordena Lenina meditsinskogo instituta imeni Sechenova.

SOLOV'YEV, G.M.; MEN'SHCHIKOV, V.V.; USVATOVA, I.Ya.; MESHCHERYAKOV,
    A.V.; MANEVICH, A.Z., red.

    [Adrenal hormones in surgery] Gormony nadpochechnikov v
    khirurgii. [By] G.M.Solov'ev i dr. Moskva, Meditsina, 1965.
    261 p.   (MIRA 18:5)

MESHCHERYAKOV, A.Ya.

Isolation of the anthrax bacteriophage and its use for the
differential diagnosis of Bac. anthracis. Trudy VIEV   26:46-
55 '62.   (MIRA 16:2)

1. Laboratoriya mikrobiologii i immuniteta Vsesoyuznogo instituta
eksperimental'noy veterinarii.
          (Bacteriophage)   (Bacillus anthracis)

MESHCHERYAKOV, B.

      Korkino. Mast. ugl. 7 no.1:17 Ja '58.   (MIRA 11:2)
            (Chelyabinsk Basin--Coal mines and mining

MESHCHERYAKOV, B.

They have set an example. Mast. ugl. 8 no.11:21 N '59.
(MIRA 13:2)
(Chelyabinsk Basin--Excavating machinery)

MESHCHERYAKOV, Boris Mikhaylovich

[Korkino, city of coal miners] Korkino, gorod ugol'shchikov.
Cheliabinsk, Cheliabinskoe knizhnoe izd-vo, 1960.   46 p.
(MIRA 15:4)

(Korkino--Description)

ANDREYEV, V.D., kand.fiziko-matematicheskikh nauk; MESHCHERYAKOV, B.M., inzh.;
TYULINA, K.A., inzh.

Spontaneous extinction of a d.c. arc in a vacuum-type cutout. Vest.
elektroprom. 33 no.7:43-45 Jl '62.   (MIRA 15:11)
                              (Electric cutouts)

RESTRICT _ V. . .

REFERENCE 7. . . "The effect of ... ...ation upon ... ...
flood-land meadows," ... ... ,
1940, . /1-40

. : L-5240, 17, ec. 3, ..., . ., .

I-3

USSR/Plant Physiology. Growth and Development

Abs Jour : Ref Zhur - Biol., No 2, 1959, No 9132

Author   : Meshcheryakov D.L.
Inst   : Moscow Timiryazev Agricultural Academy
Title   : Prolonged Preservation of the Germination Capacity of Bean
           Seeds.

Orig Pub : Izv. Timiryazevsk. Sel'sk. Khoz., 1957, No 4, 9132

Abstract : A brief survey of published information on the question of
           preserving the germinating capacity of bean plant seeds. The
           results of the experiments conducted by the author on the
           germination of bean seeds from herbarium samples are reported.
           A list of samples from which the seeds germinated after
           prolonged storage in the herbarium is appended (45 varieties).
           From the plants used in the study, the longest period of
           preserving the germinating ability was found in the seeds of
           Trifolium repens, T. pratense, Vicia tetrasperma (over 50
           years). -- N.P. Chuvashov.

Card   : 1/1

MESHCHERYAKOV, D.P.; MARKOV, Ye.S.

Role of soil and botanical research in planning drainage
measures. Pochvovedenie no.2:131-133 F '57.   (MLRA 10:5)
   (Drainage) (Soil research) (Botanical research)

MESHCHERYAKOV, F. A., Cand Biol Sci -- (diss) "Research into the mechanism of reflex regulation of contraction in the alimentary canal in sheep and dogs." Stavropol', 1959. 24 pp; (Ministry of Agriculture RSFSR, Stavropol' Agricultural Inst); 180 copies; price not given; (KL, 17-60, 147)

MESHCHERYAKOV, F.A.

Role of the spinal cord in the regulation of gastrointestinal
motility. Fiziol.zhur. 45 no.11:1367-1371 N '59.

(MIRA 13:5)

1. From the department of physiology, Agricultural Institute,
Stavropol.
(GASTROINTESTINAL SYSTEM physiol.)
(SPINAL CORD)

MESHCHERYAKOV, F.A.; SUVOROVA, V.A.

New method of making a fistula of the pancreatic duct in cattle. Fiziol.
zhur. 46 no.11:1419-1421 N '60.   (MIRA 13:11)

1. From the Chair of Farm Animal Physiology, Agricultural Institute,
Stavropol.   (PANCREAS)   (FISTULA)

PHASE I BOOK EXPLOITATION   SOV/5437

Meshcheryakov, Fedor Yeliseyevich

Osnovy kholodil'noy tekhniki (Principles of Refrigeration Engineering) Moscow,
    Gostorgizdat, 1960. 375 p. 10,000 copies printed.

Reviewers: A.A. Gogolin, Candidate of Technical Sciences, and M.A. Ocheretyanyy,
    Engineer; Ed.: Ye.M. Krest'yaninova; Tech. Ed.: D.M. Medrish.

PURPOSE: This textbook is intended for students in technological divisions of
    schools of higher education of the Ministry of Commerce of the RSFSR.

COVERAGE: The book deals with the generation and application of artificial re-
    frigeration in various branches of the national economy, including public
    nutrition and commerce. The theoretical fundamentals of refrigeration engineer-
    ing, as well as descriptions of refrigeration machines and equipment and of re-
    frigerated transport, are also included. Special attention is given to automation,
    design, and operation of refrigerating plants. The appendix contains reference
    materials, tables and diagrams, necessary for the computation, design, and opera-
    tion of refrigeration machines and plants. Ch. VI, VII, and XIII were written

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Principles of Refrigeration Engineering   SOV/5437

jointly with V.M. Shavr. The author thanks the Department of Planning and
Equipping Establishments of Public Nutrition of the Institut narodnogo khozyaystva
imeni G.V. Plekhanova (Institute of National Economy imeni G.V. Plekhanov); the
Director of the Vsesoyuznyy nauchno-issledovatel'skiy institut kholodil'noy
promyshlennosti (All-Union Scientific Research Institute of the Refrigeration
Industry), Sh.N. Kobulashvili; staff members of this institute, A.A. Gogolin, S.L.
Gimpelevich, I.F. Dushkin, N.T. Kudryashov, D.N. Prilutskiy, A.D. Tezikov, V.B.
Yakobson; Engineers of the Giprotorg A.V. Shaposhnikov, V.N.Shibanova; and the
chief designer of the Tsentral'noye konstruktorskoye byuro kholodil'nogo mashino-
stroyeniya (Central Design Office of Refrigeration Machine Construction) En-
gineer Ye.S. Gurevich. There are 39 references, all Soviet.

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ASH...A...AROV, N. A.

Ashcheraov, N. A. - "Cl.... ... ... , Issue ..., 19..., p. 21-3.
... ... , Aero...us" ... ...

SO: U-..73..., 21 ..p 53, (Le...is 'Journal 'ork. States, No. 17, 19..).

MESHCHERYAKOV, G.A., inzhener.

Computing the correction for lateral refraction. Sbor.st.po
geod.no.1:49-60 '51.   (MIRA 9:7)
(Refraction, Terrestial) (Triangulation)

MESHCHERYAKOV, G.A.

MESHCHERYAKOV, G.A.: "On the structure of the theory of conformal projections".
Moscow, 1956. Min Higher Education USSR. Moscow Inst of Engineers of
of Geodesy, Aerial Photography, and Cartography. (Dissertations for the
Degree of Candidate of Technical Sciences).

SO: Knizhnaya letopis' No 45, 5 November 1955, Moscow.

SOV/154-58-6-12/22

3(2)
AUTHOR: Meshcheryakov, G. A., Candidate of Technical Sciences

TITLE: The Development of the General Theory of Euler's Projections
            (O postroyenii obshchey teorii proyektsiy Eylera)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i
            aerofotos"yemka, 1958, Nr 6, pp 111-113 (USSR)

ABSTRACT: At the end of March 1956, Professor N. A. Urmayev suggested to
            the author a task on the building up of Euler's projections.
            The author could not solve the set task on the basis of exist-
            ing papers on Euler's projections, and was obliged to create a
            general theory by which he could solve the task. This theory is
            described here in short. The general solution for the case
            where the individual radius is represented on a spherical sur-
            face (this is sufficient for cartographical purposes: the rep-
            resentation of the spheroid in the plane can be easily converted
            to the representation of the sphere in the plane), and the
            method for building up Euler's projections are given. There are
            7 references, 5 of which are Soviet.

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SOV/154-58-6-12/22

The Development of the General Theory of Euler's Projections

ASSOCIATION: Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i
                 kartografii (Novosibirsk Institute for Geodesy, Air Survey and
                 Cartography Engineers)

SUBMITTED: September 10, 1958

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69874

SOV/35-59-9-7575

3. 4000

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1959, Nr 9, pp 108-109
(USSR)

AUTHOR: Meshcheryakov, G.A.

TITLE: On the Question of Solving an Inverse Geodetical Problem

PERIODICAL: Tr. Novosib. in-ta inzh. geod. aerofotos"yemki i kartogr; 1958, Vol 10,
            pp 79 - 82

ABSTRACT: In solving an inverse geodetical problem in the case when two points are
            defined on different and differently oriented reference-ellipsoids, two
            additional problems arise: the determination of the influence of the
            difference in the orientation of the ellipsoids, the allowance for the
            difference of their sizes and oblateness. The most difficult is the cal-
            culation of the difference of their orientation; for this it is necessary
            to know the plumb line deviation at two starting points of the orientation
            of the ellipsoids in the body of the Earth. Considering the orientation
            error as known the author suggests that the corrections of the relation of
            the geodetical coordinates to the surface of any ellipsoid should be cal-
            culated according to F.A. Sludskiy's formulae given by him in "Lectures on
Card 1/2   Geodesy":

69874

On the Question of Solving an Inverse Geodetical Problem   SOV/35-59-9-7575

$a\,\delta\,B = m\,\sin B \cos L + p \sin B \sin L - q \cos B + 2ae \sin B \cos B\,\delta\,e;$

$a \cos B\,\delta\,L = m \sin L - p \cos L;$

$\delta\,h = -\delta\,a - m \cos B \cos L - p \cos B \sin L - q \sin B + ae \sin^2 B\,\delta\,e.$

If the difference of orientations of two ellipsoids ($\delta\,B_0$, $\delta\,L_0$, $\delta\,h_0$) is known, the quantities m, p and q, that is, the coordinates of the center of the second ellipsoid in relation to the first are determined by the following formulae:

$m = -\cos B \cos L\,\delta\,a - \sin^2 B \cos B \sin L\,a\,e\,\delta\,e + \sin B \cos L\,a\,\delta\,B_0 + \cos B$
$\sin L\,a\,\delta\,L - \cos B \cos L\,\delta\,h_0;$

$p = \cos B \sin L\,\delta\,a - \sin^2 B \cos B \sin L\,a\,e\,\delta\,e + \sin B \sin L\,a\,\delta\,B_0 - \cos B \cos L$
$a\,\delta\,L_0 - \cos B \sin L\,\delta\,h_0;$

$q = -\sin B\,\delta\,a + (\sin^3 B + \sin 2 B \cos B)\,a\,\delta\,e - \cos B\,a\,\delta\,B_0 - \sin B\,\delta\,h_0.$

In the article the numerical values of m, p and q are given for the ellipsoids of Bessel' and Krasovskiy. The calculation according to the obtained formulae for the ellipsoids of Bessel' and Krasovskiy with an orientation in Pulkovo yields the following results;

$m \approx -364\,\mu$, $\quad p \approx -277\,\mu$, $\quad q = -664\,\mu$.

G.V. Bagratuni

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89560

S/044/60/000/008/032/035
C111/C222

16.3000
AUTHOR: Meshcheryakov, G.A.

TITLE: A generalization of the notion of the stereographic
             projection

PERIODICAL: Referativnyy zhurnal, Matematika, no.8, 1960, 194,
             abstract no. 9435. Tr. Novosib. in-ta inzh. geod.,aerofotos"-
             yemki i kartogr., 1958, 11, 87-102

TEXT: The author considers a bounded region of a smooth surface and
introduces isothermic coordinates on the surface. The coordinate lines
of the isothermic system are called isothermic circles and isothermic
rays. The author's scope is to find a conformal mapping of the surface
onto the plane so that the isothermic circles are mapped onto the
circles of the plane.
There are 9 references.

[Abstracter's note: The above text is a full translation of the original
Soviet abstract.]

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3(2)
AUTHOR: Meshcheryakov, G. A., Candidate of   SOV/154-59-4-11/17
            Technical Sciences, Docent

TITLE: General Theory of the Euler Projections (Obshchaya teoriya
            proyektsiy Eylera)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aero-
            fotos"yemka, 1959, Nr 4, pp 93-103 (USSR)

ABSTRACT: Euler projections are equal-area projections of the meridians
            and the parallels with an orthogonal grid. In all papers
            (Refs 1,2,3,4) which dealt with these, the questions of
            distortion were not discussed. Owing to the works (Refs 2,3)
            the setting up of a projection with a given distribution of
            distortions along a certain line is greatly complicated. The
            problem is solved by the integration of the Euler-equation
            or by the integration of the equation of N. A. Urmayev which
            is identical with the Euler-equation. These equations (hyper-
            bolic differential equations with partial differential coef-
            ficients of the second order) are quasi-linear and no prac-
            tical patterns for the solution of such equations exist. Here
            a solution of this problem is given by reducing it to equations
            which are easy to integrate. The solution of the problem is

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General Theory of the Euler Projections

given for a spherical area with a standard radius. Here we start from the following statements: x and y are rectangular coordinates of the points of the Euler-projection, φ is the latitude, λ - the longitude, $s = \sin\varphi$, $g = n^2\cos^2\varphi = n^2(1-s^2)$, where $n = n(s,\lambda)$ is the scale along the parallel and β is a certain function of latitude and longitude, i.e. $\beta = \beta(s,\lambda)$. Formulas (1) are written down. If, therefore, β and g are known as the functions of latitude (or s) and longitude, there are two equations (1) in perfect differential quantities. from which x and y can be determined. In this case β and g will satisfy equations (2) which is signified as the basic system. The problem is solved for a sphere with independent variables φ and λ or s and λ; the transition from one group of variables to another is obtained by an exchange with $s = \sin\varphi$. This makes it possible to interpret functions β, g and x, y already on plane s, λ, i.e on a plane of the isocylindric projections which play the same part in the theory of the Euler-projections as the Mercator-projection plays in the theory of the conformal projections. With arbitrary λ-values the poles of the sphere are excluded from the investigation. According to the definition of g it is

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General Theory of the Euler Projections

supposed that always $g > 0$. Function β is the convergence of the meridians in the respective point of the projection. First of all the basic system is investigated. For this purpose the necessary terms are derived from the theory of a system of two differential equations with a partial differential coefficient of the first order of two functions wanted, with two independent variations (Refs 8,9,10). Two practical methods for the setting-up of Euler-projections are shown: 1) On the basis of the solution of equations (c_1) and (c_2) of the characteristics of the basic system in the plane s, λ and 2) on the basis of the solution of the reduced equations (c_1^*) and (c_2^*) in the plane ξ, η (constant parameters which determine the characteristics of the first or second bundle. The characteristics of this auxiliary plane ξ, η are straight lines. It is shown that for some Euler-projections g is determined by differential equations with partial differential coefficients of the first order and in others function g is determined by the solution of the differential equations with partial differential coefficients of the second order. Both kinds are investigated here and the theory and method for

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General Theory of the Euler Projections

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their setting-up is given. At present the author deals with a comparison of the methods given here (Construction of the projection on the basis of the solution of system (2) on the s-λ plane or on the $\xi - \eta$ plane. Investigation of the Euler-projections which are determined by an equation with partial coefficients of the first order, construction of Euler-projections which are determined by equations of the second order) and he deals with the construction of some concrete projections. There are 11 references, 9 of which are Soviet.

ASSOCIATION: Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii (Novosibirsk Institute for Geodetic, Aerial Survey and Cartographic Engineers)

SUBMITTED: September 10, 1958

Card 4/4

3.4000

AUTHOR: Meshcheryakov, G. A., Candidate of Technical Sciences,

TITLE: A New Method of Calculating Oblique Conformal Projections

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aero-
fotos"yemka, 1960, No. 4, pp. 70-91

TEXT: In his paper (Ref. 4), the author had worked out a theory of con-
formal projections. It comprises both normal and oblique projections (and
transversal projections as a special case). It is based on the concept
of stereographic projection of arbitrary surfaces (Ref. 5), and also on
the classical analytical definition for various conformal projections where
the projection is determined by the so-called representation function.
Details of this theory are not given. Only general considerations made in
the papers (Refs. 4, 5) are recalled. In the present paper, the author
writes down the final formulas for the simplest oblique conformal pro-
jections, namely for the stereographic projection of the ellipsoid:

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Conformal Projections

$$x = c\, x_0\, \mu\, \dfrac{\cos(\lambda - \lambda_0)}{P - 2\cos(\lambda - \lambda_0)}$$

$$y = c\, x_0\, \mu\, \dfrac{\sin(\lambda - \lambda_0)}{P - 2\cos(\lambda - \lambda_0)}$$

$$m = c\, x_0\, \dfrac{1}{r\,[P - 2\cos(\lambda - \lambda_0)]}$$

$\qquad\qquad\qquad\qquad\qquad$ (2)

where the constant c is determined from the following formula:

$$c = \dfrac{m_1\, r_1\, [P_1 + 2\cos(\lambda - \lambda_0)]}{x_0}$$

$\qquad\qquad$ (2a)

For the stereographic projection of the sphere:

$$x = c\, \mu\, \dfrac{\cos z_0 \sin z - \sin z_0 \cos z \cos(\lambda - \lambda_0)}{1 - \sin z_0 \sin z - \cos z_0 \cos z \cos(\lambda - \lambda_0)}$$

$$y = c\, \mu\, \dfrac{\cos z \sin(\lambda - \lambda_0)}{1 - \sin z_0 \sin z + \cos z_0 \cos \varphi \cos(\lambda - \lambda_0)}$$

$$m = \dfrac{c}{R[1 - \sin z_0 \sin z + \cos \varphi \cos z \cos(\lambda - \lambda_0)]}$$

$\qquad\qquad$ (3)

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A New Method of Calculating Oblique
Conformal Projections

For the cylindrical projection of the spheroid:

$$c = \frac{m_1 r_1 \sqrt{[P_1 + 2\cos(\lambda_1 - \lambda_0)][P_1 - 2\cos(\lambda_1 - \lambda_0)]}}{z_0}$$

where the constant c is determined from the following formula:

(5a)

For the cylindrical projection of the sphere:

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Conformal Projections

$$x = \frac{c\mu}{2 \bmod} \cdot \lg \frac{1 + \sin \varphi_0 \sin \varphi + \cos \ldots}{1 - \sin \varphi_0 \sin \varphi - \cos \varphi_0 \cos \varphi \cos (\lambda - \lambda_0)}$$

$$y = c \cdot \mu \cdot \mathrm{arctg} \frac{\cos \varphi \sin (\lambda - \lambda_0)}{\cos \varphi_0 \sin \varphi - \sin \varphi_0 \sin \varphi \cos (\lambda - \lambda_0)}$$

$$m = \frac{c}{R\{(1 + \sin \varphi_0 \sin \varphi + \cos \varphi_0 \cos \varphi \cos (\lambda - \lambda_0)\};}$$

$$\times \frac{1}{\{1 - \sin \varphi_0 \sin \varphi - \cos \varphi_0 \cos \varphi \cos (\lambda - \lambda_0)\}}$$

where the constant c is determined
conical projection of the ellipsoid:

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3012/3054

where α and k can be determined from the following formulas:

$$\rho = k\mu \sqrt{\left[\frac{1 - \sin\varphi_0\sin\varphi - \cos\varphi_0\cos\varphi\cos(\lambda-\lambda_0)}{1 + \sin\varphi_0\sin\varphi + \cos\varphi_0\cos\varphi\cos(\lambda-\lambda_0)}\right]^{\frac{\alpha}{2}}}$$

$$\delta = \alpha \cdot \text{arctg}\ \frac{\cos\varphi\sin(\lambda-\lambda_0)}{\cos\varphi_0\sin\varphi - \sin\varphi_0\cos\varphi\cos(\lambda-\lambda_0)}$$

$$m = \frac{\alpha}{R\mu}\ \frac{\rho}{\sqrt{[1 - \sin\varphi_0\sin\varphi - \cos\varphi_0\cos\varphi\cos(\lambda-\lambda_0)]}}$$

(3a)

and for the conical projection of the sphere:

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$$\times \frac{1}{\sqrt{[1 + \sin \varphi_0 \sin \varphi + \cos \varphi_0 \cos \varphi \cos(\lambda - \lambda_0)]}}$$

In these formulas, φ and λ are the latitude and longitude of the point on
the surface of the spheroid or sphere, respectively; q is the isothermal
latitude of the point on the surface of the spheroid or sphere; $\mu = q$,
i.e., $q = \ln U$; σ and $\varkappa$ are variables given in the table; and and
and $Q = U_0/U + U/U_0$ are functions of the latitude, and are calculated with
the aid of the enclosed table; r is the radius of the spheroid parallel;
R is the radius of the terrestrial globe; x and y are the orthogonal
Cartesian coordinates of the projection point; ϱ and δ are the polar co-
ordinates of the projection point; m is the longitudinal scale in the
respective projection point; μ is the general scale of the projection;
c, α, and k are the constants of the projection. In the second part of
the present paper, the author describes an efficient method of calculating

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Conformal Projections

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oblique conformal projections on the basis of the formulas given. In this
method, all simple conformal projections are calculated directly
from the formulas indicating the coordinates of the projection points and
the scale. Special tables should be used to simplify the calculations; the
tables of the products of two trigonometric principal functions (sine and
cosine), e.g. from the paper (Ref. 7), for spherical projections; and the
enclosed auxiliary table for projections of the spheroid. The author gives
the order of calculations for the projections of the spheroid, and of the
sphere, respectively. The enclosed auxiliary table for calculating oblique
conformal projections of the ellipsoid of Krasovskiy is presented in the
annex. There are 2 tables and 14 Soviet references.

ASSOCIATION: Novosibirskiy institut inzhenerov geodezii, aerofotos'yemki i
              kartografii
              (Novosibirsk Institute of Engineers of Geodesy, Aerial
              Photography and Cartography)

SUBMITTED: January 16, 1960

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65250

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B012/B054

Приложение

Вспомогательная таблица для вычисления косых конформных проекций
эллипсоида Красовского

φ	U	$\frac{1}{U}$	z	x
0°	1.000 0000	1.000 0000	0.000 0000	2 000 0000
1	1.017 4885	0.982 8121	0.034 6765	2 009 3446
2	1.035 2884	0.905 9144	0.069 3741	2 012 25
3	1.053 4110	0.949 2971	0.104 1141	2.032 7
4	1.071 8681	0.932 9506	0.138 9175	2.001 8187
5	1.090 6720	0.916 8659	0.173 8061	2.007 5379
6	1.109 8357	0.901 0343	0.208 8015	2.010 8700
7	1.129 3727	0.885 4473	0.243 9255	2.014 8500
8	1.149 2972	0.870 0969	0.279 2003	2.019 3942
9	1.169 6242	0.851 9755	0.314 6487	2.024 5957
10	1.190 3691	0.840 0755	0.350 2936	2.030 4117
11	1.211 5485	0.825 3960	0.386 1586	2.036 9555
12	1.233 1797	0.810 9119	0.422 2678	2.034 0915
13	1.255 2806	0.796 6346	0.458 6469	2.051 9152
14	1.277 8704	0.782 5519	0.495 3185	2.060 4224
15	1.300 9693	0.768 6576	0.532 3117	2.069 6269
16	1.324 5983	0.754 9458	0.569 6525	2.079 5442
17	1.348 7798	0.741 4135	0.607 5950	2.090 1967
18	1.373 5374	0.728 0472	0.645 4802	2.101 5845

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19	1.398 8958	0.714 8495	0.654 0463	2.113 7453
20	1.424 8815	0.70? 8128	0.723 0687	2.1?? 6642
21	1.451 5221	0.??	?.76? ???	2.1? 4?11
22	1.478 8471	?.??? ????	?.802 6447	2.1?? 6?5
23	1.506 8877	0.663 6195	0.843 2682	2.170 5071
24	1.535 6769	0.651 1786	0.884 4983	2.186 ?5?5
25	1.565 2498	0.638 8757	0.926 3742	2.204 ?2?5
26	1.595 6437	0.626 7063	0.968 ?374	2.222 3?00
27	1.626 89?1	0.614 6666	1.012 2315	2.241 56?8
28	1.6?9 0553	0.602 7526	1.056 3027	2.261 8080
29	1.692 1602	0.590 9606	1.101 ?996	2.283 ?.08
30	1.726 2606	0.579 2868	1.146 9738	2.305 5?7?
3?	1.761 4077	0.567 7277	1.193 6800	2.329 1354
3?	1.797 6562	0.556 27?9	1.2?1 3?63	2.35? ???
3?	1.835 0645	0.544 9400	1.290 12??	2.380 00?5
3?	1.873 6953	0.533 7???	1.339 9906	2.407 4000
3?	1.913 6159	0.522 5??	1.391 0449	2.436 1865
3?	1.954 8982	0.511 5356	1.443 ?027	2.466 433?
3?	1.997 6201	0.500 5957	1.497 0244	2.495 2158
3?	2.041 8650	0.489 7483	1.552 1167	2.531 6?3?
3?	2.087 7231	0.478 9907	1.608 7?24	2.566 7?3?
4?	2.135 2916	0.468 3201	1.666 9715	2.603 6?17
41	2.184 6759	0.457 7338	1.726 9?21	2.642 4007
4?	2.235 9898	0.447 2292	1.788 7605	2.683 2?0
43	2.289 3571	0.436 8039	1.852 553?	2.726 16?9
44	2.344 9122	0.4?6 455?	1.918 4570	2.7?1 3674

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45	2.422 8015	0.416 1809	1.986 6205	2.818 9823
46	2.463 1846	0.405 9785	2.057 2061	2.869 1631
47	2.526 2361	0.395 8458	2.130 3903	2.922 6520
48	2.592 1471	0.385 7806	2.206 3466	2.977 9277
49	2.661 1274	0.375 7806	2.285 3468	3.036 9079
50	2.733 4075	0.365 8437	2.367 5638	3.099 2512
51	2.809 2420	0.355 9679	2.453 2740	3.165 2099
52	2.888 9118	0.346 1511	2.542 7607	3.235 0629
53	2.972 7286	0.336 3913	2.636 3373	3.309 1199
54	3.061 0384	0.326 6865	2.734 3518	3.387 7249
55	3.154 2268	0.317 0349	2.837 1919	3.471 2617
56	3.252 7249	0.307 4345	2.945 2903	3.560 1594
57	3.357 0157	0.297 8836	3.059 1321	3.654 8904
58	3.467 6431	0.288 3803	3.179 2628	3.756 0234
59	3.585 2206	0.278 9229	3.306 2977	3.864 1435
60	3.710 4438	0.269 5095	3.440 9343	3.979 9533
61	3.844 1042	0.260 1386	3.583 9656	4.104 2428
62	3.987 1062	0.250 8085	3.736 2978	4.237 9147
63	4.140 4885	0.241 5174	3.898 9711	4.382 0059
64	4.305 4491	0.232 2638	4.073 1853	4.537 7129
65	4.483 3780	0.223 0461	4.260 3319	4.705 4241
66	4.675 8969	0.213 8627	4.462 0341	4.889 7596
67	4.884 9092	0.204 7121	4.680 1971	5.089 6212

Card 10/11

86260

S/154/60/000/004/005/007/XX
B012/B054

68	5.112 6645	0.195 5927	4.917 0718	5.308 2573
69	5.361 8412	0.186 9722	5.175 3381	5.548 3443
70	5.635 6527	0.177 4417	5.458 2109	5.813 0944
71	5.937 9894	0.168 4072	5.769 5822	6.106 3966
72	6.273 6061	0.159 3980	6.114 2081	6.433 0040
73	6.648 3761	0.150 4127	6.497 9634	6.798 7888
74	7.069 6413	0.141 4499	6.928 1915	7.211 0912
75	7.546 7014	0.132 5082	7.414 1931	7.679 2096
76	8.091 5128	0.123 5863	7.967 9265	8.215 0990
77	8.719 7110	0.114 6827	8.605 0283	8.834 3937
78	9.452 1433	0.105 7961	9.346 3472	9.557 9394
79	10.317 2378	0.096 92517	10.220 3126	10.414 1629
80	11.354 7936	0.088 06853	11.266 7251	11.442 8622
81	12.622 2986	0.079 22487	12.543 0737	12.701 5234
82	14.205 9840	0.070 39287	14.135 5912	14.276 3769
83	16.241 3566	0.061 57121	16.179 7854	16.302 9278
84	18.954 2605	0.052 75859	18.901 5019	19.007 0191
85	22.751 2151	0.043 95370	22.707 2614	22.795 1688
86	28.445 2592	0.035 15524	28.410 1040	28.480 4145
87	37.933 4829	0.026 36193	37.907 1210	37.959 8448
88	56.907 1565	0.017 57248	56.889 5841	56.924 7290
89	113.822 6313	0.008 785599	113.813 8457	113.831 4169
90	∞	0.000 000000	∞	∞

Card 11/11

MESHCHERYAKOV, G.A., dotsent, kand.tekhn.nauk

Foundations of a genetic classification of cartographic projections.
Izv. vys. ucheb. zav.; geod. i aerof. no.4:109-118 '61.
(MIRA 15:1)

1. Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki i
kartografii.
(Map projection)

MESHCHERYAKOV, G.A., dotsent, kand.tekhn.nauk

Formulating the problem of the best equal-area projections.
Izv. vys. ucheb. zav.; geod. i aerof. no.5:91-101 '61.
(MIRA 15:3)

1. Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki
i kartografii.
(Map projection)

S/035/62/000/010/082/128
A001/A101

AUTHOR: Meshcheryakov, G. A.

TITLE: On mathematical formalism of modern geodesy

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 10. 1962, 10,
             abstract 10042 ("Tr. Novosib. in-ta inzh. geod., aerofotos"yemki
             i kartogr.", 1961, v. 15, 103 - 115)

TEXT: The author lists divisions of mathematics necessary for various
branches of geodesy. He recommends to use more extensively Chebyshev's poly-
nomials and nomographic methods in geodesy for numerical and graphical proc-
essing methods respectively. Vector and tensor calculi should be used in sphe-
roidal geodesy. Forgotten results of Christoffel are noted, who studied geode-
tic triangles on arbitrary surfaces (E. B. Christoffel "Abh. Ak. Wiss. Berlin",
1868) and those of Forsyth who analyzed trigonometry of ellipsoid of revolution
(A. R. Forsyth. Lectures on the differential geometry of curves and surfaces,
Cambridge, 1920). In mathematical cartography, determination of projections
with properties prescribed in advance is required, on the basis of variation

Card 1/2

On mathematical formalism of modern geodesy

S/0 5/62/000/0 /082/ 3
A001/A101

criteria and Chebyshev's criterion. For compiling maps, it is desirable to
create a theory of transformations in which coordinates of the points of the
plane would be expressed by 2nd degree polynomials on the other plane, and
to design corresponding devices. In this connection the article by M. P. Bor-
dyukov (RZhAstr, 1961, 3G291) is mentioned. In gravimetry and the theory of
the Earth's figure, it is desirable to use ellipsoidal functions (E. W. Hobson.
The theory of spherical and ellipsoidal harmonics. Cambridge, 1931, N. K.
Migal'. "Nauchn. zap. L'vovsk. politekhn. in-t, seriya geodezichesk", 1949,
v. 15, no. 1), and for solution of the inverse problem in the potential the-
ory, non-correct problems of mathematical physics should be solved (Cauchy
problem for elliptical equations). Photogrammetry calls for the use of higher
geometry, vector and tensor calculi. Processing of measurement results calls
for the use of probability theory and mathematical statistics. Matrix and
tensor calculi should be employed. The birth of new disciplines is noted:
selenodesy (RZhAstr, 1960 no. 8, 7408) and practical lunar astronomy (RZhAstr,
1959, no. 1, 121). There are 68 references.

O. Sheynin

[Abstracter's note: Complete translation]

Card 2/2

20346

16.5200
16.6500
AUTHOR: Meshcheryakov, G.A.

TITLE: New Extremum Problems

TEXT: The author considers new extremum problems of the mathematical cartography.

At first the author investigates the following special case. In the region $D : |x| \leq A$, $|y| \leq \mathcal{C}$, where $A = 1 - \mathcal{C}$, $\mathcal{C} > 0$ is arbitrarily small, let be given the hyperbolic quasilinear system

(1) $e^{2v}(1 - x^2)u_x + v_y = 0$, $u_y + e^{2v}(1 - x^2)v_x = re^{2v}$

Problem : Which initial conditions

(2) $u = u(x,0) = \varphi(x)$, $v = v(x,0) = \psi(x)$

must be prescribed in order that the solution $v = v(x,y)$ in a certain neighborhood of the initial curve $y = 0$ deviates least from zero? With the aid of the method of characteristics it is shown that the initial

Card 1/3

New Extremum Problems

conditions

(9) $u - \varphi(x) = 0$, $v - \psi(x) = 0$

must be chosen. If (9) is satisfied then in every point P of the neighbor-hood of $y = 0$, the solution of (1) has the least absolute value among all values which it may obtain in this point for arbitrary other Cauchy initial conditions. The result is not only local but also global since it is valid for the whole region of influence of $[$ A, + A$]$ for (9). Then the author formulates analogous problems for quasilinear elliptic, hyperbolic or parabolic systems

(I) $a_{11}u_x + a_{12}v_x + b_{11}u_y + b_{12}v_y = c_1$, $a_{21}u_x + a_{22}v_x + b_{21}u_y + b_{22}v_y = c_2$

where a_{ij} , b_{ij} , c_i are assumed to be continuous functions of x,y,u,v. Similar problems can be given for equations of second order or still more general equations. A further generalization of the problem is possible by seeking not only additional conditions which must be satisfied by the solution in order that it deviates least from zero, but also by seeking also the curves on which these conditions shall be satisfied. In contrary Card 2/3

20346

S/020/61/136/005/004/032
C111/C222

New Extremum Problems

to the usual theory of differential equations which is denoted as the
theory of the description of physical processes, the investigation of the
given new problems is called the theory of the prediction and control of
physical processes.
The author mentions P.L. Chebyshev and D.A. Grave.
There is 1 figure and 6 Soviet references.

ASSOCIATION: Novosibirskiy institut inzhenerov geodezii, aerofotos'yemki i
               kartografii
               (Novosibirsk Institute of Engineers of Geodesy, Photo-
               grammetry and Cartography)

PRESENTED: September 26, 1960, by S.L. Sobolev, Academician

SUBMITTED: September 24, 1960

Card 3/3

MESHCHERYAKOV, G.A., kand.tekhn.nauk, dotsent

On the best equivalent projections. Izv. vys. ucheb. zav.;geod.
i aerof. no.2:115-125 '62.   (MIRA 15:9)

1. Novosibirskiy institut inzhenerov geodezii, aerofotos"yemki
i kartografii.
              (Map projection)

L 18223-63   BDS
ACCESSION NR: AT3001864   S/2909/62/000/006/0102/0109

AUTHORS: Zagryazkin, N. N.; Meshcheryakov, G. M.

TITLE: Multi-electrode spark plug with preparatory ionization of the gas gap

SOURCE: AN SSSR. Institut dvigateley. Trudy, no. 6, 1962, 102-109

TOPIC TAGS: engine, internal combustion, ignition, spark, spark plug, plug, gap, ionization, advance, fuel-air ratio, electrode, testing equipment

ABSTRACT: The paper discusses the theory and describes experimentation with the spark discharge on internal-combustion engines; it investigates the possibility of obtaining a stable energy transfer delivered with each spark discharge in a given spark plug. More specifically, the paper deals with the stabilization of the ioniza-tion of the spark-plug gap, the fluctuations of which lead to uneven spark dis-charges and, ultimately, to an increase in the lowest fuel-air-ratio limit at which engine operation is feasible. The spark plug employed comprised 3 electrodes (E), namely, a main E and a grounded E, spaced so far apart that a normal spark dis-charge with the given secondary voltage is unlikely, and an auxiliary E placed be-tween the main and the grounded E. A preparatory discharge was brought about between the auxiliary and the grounded E, an intensive ionization was thereby

Card   1/ 2

L 18223-63
ACCESSION NR: AT3001864

produced in the main spark gap, and the principal discharge between the main and
the grounded E took place. Various voltage and gap relationships between the
main spark gap and the auxiliary, ionizing, spark gap were tested and are de-
scribed. Conclusions: 1. The introduction of a supplementary E into the main
spark gap permits effective control of the beginning of the main spark discharge.
2. Preparatory ionization permits a discharge in the spark gap at potential
gradients (PG) of 2.4 kv/cm, significantly smaller than the corresponding PG of
12.3 kv/cm required for discharge through a nonionized gap. Preparatory ioniza-
tion, therefore, permits a considerable enlargement of the spark gap without a
corresponding increase in discharge voltage, that is, without any appreciable
complication of the ignition system. 3. The preparatory discharge affords a satis-
factory stabilization of the discharge voltage of the main spark gap. 4. Prelimi-
nary experimental data obtained thus far substantiate the hypothesis that prepara-
tory ionization affords an intensification of the energy per unit volume of spark
gap. The results of this study are regarded as preliminary. Further investiga-
tions in this field are continuing at the Ob"yedinennaya problemnaya laboratoriya
Instituta dvigateley AN SSSR (Joint Problem Laboratory, Engine Institute, AS,
USSR) and the MADI. Orig. art. has 5 figures   and 1 table.

SUBMITTED: 00   DATE ACQ: Apr 63   ENCL: 00
SUB CODE   IE, PH, PR   NO REF SOV: 008   OTHER: 003
                                             ASSOCIATION: none

Card   2/

ZAGRYAZKIN, N.N.; MESHCHERYAKOV, G.M.

Preionized spark discharge for the ignition of fuel-air
mixture. Avt. prom. 29 no.7:19-21 Jl '63.   (MIRA 16:8)

1. Moskovskiy avtodorozhnyy institut.
                (Motor vehicles—Ignition)

L 24111-65

ACCESSION NR: AP5002677   S/0113/64/000/011/0011/0013

AUTHOR: Meshcheryakov, G. M.

TITLE: The use of preliminarily ionized spark discharges for the ignition of combustible mixtures in internal combustion engines

SOURCE: Avtomobil'naya promyshlennost', no. 11, 1964, 11-13

TOPIC TAGS: internal combustion engine, ionization, spark ignition/ NAMI 086 air cooled engine, MeMZ 966 four cylinder engine, Sputnik automobile, Extra gasoline, A 7.5U spark plug, T8BNIIAP electrode, DSP 8 oil

ABSTRACT: Experimental results on the use of preliminarily ionized spark discharges in internal combustion engines are reported. The tests were conducted on an air-cooled engine, NAMI-086, designed on the basis of the four-cylinder engine MeMZ-966 and intended for use in the automobile "Sputnik." During the experiment the engine was cooled by an independent ventilator system. The constant temperature was maintained by controlling the ventilators. "Extra" gasoline fuel and "DSP-8" brand lubricating oil were used. The standard ignition spark plug was of the type A7.5U (14 x 1.25 mm), and the electrodes were of the type T8BNIIAP. The experimental system for sparking included a tri-electrode spark plug. The speed of the engine was varied from 1600 to 2600 r.p.m. It was found that the intensification of the

Card 1/2

L 24111-65

ACCESSION NR: AP5002677

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sparking due to the use of pre-ionized charge can increase the indicator economy by allowing the use of weaker mixtures. With poorer mixtures and lower loads, the intensification of sparking increased. Use of this system in the NAMI-086 engine increased the indicator efficiency by 3% at full load, and by 6-7% at half load. Orig. art. has: 5 figures.

ASSOCIATION: Moskovskiy avtomobil'no-dorozhnyy institut (Moscow Automobile-Highway Institute)

SUBMITTED: 00   ENCL: 00   SUB CODE: PR, FP

                                 OTHER: 001

NO REF SOV: 004

Card 2/2

L 60330-65   EWT(1)/EPF(c)/EPA( ).2/T/EWA(m)-2   F: -:   IJP(c)
ACCESSION NR: AP5018302   UR/0057/65/035/007/1236/1241
                                                  537.523.4

AUTHOR: Meshcheryakov, G. M.

TITLE: Influence of preliminary ionization of the gas on the nature of the energy redistribution in a spark discharge

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 7, 1965, 1236-1241

TOPIC TAGS: internal combustion engine, ignition, ionization, spark ignition

ABSTRACT: This paper is primarily concerned with the spark ignition of fuel mixtures in internal combustion engines. The author gives a brief theoretical discussion of the thermal efficiency of a spark and concludes that the thermal efficiency can be considerably increased, especially at high pressures, by a preliminary ionization of the gas. The theoretical conclusions are illustrated with previously published experimental data (N.N.Zagryazkin and G.M.Meshcheryakov, Avtomobil'naya promyshlennost', No. 7, 1963; G.M.Meshcheryakov, Ibid. No. 11, 1964; N.N.Zagryazkin and Yu.I.Timoshenko, Tr. inst. dvigateley AN SSSR No. 6, 1962). In these experiments, which included ignition of streams of propane-air mixtures, as well as operation of internal combustion engines, the preliminary ionization was provided by a low energy spark preceding the principal discharge.
Card 1/2

L 60330-65

4

ACCESSION NR: AP5018302

It was found that preliminary ionization increased the instantaneous thermal power of the spark by a factor 1.7 at atmospheric pressure, and it is concluded that preliminary ionization of the gas provides a practical means for improving the performance of internal combustion engines. "The author expresses his gratitude to Academician M.A.Leontovich for his interest in the work." Orig. art. has: 11 formulas, and 1 table.

ASSOCIATION: Moskovskiy avtomobil'no-dorozhnyy institut (Moscow Automobile and Highway Institute)

SUBMITTED: 21Sep64   ENCL: 00   SUB CODE: PR

NO REF SOV: 012   OTHER: 001

Card 2/2

18. 8.200
5. 4500 (B)

68180

SOV/58-59-5-10724

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 5, p 121 (USSR)

AUTHOR: Meshcheryakov, G.N.

TITLE: Effect of Low-Energy Radioactive Radiation on the Surface Properties
           of Metals

PERIODICAL: Nauchn. zap. Odessk. politekhn. in-t, 1957 (1958), Vol 17, pp 235-242

ABSTRACT: The author made use of 1.17 and 1.38 Mev gamma-radiation with an
            intensity of 0.02 roentgen $\cdot$ cm^{-2} $\cdot$ min^{-1} to study the effect of
            irradiation (I) on the pendulum hardness (H) of a number of metals
            under loads of 150 - 1,500 g and a 0.15 mm curvature radius of the
            needle. It was established that the load dependence of H preserves
            its character but that the H numbers grow by a factor of 1.5 after
            30 minutes of exposure if H is measured under a load greater than
            1,000 g. If a jet of oxygen is blown on the sample during irradiation,
            the H numbers are reduced (for Zn the value is only 75 instead of 85).
Card 1/2   At a depth of 0.4 - 0.5 mm under the irradiated surface H is 30 - 40%

68180
SOV/58-59-5-10724

Effect of Low-Energy Radioactive Radiation on the Surface Properties

greater than at the surface. In the case of Pt the hardness increases by 70%. Au does not react to irradiation. The softening effect of surface-active liquids increases as a result of preliminary irradiation. This apparently testifies to the effect of I on adsorption phenomena.

R.I. Garber

Card 2/2

MESHCHERYAKOV, O.I.

25298 MESHCHERYAKOV, O.E. Forochnosti voennoy doktriny Klazevitsa.
Trudy Akad (Voen. Akad. I.. Frunze), JR. 14, 1947. S. 51-7
Sm Takzhc No 25174
CC: Leto is 'Zhurnal Rotry, No. 3 , Moscow, 1948

MESHCHERYAKOV, G.V.

Possibility of using the direct measurements method in studying dislocation processes in the Mirgalimsay Mine. Trudy Inst.gor. dela AN Kazakh.SSR 8:34-39 '61. (MIRA 15:4)
(Mirgalimsay region—Rock pressure) (Mine surveying)

BALAKH, R.V.; MESHCHERYAKOV, G.V.

Using the optical method to determine relative rock displacements.
Trudy Inst. gor. dela AN Kazakh. SSR 11:159-168 '63.
(MIRA 16:8)

(Optical measurements)   (Subsidences)

BALAKH, R.V.; TARAKANOV, I.G.; MESHCHERYAKOV, G.V.

Advantages of filling cavities on the upper levels of the
Mirgalimsay Mine and mining support pillars. Trudy Inst. gor.
dela AN Kazakh.SSR 12:3-12 '63.   (MIRA 17:8)

L 18742-66 EWT(m)/T/EWP(t)   IJP(c)   JD

ACC NR: AP6005146   SOURCE CODE: UR/0126/66/021/001/0140/0143

AUTHOR: Andriyevskiy, R. A.; Zagryazkin, V. N.; Meshcheryakov, G. Ya.

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Study of the diffusion of carbon in β-zirconium

SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 1, 1966, 140-143

TOPIC TAGS: physical diffusion, carbon, zirconium, activation energy, isotope

ABSTRACT: An emulsion of radioactive C was deposited on specimens of β-Zr which
thereupon were annealed at 1100-1600°C for from 0.5 to 5 hr in a vacuum (10^{-4}-10^{-5} mm
Hg), with measurements of temperature by means of Pt-PtRh and W-WRe thermocouples.
After annealing the C films were stripped off the specimens and the activity of the
specimens was measured by means of a scaling unit with an end-window counter. On this
basis the activation entropy ΔS of the diffusion of C in β-Zr is calculated at 4.95
cal/mole-deg. The activation energy Q is found to be linearly dependent on the atomic
radius of the element (Q = 34.2 kcal/mole for C), and the $\Delta S/Q$ ratio is found to be
constant for the diffusion of various interstitial impurity elements (H, O, N) into
one and the same metal; other metals with body-centered cubic lattice, such as α-Fe
and Ta also are governed by these laws. It is characteristic that the radius corres-
ponding to "zero" activation energy is ~0.25 Å, which satisfactorily tallies with the

Card 1/2   UDC: 548.526

L 18742-66

ACC NR: AP6005146

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radius of octahedral pores in β-Zr (r_{oct} = 0.243 Å). Orig. art. has: 3 figures, 1 table.

SUB CODE: 11, 13, 20, 18/SUBM DATE: 25Feb65/ ORIG REF: 005/ OTH REF: 010

Card 2/2 SMJ

MESHCHERYAKOV, I. A.

"Polygenetic Planation Surfaces"

report to be submitted for the ˉntl. Geographical Union, 10th General Assembly
and 19th Intl. Geographical Congress, Stockholm, Sweden, 6-13 August 1960.

SOV/136-59-1-8/24

AUTHORS: Klassen, V.I., Doctor of Technical Sciences, and
            Meshcheryakov, I.F., Engineer.

TITLE: Flotation of Fine Slimes with Air Coming Out of Solution
            (Flotatsiya tonkikh shlamov vozdukhom, vydelyayushchimsya
            iz rastvora)

PERIODICAL: Tsvetnyye Metally, 1959, Nr 1, pp 27-32 (USSR)

ABSTRACT: The authors note some published views (Refs 1-5) on the
            difficulty of flotating mineral crystals less than 10-5
            microns in size and on the effectiveness of gas in the
            process (Refs 8,9,10). One of the authors (Klassen) has
            carried out a theoretical study of the latter aspect
            (Refs 5,8) and from this they now deduce that: gas
            bubbles are formed mainly on mineral particle surfaces,
            the process becoming more intensive the less hydrated the
            surface; the higher the supersaturation of water with
            gas the smaller the initial stable gas-bubble nuclei;
            the lower the surface tension at the liquid-gas boundary
            the smaller the nuclei and the more intensive the
            evolution of air particles. They go on to describe
Card 1/4   experiments which confirmed these deductions and brought

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Flotation of Fine Slimes with Air Coming out of Solution

to light new relations. In the first series of experiments gas separation from various solid-free solutions at various evacuations was studied in a simple apparatus (Fig 1). Fig 2 shows percentage of total originally dissolved gas that comes out of solution as a function of pine oil concentration, mg/litre for different vacua, the interrupted lines showing the corresponding theoretical percentage values. Fig 3 shows the volume of gas liberated, ml per l of solution as a function of vacuum, mm Hg, for various pine oil concentrations and also the initial and theoretical values. Bubble sizes were measured photographically and found to be mainly 0.1 - 0.2 mm in diameter. A further series of experiments were carried out with strong aqueous suspensions of barytes (65 - 70% - 10 microns): Fig 4 shows the total of originally dissolved gas coming out of solution as a function of sodium-cleate concentration, mg/l, and content of solids.

Card 2/4 In further experiments cinematography was used to study bubble-formation on grains of fluorite, quartz and barytes (left, middle and right, respectively, in Fig 5), the wetting angles having been determined previously.

SOV/136-59-1-8/24

Flotation of Fine Slimes with Air Coming Out of Solution

All the experiments having indicated that the vacuum flotation of slimes should be effective, comparative tests of this and ordinary flotation were made. Samples of -10 micron (Table 1) quartz, fluorite, barytes and barytes ore as well as their mixtures were treated in an apparatus (Fig 6) suitable for both methods. The comparative tests were carried out under optimal conditions with careful reproduction in parallel tests of temperature, pulp density, reagent consumption, contact time, flotation time and quantity of final washing water. In general, concentrates richer by 10-20% and recoveries 10-15% higher were obtained by the vacuum method. Fig 7 shows results for barytes ore, where baryta recovery (curve ε) and its concentration in the product (curve β) are shown as functions of consumption of sodium silicate (g/tonne). The differences between the vacuum and ordinary methods were particularly interesting when tests were continued for 30 rather than the normal 10 minutes (Table 2).

Card 3/4

SOV/136-59-1-8/24

Flotation of Fine Slimes with Air Coming Out of Solution

The authors conclude that their results show vacuum flotation to be a flexible and promising method. There are 7 figures, 2 tables and 11 references, 7 of which are Soviet and 4 English.

ASSOCIATION: Institut gornogo dela AN SSSR (Mining Institute, AS USSR)

Card 4/4