PVACHEV, A. L., Doc Phys-Math Sci (diss) -- "The photoelectric properties of

cuprous oxide". Moscow, 1960. 31 pp (Leningrad Polytech Inst im M. I. Kalinin),

200 copies (KL, No 11, 1960, 128)

L 7954-66

ACC NR: AP5025707   SOURCE CODE: UR/0286/65/000/018/0057/0057

AUTHORS: Rvachev, A. L.; Drozdov, V. A.

ORG: none

TITLE: Film photovoltaic cell. Class 21, No. 174731

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 57

TOPIC TAGS: photoelectric cell, semiconducting film, photoconducting film, uv detector

ABSTRACT: This Author Certificate presents a film photovoltaic cell. To produce a high integral sensitivity with the maximum in the ultraviolet region, the p-n junction is made on a base of a combination of cuprous oxide and cadmium sulfide films.

SUB CODE: EC/   SUBM DATE: 13Nov63

Card 1/1   UDC: 621.383.51

RADECHKO, A.Ye.; RVACHEV, A.L.

Ampere-second characteristics of power silicon valves. Izv.
vys. ucheb. zav.; fiz. 8 no.6:145-151 '65.

(MIRA 19:1)

1. Odesskiy politekhnicheskiy institut. Submitted May 18, 1964.

L 60071-65 EEC(b)-2/EWA(h)/EWT(l) Pz-6/Peb IJP(c) AT

ACCESSION NR: AP5017680   UR/0109/65/010/007/1358/1359
                                           621.383.44

AUTHOR: Drozdov, V. A.; Kurmashev, Sh. D.; Rvachev, A. L.

TITLE: CdS-Cu$_2$O photocells

SOURCE: Radiotekhnika i elektronika, v. 10, no. 7, 1965, 1358-1359

TOPIC TAGS: photocell, p n heterojunction, photovoltaic cell

ABSTRACT: A method of preparing p-n heterojunction photocells is described. An alloy of CdS and 0.01% indium is deposited by thermal evaporation in vacuum (10^{-5} mm Hg) on an oxidized (at 180C) copper substrate heated to 300C. The CdS is evaporated in a quartz crucible heated to 950C. The deposited films are 2—5 μ thick and have a resistivity of 0.1 ohm·cm and a sensitive area of 1—4 cm^2. The deposition of an ohmic translucent aluminum electrode on the CdS film completes the photocell. Photocells obtained by this method maintain their stability at temperatures up to 300C and illumination of 50,000 lux. They have low inertia, with a time constant of 10^{-5} sec. Orig. art. has: 2 figures.   [TS]

ASSOCIATION: none

Card 1/2

L 60071-65

ACCESSION NR: AP5017680

SUBMITTED: 07Jul64

NO REF SOV: 000

ENCL: 00

OTHER: 002

SUB CODE: EM, SS

ATD PRESS: 4058

Card 2/2

L 51465-65   EWT(1)/EWA(h)/T   Pz-6/Peb   IJP(c)   AT   UR/0020/65/162/003/0530/0531

ACCESSION NR: AP5014846

AUTHOR: Drozdov, V. A.; Kurmashev, Sh. D.; Ryachev, A. L.

TITLE: Optical method of the formation of the p-n transition

SOURCE: AN SSSR. Doklady, v. 162, no. 3, 1965, 530-531

TOPIC TAGS: p-n transition, rectification factor, heterotransition, photosensitivity

ABSTRACT: Results of an investigation of the p-n transition between cuprous oxide and cadmium sulfide films are presented. An oxidized copper substrate was covered with cadmium sulfide alloyed with indium (0.01%) by means of thermal vaporization in vacuum. The CdS films were 2.5 μ thick and had a specific resistance of 0.1 ohm·cm. The measurements were performed at room temperature. Freshly prepared specimens prior to light treatment had almost ohmic volt-ampere characteristics and displayed a negligible photovoltaic effect. The light formation consisted in periodic illumination of specimens followed by dark intervals. Curves were plotted to represent: 1) variations of the short-circuit current of the Cu_2O-CdS photoelement for several successive light pulses and their corresponding dark intervals; 2) the envelope for the maxima and minima of the short-circuit current of the Cu_2O-CdS photoelement for all light pulses during the light formation; and 3) the volt-ampere

Card 1/2

L 51465-65

ACCESSION NR: AP5014846

characteristics of the Cu_2O-CdS p-n transition. Periodic illumination of the photo-elements with pulses over a period of 30 min raised their sensitivity by hundreds of times. The rectifying properties of the Cu_2O-CdS p-n transition were also improved during this time. This was demonstrated by the change of the volt-ampere characteristics of the specimens during light formation from ohmic to diodic (the rectifying factor increased from 1.5—2 to 10^4). The qualities of the p-n transitions resulting from light formation do not deteriorate with time and the transitions are stable against the influence of outside factors. Orig. art. has 3 figures. [JA]

ASSOCIATION: Odesskiy politekhnicheskiy institut (Odessa Polytechnic Institute)

SUBMITTED: 04Dec64   ENCL: 00   SUB CODE: SS, OP

NO REF SOV: 001   OTHER: 001   ATD PRESS: 4017

Card 2/2

L 36935-66   EWT(m)/EWP(t)/ETI   IJP(c)   JD
ACC NR: AP6023416   SOURCE CODE: UR/0139/66/000/003/0080/0082

AUTHOR: Drozdov, V. A.; Kurmashev, Sh. D.; Rvachev, A. L.

ORG: Odessa Polytechnic Institute (Odesskiy politekhnicheskiy institut)

TITLE: On the short-wave sensitivity of photovoltaic elements on the basis of cadmium sulfide

SOURCE: IVUZ. Fizika, no. 3, 1966, 80-82

TOPIC TAGS: cadmium sulfide, photoelectric cell, photoelectric effect, oxygen, photovoltaic effect, vacuum chamber, high vacuum, radio wave

ABSTRACT: If a high vacuum is maintained during the preparation of a CdS—Cu photovoltaic element, the back-irradiated cell will exhibit a marked sensitivity in the 400—500 µm range, with a supplementary maximum at 420 µm. This short-wave sensitivity will disappear and will be replaced by a shift toward the infrared region if the cell is allowed to stay in contact with atmospheric vapors and gases. The above observations were made with the use of a photovoltaic element obtained by the thermal evaporation of cadmium sulphide onto a copper-clad glass substrate and covered with a semitransparent aluminum film. The whole process was performed in a vacuum chamber at 10^-5 mm Hg. At frontal illumination of the vacuum-prepared cell, through a semitransparent copper film, the element showed a similar sensitivity to 400—500 µm wavelengths. The authors attribute the phenomenon to 1) the damping of short-wave CdS sensitivity caused by water vapor, which increases the rate of surface recombination of carriers, and 2) an increase of long-wave sensitivity caused by the penetration of carriers, and 2) an increase of long-wave sensitivity caused by the pene-

Card 1/2

L 36935-66

ACC NR: AP6023416

tration of oxygen into the CdS lattice. Since the glass substrate and the copper film protect the semiconductor from atmospheric elements better than the aluminum film, no shift of sensitivity was observed when the frontally illuminated vacuum-produced cell was kept in contact with air. Orig. art. has: 3 figures.   [ZL]

SUB CODE: 20/ SUBM DATE: 06Aug64/ ORIG REF: 001/ OTH REF: 011/ ATD PRESS: 5038

Card 2/2

L 35975-66   EWT(m)/EWP(t)/ETI   IJP(c)   JD
ACC NR: AP6016043   (A)   SOURCE CODE: UR/0185/66/011/005/0507/0510

AUTHORS: Den'ha, E. M.--Den'ga, E. M.; Buhriyenko, V. I.--Bugriyenko, V. I.; Rvachov, O. L.--Rvachev, A. L.

ORG: Odessa Polytechnic Institute (Odes'kyy politekhnichnyy instytut)

TITLE: Photoconductivity mechanism of sintered films with a cadmium sulfide base

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 11, no. 5, 1966, 507-510

TOPTIC TAGS: cadmium sulfide, photoelectric property, photoconductivity, photosensitivity, cadmium sulfide film, SEMICONDUCTING FILM

ABSTRACT: Photoelectric properties of sintered films with a cadmium sulfide base have been investigated. It is shown that the photoconductivity of coagulated films is determined by the volume of cadmium sulfide microcrystals. Great photosensitivity of the films is attainable only within a narrow temperature range of sintering, which in some cases reaches 10^{10}. Samples with high stable photosensitivity in the UV spectral zone (350--420 nm) were obtained. Orig. art. has: 2 figures. [NT]

SUB CODE: 11, 20/ SUBM DATE: 13Jul65/ ORIG REF: 003/ OTHER REF: 007

Card 1/1

ARSHAVSKIY, I.E.; MITROFANOV, Yu.M.; RVACHEV, I.F.

Construction of the Krasnaya Presnya Viaduct in Moscow.
Transp.stroi. 10 no.7:17-21 Jl '60.   (MIRA 13:7)

1. Glavnyy inzhener proyekta Giprotransmosta (for Arshavskiy).
2. Nachal'nik tekhnicheskogo otdela Mostotresta (for Mitrofanov).
3. Nachal'nik mostopoyezda No.421 ordena Lenina Mostotresta (for
Rvachev).
        (Moscow--Viaducts)

RVACHEV, I. F.
    VASNIN, M.K., inzhener; RVACHEV, I.F., inzhener.

        New overpass on Yaroslavl Road. Gor.khoz.Mosk. 28 no.6:28-29
        Je '54.   (MLRA 7:7)
            (Moscow--Viaducts) (Viaducts--Moscow)

L 20096-65   EWT(d)/BXT/EED-2/EWP(1)   Po-4/Pc-4/Pg-4/Pk-4   IJP(c)/AFMD(p)/ESD(t)/
ACCESSION NR: AP4049563 RAEM(1)/RAEM(d)/ESD(dp)S/0315/64/000/001/0053/0053 BB/GG

AUTHOR: Antonova, M. K.; Kleynerman, G. I.; Rvachev, L. A.

TITLE: Building up a dictionary for machine translation

SOURCE: Nauchno-tekhnicheskaya informatsiya; no. 1, 1964, 53

TOP TAGS: machine translation, dictionary, glossary

ABSTRACT: The paper describes the steps which went into the preparation of a
glossary for machine translation of technical and mathematical computational
articles from English into Russian. The first step in the work was done by lin-
guists who prepared lists of technical words and symbols with exact Russian-
English equivalents. The second step involved punching cards for a number of
English and Russian texts which were in exact 1-1 correspondence with one another,
and used the standard words and symbols. The third step consisted of correcting
approximations of various kinds, made in the dictionary. "VINITI associates V. M.
Mikhaylov, L. M. Lomonosova, M. A. Rodionova, E. G. Sokolova, V. S. Tkachenko and
Yu. M. Emdina processed the texts."

ASSOCIATION: Laboratoriya Elektromodelirovaniya VINITI AN SSSR (Laboratory for
Electrosimulation, VINITI, AN SSSR)
Card   1/2

L 20096-65
ACCESSION NR: AP4049563

SUBMITTED: 26Nov63   ENCL: 00   SUB CODE: DP

NO REF SOV: 000   OTHER: 000

Card 2/2

MARTYNOV, A.V., inzh.; BRODYANSKIY, V.M., kand. tekhn. nauk, dotsent;
KURGUZOV, V.V., RVACHEV, L.I.

Distribution of static pressure in a cooling vortex pipe.
Izv. vys. ucheb. zav.; energ. 8 no.1:115-118 Ja '65.

(MIRA 18:2)

1. Moskovskiy ordena Lenina energeticheskiy institut. Predstavlena
kafedroy teploenergosnabzheniya promyshlennykh predpriyatiy.

L 37664-65   EWT(1)/EWP(m)/EWA(d)/FCS(k)/EWA(1)   Pd-1
ACCESSION NR: AP5003328   S/0143/65/000/001/0115/0118

AUTHOR: Martynov, A. V. (Engineer); Brodyanskiy, V. M. (Candidate of
technical sciences, Docent); Kurguzov, V. V.; Rvachev, L. I.

TITLE: Distribution of static pressure inside a cooled vortex tube

SOURCE: IVUZ. Energetika, no. 1, 1965, 115-118

TOPIC TAGS: vortex tube, cooled vortex tube

ABSTRACT: The pressure was measured at eight 0.3-mm-diameter holes in a
28-mm vortex tube which had a 5x9-mm nozzle admitting gas helixwise. The
pressures were measured at the wall and in the axis of the stream. A pressure
curve for various $\mu = G_c/G_1$, where G_c and G_1 are the quantities of cold and
initial gas, respectively, is shown. It is found that the lowest pressure (and the
highest gas velocity) occurs at the point of emergence of gas from the nozzle.
The pressure increases as the stream turns, and then droops. The initial

Card 1/2

L 37664-65
ACCESSION NR: AP5003328

pressures were 2.98, 3.95, and 4.95 bars. With constant expansion and diaphragm diameter (18 mm), the pressure was decreasing with μ. Orig. art. has: 3 figures.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power-Engineering Institute)

SUBMITTED: 24Feb64   ENCL: 00   SUB CODE: PR

NO REF SOV: 002   OTHER: 000

Card 2/2

RVACHEV, V.D.

Relief and bottom sediments of the shelf off southwestern Greenland.
Okeanologiia 3 no.6:1046-1055 '63.   (MIRA 17:4)

1. Polyarnyy nauchno-issledovatel'skiy i proyektnyy institut
morskogo rybnogo khozyaystva i okeanografii imeni Knipovicha.

RVACHEV, V.I. (Berdyansk)

Bending of an infinite bar on an elastic semispace. Prikl.mat.
i mekh. 22 no.5:698-700 S-O '58.   (MIRA 11:11)

(Elasticity)

SOV/124-57-5-6026

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 5, p 145 (USSR)

AUTHOR: Rvachev, V. L.

TITLE: Calculation of an Infinite Beam Lying on an Elastic Semi-infinite Space (Raschet beskonechnoy balki, lezhashchey na uprugom poluprostranstve)

PERIODICAL: Tr. 3-go Vses. matem. s"yezda, Vol I. Moscow, AN SSSR, 1956, p 210

ABSTRACT: Bibliographic entry

Card 1/1

RVACHEV, V.L.

Distr: 4F1/4E2b

2009. Rvachev, V. L. Pressure on the elastic half-space under a die having the surface of contact in the form of a strip (in Russian), *Prikl. Mat. Mekh.*, 20, 2, 248-254, Mar.-Apr. 1956.

The integral equation for pressures on the surface of an elastic half-space under the influence of a die can be solved by means of an auxiliary function satisfying Poisson's equation, if the die surface can be written in the form $A(x,y) = f(\lambda,x) \cdot \cos \lambda y$. Using elliptic coordinates and taking the solution of the equation in the form of a product, Mathieu's equations are obtained for both factors. After mentioning some properties of Mathieu's functions, author derives the equation for the auxiliary function, if $f(\lambda,x)$ can be decomposed in a series of Chebyshev's polynomials which is uniformly convergent in the whole interval $-a \leq x \leq a$. Numerical results are given for $f(\lambda,x) = $ const, and, after some considerations on the asymptotic behavior of the auxiliary function, paper is closed by a few remarks on the convergence of the integral expression for pressure. A. Kuhelj, Yugoslavia

Rvachev, V.L.

3

1.4FI

2051. Rvachev, V. L., Calculation pertaining to an infinite bar resting on an elastic semispace (in Russian). *Prikl. Mat. Mekh.* 20, 5, 667-669, Sept.-Oct. 1956.

This is a general solution for the beam of infinite length and width —2d. The deflections of the beam are evaluated from the general properties of the elastic medium without any simplifying restrictions pertaining to the properties of the reaction forces of the elastic medium.

The basic differential equation of the non-restricted problem is $EIw''(y) = g(y) - r(y)$, where $g(y)$ is vertical load per unit length and $r(y)$ the reaction of the elastic medium per unit length. Author assumes a solution in the form of:

$$w(y) = a(\lambda) \cos \lambda y$$
$$g(y) = b(\lambda) \cos \lambda y$$
$$r(y) = c(\lambda) \cos \lambda y$$

where λ is a random number.

1/2

Kochev, V. L.

In previous works he has proved that, in such a case, the deflection $w(x,y,o) = b(\lambda) \cos \lambda y$ and the pressure for this deflection on contact area is $p(x,y) = \gamma(\lambda,x) \cos \lambda y, -a > x > a$; here $\varphi(\lambda,x)$ is a function of P and μ of the elastic medium, x, and a complex expression of coefficient λ involving a and Mathew function, of a and λ.

From this, the values of coefficients $a_i(\lambda)$ can be found, and the deflection is expressed as a load function in a solvable form. If the load function is expressed in Fourier integral form, the solution can be found for any load function and for even and non-even distribution of the reaction of the elastic medium across the width of the beam.

A. L. Nasvytis, USA

RVACHEV, V.L. (Osipenko)

Pressure of a flat-based stamping die on an elastic semispace.
Prikl.mat. i mekh. 21 no.3:444-445 My-Je '57.   (MIRA 10:10)
(Elasticity)

AUTHOR: Rvachev, V.L.   SOV/21-58-2-7/28

TITLE: On the Solution of one Problem in the Theory of Potential
               (K resheniyu odnoy zadachi teorii potentsiala)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 2,
               pp 144 - 146 (USSR)

ABSTRACT: The solution of some problems in mathematical physics is
               reduced to finding in the space xOyz a harmonic function
               $w(x,y,z)$ which possesses a constant value in a given sur-
               face S_0 and vanishes at infinity. The author proposes a
               method for an approximate solution of such a problem. It
               is assumed that $F(x,y,z,C) = 0$ is the equation of the sur-
               face family $\mathcal{S}$ of the level of a function $w = w(x,y,z)$, and
               the surface S_0 belongs to the S-family. The function w,
               defined as an implicit function of x,y and z from the equa-
               tion $F\,[\,x,y,z,C(w)\,] = 0$, is sought from the condition that
               it satisfies the Laplace equation, i.e.:

               $$\frac{\Delta F}{A} - \frac{\partial}{\partial C}\,\ln \rho - \frac{-\,''}{C^2} = 0$$

Card 1/3

On the Solution of one Problem in the Theory of Potential

where

$$A = \frac{1}{F_c'} \left(F_x'^2 + F_y'^2 + F_z'^2 \right)$$

The function φ (C) defined as follows:

$$\varphi(c) = \frac{\Delta F}{A} - \frac{\partial}{\partial C} \ln A$$

does not depend on x,Y and z, and the equation of the above condition has the following general solution:

$$w = B_1 \int_{c_0}^{c} e^{\int_{t_0}^{t} \varphi(t)\, dt}\, dt + B_2$$

where the constants B_1 and B_2 are found from the conditions at infinity and on the surface S_0. There is 1 Soviet reference.

Card 2/3

SOV/21-58-2-7/28

On the Solution of one Problem in the Theory of Potential

ASSOCIATION: Osipenkovskiy pedagogicheskiy institut im. P.D. Osipenko
(Osipenko Pedagogical Institute imeni P.D. Osipenko)

PRESENTED: By Member of the AS UkrSSR, G.N. Savin

SUBMITTED: April 20, 1957

NOTE: Russian title and Russian names of individuals and insti-
              tutions appearing in this article have been used in the
              transliteration

Card 3/3

MOSSAKOVSKIY, V.I. (Dnepropetrovsk); RVACHEV, V.L. (Bedryansk)

Problem on the horizontal hydrodynamic impact of a sphere. Prikl.
mat. i mekh.   22 no.6:847-849   N-D '58.   (MIRA 11:12)
(Hydrodynamics)

SOV/179-59-2-24/40

AUTHOR: Rvachev, V. L. (Berdyansk)

TITLE: The Nature of the Pressure Distribution under a Punch
          Having the Shape of Two Contacting Circles (O kharaktere
          raspredeleniya davleniya pod shtampom, ocherchennym v
          plane dvumya soprikasayushchimisya okruzhnostyami)

PERIODICAL: Izvestiya Akademii nauk SSSR OTN, Mekhanika i mashino-
          stroyeniye, 1959, Nr 2, p 158 (USSR)

ABSTRACT: A brief note, deriving the pressure distribution by
          inversion of the author's previous solution (Ref 1) for
          a punch in the form of a strip. There is 1 figure and
          1 Soviet reference.

SUBMITTED: December 8, 1958.

Card 1/1

RVACHEV, V.L. (Berdyansk)

Pressure on an elastic semispace of a stamping die having a wedge-
shaped surface. Prikl. mat. i mekh. 23 no.1:169-171 Ja-F '59.
(MIRA 12:2)

(Elasticity)

RAKOV, A.F.[Rakov, A.Kh.]; RVACHEV, V.L.[Rvachov, V.L.]

Contact problem in the theory of elasticity for a semispace with a modulus of elasticity which is a power function of the depth. Dop.AN URSR no.3:286-290 '61.   (MIRA 14:3)

1. Berdyanskiy gosudarstvennyy pedagogicheskiy institut. Predsatvleno akademikom AN USSR G.N.Savinym[Savin, H.M.].
               (Elasticity)

BUL G.T. [Bul, N.I.]; RVACHEV, V.L. [Rvachov, V.L.]

Fundamental integral equation of a contact problem in the theory of elasticity for a half-space whose modulus of elasticity is a power function of the depth. Dop. AN URSR no.8:1041-1044 '62.
(MIRA 15:2)

1. Berdyanskiy gosudarstvennyy pedagogicheskiy institut.

S/021/63/000/001/007/012
D251/D308

AUTHORS: Savin, H. M., Academician, and Rvachov, V. L.

TITLE: On the formal and actual conjointness of deformations

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 1,
              1963, 35-39

TEXT: In the statical theory of elasticity solutions are sought,
in general, which satisfy the boundary conditions, the equilibri-
um condition and the conjointness of strains. However, in certain
special cases there is no actual conjointness of strains. Con-
jointness is defined to occur if: a) any part of an elastic body
that is simply connected before deformation will be transformed
into a simply connected region after deformation; b) the outside
and inside defined by any surface will remain outside and inside
respectively after deformation. The mathematical formulation of
the second condition is obtained by considering Boussinesq's so-
lution. The zone of fictitious deformations is considered for the
special cases of a concentrated force applied to the boundary of

Card 1/3

On the formal and ...

S/021/63/000/001/007/012
D251/D308

an elastic half-space, for the contact problem of the pressure of a circular die on an elastic half-space, and for the problem of a tube on which a uniformly distributed pressure acts. The last case is used to show that in Lami's problem fictitious stresses will appear if the external compression is sufficiently great or the walls of the pipe sufficiently thin. In each case the deformations are defined in terms of the Jacobian

$$I(x,y,z) = \begin{vmatrix} 1 + \dfrac{\partial u}{\partial x} & \dfrac{\partial u}{\partial y} & \dfrac{\partial u}{\partial z} \\[2ex] \dfrac{\partial v}{\partial x} & 1 + \dfrac{\partial v}{\partial y} & \dfrac{\partial v}{\partial z} \\[2ex] \dfrac{\partial w}{\partial x} & \dfrac{\partial w}{\partial y} & 1 + \dfrac{\partial w}{\partial z} \end{vmatrix} \qquad (2)$$

Card 2/3

On the formal and ...

where a point with coordinates (x,y,z) is transformed into the point $(x + u, y + v, z + w)$. The region of conjointness is given by $I(x,y,z) > 0$, and the surface of separation of the zone of fictitious strains is given by $I(x,y,z) = 0$. There is 1 figure.

ASSOCIATIONS: Instytut mekhaniky AN URSR (Institute of Mechanics of the AS UkrSSR)(Savin);Berdyans'kyy pedahohichnyy instytut (Berdyan'sk Pedagogic Institute)(Rvachov)

SUBMITTED: October 4, 1962

Card 3/3

S/021/63/000/003/013/022
D405/D301

AUTHORS: Savin, H, M., Memeber of the Academy of Sciences
              UkrRSR, and Rvachov, V. L.

TITLE: Disturbance of compatibility of deformation in contact
              problems of elasticity theory

PERIODICAL: Akademiya nauk UkrRSR. Dopovidi. no. 3, 1963, 354-357

TEXT: The disturbance of the compatibility of deformations was
studied in problems involving the contact between a die and an
elastic half-plane (half-space respectively). The disturbance of
the compatibility of deformations in contact problems is accompa-
nied by the interpenetration of the points of the elastic body and
of the die. Such an effect of course has no physical sense. The
plane problem is considered first. From the formulas for the nor-
mal and tangential stresses $P(x)$ and $T(x)$ it is evident that on
approaching the ends of the contact region these stresses change
sign infinitely many times. It is shown that this effect is rela-
ted to the appearance of zones of fictitious deformation. After

Card 1/3

Disturbance of compatibility ...

S/021/63/000/003/013/022
D405/D301

transformations, the formula expressing the condition of compati-
bility of deformations assumes the form

$$1 - \frac{P_0 \nu}{\pi \mu \sqrt{\tau} \sqrt{1^2 - x^2}} \cos \left(\beta \ln \frac{1 + x}{1 - x} \right) > 0 \qquad (9)$$

It can be readily seen that for $x \rightarrow \pm 1$ this condition is violated
infinitely many times; hence the compatibility of deformation is
violated at infinitely many points of the contact region. Further,
the contact problem involving a circular die with a plane base and
an elastic half-space is considered. In this case, the compatibi-
lity condition is violated if

Card 2/3

S/021/63/000/003/013/022
D405/D301

Disturbance of compatibility ...

$$P > \frac{2a\sigma hE}{(1 - \nu^2)\arccos \frac{a^2 - h^2}{a^2 + h^2} - \frac{(1 + \nu)ah}{a^2 + h^2}} \tag{20}$$

i.e. if the force P under the die is sufficiently large (a denotes the radius of the die and h is a positive number).

ASSOCIATIONS: Institut mekhaniky AN URSR (Institute of Mechanics of the AS UkrRSR); Berdyans'kyy pedahohichnyy insti- tut (Berdyans'k Pedagogical Institute)

SUBMITTED: November 5, 1962

Card 3/3

RVACHEV, V.L.

Analytic description of certain geometrical objects. Dokl.
AN SSSR 153 no.4:765-767 D '63.   (MIRA 17:1)

1. Predstavleno akademikam A.A. Dorodnitsynym.

SAVIN, G.N. [Savin, H.M.]; RVACHEV, V.L. [Rvachev, V.L.]

Displacements under the action of a concentrated force. Prykl.
mekh. 10 no.2:222-225 '64   (MIRA 17:7)

1. Institut mekhaniki AN UkrSSR i Khar'kovskiy institut gornogo
mashinostroyeniya, avtomatiki i vychislitel'noy tekhniki.

MOSSAKOVSKIY, V.I. [Mossakovs'kyi, V.I.]; ONISHCHENKO, V.I. [Onyshchenko,
V.I.]; RVACHEV, V.L. [Rvachov, V.L.]

Applying Green function to the solution of the mixed problem
for a semispace in the theory of elasticity. Prykl. mekh. 10
no.3:291-296 '64.   (MIRA 17:6)

1. Dnepropetrovskiy gosudarstvennyy universitet i Khar'kovskiy
institit gornogo mashinostroyeniya, avtomatiki i vychislitel'noy
tekhniki.

RVACHEV, V.L. [Rvachov, V.L.]; YUSHCHENKO, I.L. [IUshchenko, K.L.]

Plotting of coordinate families connected with a problem in
a natural way. Dop. AN URSR no.2:163-167 '65.

(MIRA 18:2)

1. Institut kibernetiki AN UkrSSR i Khar'kovskiy institut
gornogo mashinostroyeniya, avtomatiki i vychislitel'noy
tekhniki.

L   15578-66   EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)
ACC NR: AP5019459   (A)   SOURCE CODE: UR/0378/65/000/003/0077/0083

AUTHOR: Rvachev, V. L.; Stoyan, Yu. G.   51

ORG: none   B

TITLE: Algorithm for the optimum layout of a pattern with round cutouts under limi-
tations on the distance between pairs of cutouts

SOURCE: Kibernetika, no. 3, 1965, 77-83

TOPIC TAGS: metal stamping, computer programming, computer application

ABSTRACT: An algorithm and specialized digital computer program are developed for
the problem of locating round holes of given arbitrary radii on a rectangular blank
where there are limitations on the distance between pairs of holes and between the
holes and the perimeter of the blank. The general problem and two examples of spe-
cific computer solutions are discussed: (1) optimum location of a group of holes
of different diameters in the smallest possible rectangular blank when no spacing
is required between holes or between them and the perimeter; and (2) the same prob-
lem with the holes separated by given distances from each other and the perimeter
of the blank. Orig. art. has: 4 figures, 28 formulas.
SUB CODE: 09,13/   SUBM DATE: 23Nov64/   ORIG REF: 005/   OTH REF: 000

Card 1/1 mc   UDC: 519.8

L 5052-66   ENT(d)/T   IJP(c)

ACCESSION NR: AP5024541   UR/0378/65/000/004/0070/0075
                                           519.8

AUTHOR: Rvachev, V. L.; Stoyan, Yu. G.

TITLE: Optimum distribution of circular patterns

SOURCE: Kibernetika, no. 4, 1965, 70-75

TOPIC TAGS: cybernetics, computer program, probability

ABSTRACT: In an earlier paper (Kibernetika, no. 3, 1965) the authors investigated the problem concerning the optimum distribution of circular patterns of arbitrary radii for given minimum permissible distances between each of the pairs. A solution with a minimum area of the underlying rectangle is sought. In the present problem n circular patterns are given with arbitrary radii and a strip of material (of width 1) with m circular openings with arbitrary radii. The n patterns should be distributed across the strip of material in such a way that the length h of the strip is a minimum. The paper outlines the detailed formulation of the problem leading to a computer program. The method of solution, the procedure for the determination of the global maximum, and the generator of random numbers have all been described in the earlier paper. The authors conclude

Card 1/2

L 5052-66
ACCESSION NR: AP5024341   O

with the presentation of four examples worked out on a digital computer yielding
(in the intermediate stages of the calculation) up to 67 local maxima. Orig.
art. has: 4 formulas, 6 figures, and 4 tables.

ASSOCIATION: none

SUBMITTED: 01Feb65   ENCL: 00   SUB CODE: DP

NO REF SOV: 004   OTHER: 000

Card 2/2

L 14650-66   EWT(d)   IJP(c)
ACC NR: AP6004253   SOURCE CODE: UR/0378/65/000/006/0085/0094

AUTHOR: Rvachev, V. L.; Stoyan, Yu. G.   *17*

ORG: none   *B*

TITLE: Recognition of nonintersection of special forms of geometric figures

SOURCE: Kibernetika, no. 6, 1965, 85-94

TOPIC TAGS: geometry, geometric form

ABSTRACT: The author considers/necessary and sufficient conditions for noninter-
section of various types of geometric patterns. Special cases are considered for
the absence of common points in various combinations of line segments, circles and
arcs of circles. The following theorems are proposed and proved: 1. a given arc
and circle do not intersect when and only when the circle of which the given arc is
a part and the given circle do not intersect, or in the case where they do inter-
sect the points of intersection are removed from the midpoint of the given arc by a
distance greater than the length of the chord which subtends half the given arc;
2. two arcs do not intersect when and only when the circles of which they are part

                                                              UDC: 519.8
Card 1/2

L 14650-66
ACC NR: AP6004253

do not intersect, or if they do intersect when the points of intersection are remov-
ed from at least one of the midpoints of the given arc by distances greater than or
equal to the length of the corresponding chords which subtend half the given arc;
3. a given arc and a line segment do not intersect when and only when the straight
line of which the segment is a part and the circle of which the arc is a part do not
intersect, or if they do intersect when the distances from the points of intersec-
tion to the midpoint of the given arc are greater than the length of the chord which
subtends half the given arc, or when the points of intersection lie outside the
given arc. Examples are given illustrating application of these theorems. Orig.
art. has: 7 figures, 2 tables, 51 formulas.

SUB CODE: 12/   SUBM DATE: 22Mar65/   ORIG REF: 005/   OTH REF: 000

Card 2/2

KOVALENKO, S.P.; RVACHEV, V.L. [Rvachov, V.L.]

Some properties of determinants. Dop. AN URSR no.11:1414-1418
'65.   (MIRA 18:12)

1. Khar'kovskiy institut gornogo mashinostroyeniya, avtomatiki
i vychislitel'noy tekhniki.

L 14590-66   EWT(d)   IJP(c)

ACC NR: AP5028767   SOURCE CODE: UR/0376/65/001/011/1537/1543

AUTHORS: Rvachev, V. L.; Shklyarov, L. I.

ORG: Khar'kov Institute for Mining Machinery Construction, Automation, and Computer Engineering (Khar'kovskiy institut gornogo mashinostroyeniya, avtomatiki i vychislitel'noy tekhniki)

TITLE: Use of the Bubnov-Galerkin method to solve boundary value problems for regions of complex form

SOURCE: Differentsial'nyye uravneniya, v. 1, no. 11, 1965, 1537-1543

TOPIC TAGS: approximation calculation, differential equation, elliptic differential equation

ABSTRACT: For purposes of obtaining approximate solutions to certain elliptic partial differential equations, the authors consider the problem of finding $\omega(x,y)$, continuous, with continuous partial derivatives in the region whose boundary is composed of smooth arcs with equations

$$\varphi_1(x, y) = 0, \ \varphi_2(x, y) = 0, \ldots, \varphi_n(x, y) = 0,$$

where φ_i have continuous and bounded partial derivatives, with $\omega(x,y) > 0$ inside and $\omega(x,y) = 0$ on the boundary. This is solved by using the technique of R-functions -- the approximate solution of the differential equation being of the form

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L 14590-66

ACC NR: AP5028767

$$u^*(x, y) = \omega(x, y) \sum_{i=1}^{n} c_i \psi_i(x, y), \qquad (1)$$

where ψ_1 ... $\psi_2 = x$; $\psi_3 = y$; $\psi_4 = x^2$; ... Orig. art. has: 3 figures and 5 formulas.

SUB CODE: 12/ SUBM DATE: 27May65/ SOV REF: 012

Fw

Card 2/2

L 27571-66   EWT(d)/EWP(1)   IJP(c)

ACC NR: AP6018379

SOURCE CODE: UR/0021/66/000/001/0003/0005

AUTHOR: Rvachov, V. L.

ORG: Khar'kov Institute of Mining Machine Building, Automation and Computer Engineering (Kharkivs'kyy instytut hirnychogo mashynobuduvannya, avtomatyky ta obchyslyu- val'noyi tekhniky)

TITLE: Algorithmic completeness of the means of analytic geometry

SOURCE: AN UkrSSR. Dopovidi, no. 1, 1966, 3-5

TOPIC TAGS: analytic geometry, algorithm, function

ABSTRACT: The author introduces the concept of an algorithmically complete (from the viewpoint of the construction of drawing equations) system of functions. It is shown in particular, that adding the R-conjunction, $x \wedge_\alpha y = 1/2(x+y - \sqrt{x^2 + y^2 - 2\alpha xy})$, $(-1 < \alpha \leqslant 1)$, to the operations of addition and multiplication used in analytical geometry leads to the formation of an algorithmically complete system. This paper was presented by Academician V. M. Glushkov. Orig. art. has: 5 formulas. [JPRS]

SUB CODE: 12 / SUBM DATE: 20Jan65 / ORIG REF: 002

Card 1/1

L 07488-67

ACC NR: AP6035587

/6

/3

AUTHOR: Rvachev, V. L.; Stoyan, Yu. G.

ORG: none

TITLE: Algorithms for constructing inequalities which are satisfied by the allocation parameters of intersecting bodies

TOPIC TAGS: ~~cybernetics, bodies intersection~~, intersection condition, $algorithm$, $coordinate\ system$

ABSTRACT: The problem of the best (in a certain sense) distribution of bodies in a given domain (for example, the problem of miniaturization of electronic equipment) is reduced to establishing algorithms by which the condition for intersection of bodies can be automatically established. The six numbers x, y, z, ψ, ϕ, α (ψ, ϕ, α are Euler angles) which determine the location of the relative coordinate system X' Y' Z' with respect to a fixed coordinate system XYZ are called the parameters of the allocation of the body. The general form of the equation of the allocation of the body and the general conditions for the intersection of two bodies are written. It is pointed out that the application of the derived intersection conditions to particular cases is associated with certain difficulties in connection with calculating the maximum of a certain function. The author describes algorithms for deriving the intersecting conditions for spheres, polyhedrons, right circular

Card   1/2

L 07488-67

ACC NR: AP6035587

cylinders, the right frustum of a cone, and their combinations. For these particular cases, it is shown that the conditions of intersection of two bodies S_i and S_j can be represented by an inequality of the form $f_{ij} \geq 0$, where f_{ij} is an elementary function of allocation parameters of these bodies.   Orig. art. has: 66 formulas and 7 figures.

SUB CODE: 12/ SUBM DATE: 21Jun65/ ORIG REF: 006/ ATD PRESS: 5104

Card   2/2

RVACHEV, V.I.; KALENICHENKO, N.Yu.

Theory and application of an integral photometer for studying
objects with arbitrary scattering curves. Opt. i spektr. 18
no.3:486-494 Mr '65.   (MIRA 18:5)

L 31498-66   EWT(1)   IJP(c)   WW/GG

ACC NR: AP6013027   SOURCE CODE: UR/0051/66/020/004/0701/0708

AUTHOR: Polyanskiy, V. K.; Rvachev, V. P.
                                                                              $5\ 3$
ORG: none
                                                                              B
TITLE: Concerning the reflection of light by rough surfaces

SOURCE: Optika i spektroskopiya, v. 20, no. 4, 1966, 701-708

TOPIC TAGS: light reflection, surface roughness, light diffraction, geometric optics, light scattering, light polarization, optic brightness

ABSTRACT:

ABSTRACT: The authors point out in the introduction that the two standard methods used to investigate the interaction between light and a rough surface, the diffraction method and the geometric-optics method, wherein the rough surface is assumed to be a random aggregate of microscopic areas, each reflecting separately, have actually very little in common. The purpose of the present investigation was to investigate the scattering properties of rough surfaces in polarized light and explain some of the observed phenomena on the basis of both the geometric-optics and diffraction concepts. The experimental setup used for this purpose (Fig. 1) is based essentially on a brightness-measuring apparatus described by the authors earlier (Tr. GOI v. 24, No. 143, 3, 1955). The measurements were made on a plate of black glass with refractive index 1.515, one surface of which was polished and
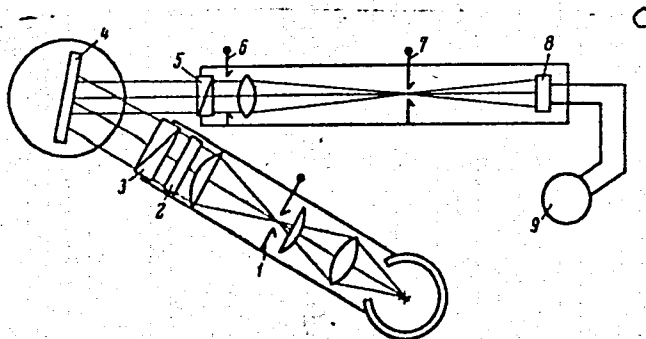
Card 1/2   UDC: 535.361.2

L 31498-66
ACC NR: AP6013027

Fig. 1. Optical diagram of
setup. 1 - Aperture diaphragm
of illuminator, 2 - inter-
ference light filter (550 nm),
3 - polarizer, 4 - object, 5 -
analyzer, 6 - field diaphragm,
7 - aperture diaphragm of
receiver, 8 - photomultiplier,
9 - reading device.

the other one was roughened mechanically. The degree of polarization and depolari-
zation of the light beam was determined for different angles and compared with the
calculations based on both approaches. The results show that the zero-order dif-
fraction approximation is more detailed than the geometric-optics approximation,
and provides a satisfactory explanation for the depolarization of the light and
for the dependence of the polarization on the scattering conditions. It also ex-
plains the shift of the maximum of the scattering indicatrix toward the larger
observation angles. Orig. art. has: 5 figures and 3 formulas.

Card 2/2 mc SUB CODE: 20/   SUBM DATE: 26Feb65/   ORIG REF: 013

RYABUKH, V.P. [Rvaubur, V.P.]; CHEREDNICHENKO, O.S. [Humints'kyt, O.S.]

Scattering of natural and polarized radiation by photometric
standard materials and leaves of plants. Ukr. fiz. zhur. 10
no.1:27-34. Ja '65.   (MIRA 18:4)

1. Chernovitskiy gosudarstvennyy universitet.

RVACHEV, V.P.; POLYANSKIY, V.K.

Penetration of polarized light through a light-scattering
surface. Opt. i spektr. 18 no.6:1057-1064 Je '65.
(MIRA 18:12)

L 40895-66   EWT(m)/EWP(t)/ETI   IJP(c)   JD

ACC NR: AP6019660   SOURCE CODE: UR/0368/66/004/006/0568/0571

AUTHOR: Rvachev, V. P.; Sakhnovskiy, M. Yu.

ORG: none

TITLE: Optical properties of magnesium oxide in ultraviolet light

SOURCE: Zhurnal prikladnoy spektroskopii, v. 4, no. 6, 1966, 568-571

TOPIC TAGS: magnesium oxide, optic property, UV light, UV optic material, light reflection coefficient

ABSTRACT: The value of the coefficient of diffuse reflection for a freshly sprayed layer of MgO about 3 mm thick was studied by means of an integral photometer. The optical properties of MgO were measured at 220—1000 mμ, using for this purpose the "two-parametric" theory of the transmission of radiation through a light-scattering medium, and the problem of the accuracy of the measurements is examined. Employing this theory an expression is derived for the absorption coefficient of MgO particles. The error in determining the coefficient of diffuse reflection was about 0.5% for the ultraviolet region and about 0.3% for the visible and infrared regions. A calculation of errors involved when determining the absorption index yielded a total error in this determination of about 25% for the visible and near-infrared

Card 1/2   UDC: 535.34

L 40895-66

ACC NR: AP6019660

and about 15% for the ultraviolet regions. It was concluded that the "two-parametric" theory of M. M. Gurevich (Trudy GOI, Vol. 6, No. 57, 1931) and A. A. Gershun (Trudy GOI, Vol. 11, No. 90, 1936, p. 43) is fully competent. Orig. art. has: 3 figures and 12 formulas.

SUB CODE: 11,20/ SUBM DATE: 25Mar65/ ORIG REF: 011/ OTH REF: 002

Card   2/2 mLP

L 32624-66   EWT(1)   IJP(c)   WW/GG

ACC NR: AP6015593   SOURCE CODE: UR/0368/66/004/005/0415/0421

AUTHOR: Rvachev, V. P.; Guminetskiy, S. G.

ORG: none

TITLE: On the structure of light beams reflected by vegetation leaves

SOURCE: Zhurnal prikladnoy spektroskopii, v. 4, no. 5, 1966, 415-421

TOPIC TAGS: light reflection, light scattering, light transmission, light polarization, plant ecology

ABSTRACT: In view of the fact that earlier similar studies were restricted to reflection, transmission, and absorption of the leaf as a whole, and to spatial distribution of the light scattered by the leaf, the authors have studied the structure of the light flux produced by interaction of plane-polarized light with the leaf material. The use of polarized light made it possible to determine quantitatively the magnitude of each of the spectral components. The experiment was carried out with a goniospectrophotometer described elsewhere (UFZh v. 10, No. 1, 87, 1965), equipped for polarization measurements. The spectral region investigated was 400 - 1100 nm. Both dull-surface and glossy leaves were investigated (Artocarpus integrifolia and Ficus australis, respectively). The experimental procedure is briefly described. The experiment made it possible to separate and measure quantitatively the polarized part of the surface component, the depolarized part of the surface component, the polarized part of the inner component, and the depolarized part of the inner component so that

Card 1/2   UDC: 543.42

L 32624-66

ACC NR: AP6015593 O

an expression for the flux reflected from the leaf in the form of four partial com-
ponents could be derived. A study of the brightness distribution of these components
as a function of the wavelength shows a strong wavelength dependence in the case of
glossy leaves, a lesser dependence in the case of dull leaves, and no dependence what-
ever in the case of fuzzy leaves (Ficus carica, Solanum tuberosum, Strobilanthes
glomeratus, and others). A table is presented showing the relation between the
spectral coefficients of reflection for normal incidence for three types of leaves
in the range from 400 to 960 nm. Orig. art. has: 4 figures, 11 formulas, and 3
tables.

SUB CODE:20,06/   SUBM DATE: 11Apr65/   ORIG REF: 013

·Card 2/2 $\mathcal{90}$

L 38791-66   EWP(m)/EWT(1)   W

ACC NR: AP6021359 (N)   SOURCE CODE: UR/0207/66/000/003/0121/0123

AUTHOR: Yevdokimov, S. Ye. (Khar'kov); Rvachev, V. L. (Khar'kov)

ORG: none

TITLE: Coefficient of apparent mass during the horizontal hydrodynamic impact of a floating sphere

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1966, 121-123

TOPIC TAGS: mathematic analysis, mathematic transformation, hydrodynamics, incompressible fluid, ideal fluid

ABSTRACT: The three-dimensional problem of a horizontal hydrodynamic impact of a floating body, which was investigated by E. L. Blokh, V. I. Mossakovskiy, and V. L. Rvachev for the special case of a body half immersed in an incompressible fluid, is analyzed for the case of an arbitrary immersion depth under the assumption that the fluid does not tear away from the wetted surface. The motion of an ideal fluid filling a half-space $z \geq 0$, after a sudden impact on a floating sphere having a unit radius of $x^2 + y^2 + (z - h)^2 = 1$, is uniquely defined by the velocity potential φ^* which is a harmonic function associated with the impulse pressure p_t, and the fluid's density ρ by the relation

Card 1/2

L 18994-66

ACC NR: AP6021359

$p_t = -\rho\varphi^*$. Introducing toroidal coordinates for the condition $|h| < 1$ and bispherical coordinates for the condition $h > 1$, and modifying integral transforms into a generalized integral using associated Legendre functions, solutions are derived for the velocity potentials on the wetted spherical surface. Equations are given for the coefficient of the apparent mass of the sphere dx acting along the x axis, for $\lambda_x(h)$ in the case of partial immersion, and for $\lambda_x(h)$ in the case of $h > 1$. In an unlimited fluid, $\lambda_x(\infty) = 1/2$. Results of λ_x calculations (error < 2%) are shown. Orig. art. has: 11 formulas.   [GE]

SUB CODE:2012/ SUBM DATE: 08Jul65/ ORIG REF: 005/ OTH REF: 001
ATD PRESS:5950

Card 2/2

PVACHEV, V.P.; GUMINETSKIY, S.G.; SAKHNOVSKIY, M.Yu.

Optical parameters of plant leaves in the spectral interval of
205-1000 mmk. Biofizika 10 no.4:658-664 '65.   (MIRA 18:8)

1. Chernovitskiy gosudarstvennyy universitet, Chernovtsy.

POLYANSKIY, V.K. [Polians'kyi, V.K.]; RVACHEV, V.P. [Rvachov, V.P.];
     KOVAL'SKIY, L.V. [Koval's'kyi, L.V.]

Method of formation of light beams with given energy distribution in
a given spectral range. Ukr. fiz. zhur. 10 no.6:682-683 Je '65.
                                                        (MIRA 18:7)

1. Chernovitskiy gosudarstvennyy universitet.

RVACHEV, V.R.; PALAMARYUK, V.Ye.

Calculation of the quantum yield of photosynthesis. Fiziol. rast.
12 no.2:371-374 Mr-Ap '65.   (MIRA 18:6)

1. Chernovitskiy, gosudarstvennyy universitet.

L 2820-66   EWT(1)/1 PF(c)   IJP(c)   WW/GG

ACCESSION NR: AP5016180   UR/0051/65/018/006/1057/1064
                                             535.51:535.361

AUTHORS: Rvachev, V. P; Polyanskiy, V. K.

TITLE: On the passage of polarized light through a light-scattering surface

SOURCE: Optika i spektroskopiya, v. 18, no. 6, 1965, 1057-1064

TOPIC TAGS: light transmission, light polarization, light scattering, light scattering glass

ABSTRACT: Inasmuch as little attention has been paid in the past to the scattering of light by rough (matte) surfaces, the authors analyze this phenomenon and show that when plane-polarized light passes through a matte interface, the plane of polarization is rotated by an amount that depends on the angle of observation. This circumstance, as well as an account of the polarization phenomena occurring inside the layer, make it possible to resolve the transmitted light flux into three components: 1) polarized, but changing its state of

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L 2820-66

ACCESSION NR: AP5016180

polarization as a result of single interaction with the matte inter-
face;   2) polarized by changing the state of polarization as a result
of double reflection within the layer; 3) depolarized. The inten-
sities of the different components are estimated and the directions
in which they appear are indicated. Apparatus for direct measurement
of the brightness, making it possible to obtain three equations for
determining the three components, is described. The apparatus is
shown in Fig. 1 of the Enclosure. It was used to measure the scat-
tering of a monochromatic beam (λ = 555 nm) of polarized light by
ground glass. The experimental results are in satisfactory agreement
with the theory at angles up to 25°.   The depolarized component was
found to be too small to be determined reliably. At angles larger
than 25° the calculated plane of polarization is larger than the
measured one and the discrepancy increased with increasing angle. An
explanation for the discrepancy is offered. Orig. art. has: 7 fig-
ures and 12 formulas.

ASSOCIATION: None

Card 2/4

L 2820-66

ACCESSION NR: AP5016180

SUBMITTED: 17Apr64   ENCLOSURE: 01   SUB CODE: OP

NR REF SOV: 005   OTHER: 000

Card 3/4

L 2820-66

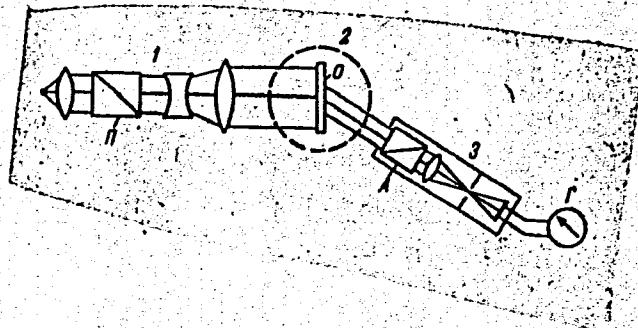ACCESSION NR: AP5016180   ENCLOSURE: 01

Fig. 1. Diagram of installation for the measurement of the brightness of polarized light in a transmitted beam.

1 - Illuminator, 2 - goniometer with tested sample, 3 - measuring device, П - polarizer, O - investigated object, A - analyzer, Г- galvanometer.

Card 4/4

L 43869-65   EWT(1)/EEC(k)-2   IJP(c)

ACCESSION NR: AP5004438

8/0051/65/018/003/0486/0494

AUTHOR: Rvachev, V. P.; Sakhnovskiy, M. Yu.

TITLE: Theory and application of an integral photometer for the investigation of objects with arbitrary scattering indicatrices

SOURCE: Optika i spektroskopiya, v. 18, no. 3, 1965, 486-494

TOPIC TAGS: photometry, reflection, coefficient, transmission coefficient, absolute photometry, spherical photometer, integral photometer

ABSTRACT: In view of the discrepancies between absolute values of the reflection coefficient obtained with spherical photometers by various investigators, the authors, claiming that the reason for the discrepancies is failure to take direct account of the influence of the scattering indicatrix of the investigated objects, derive photometric relation for a spherical photometer and for objects having arbitrary scattering indicatrices. Separate relations are derived for objects located on the surface of the sphere and in the center of the sphere. An experimental procedure for the determination of the absolute values of the reflection

Card 1/3

L 43869-65

O

ACCESSION NR: AP5006438

and transmission coefficients, using a specially designed sphereical photometer, shown in Fig. 1 of the Enclosure, is also described. The measurements necessary to determine the reflection and transmission coefficients by means of the formulas derived in the paper are then described briefly. Orig. art. has: 6 figures and 39 formulas.

ASSOCIATION: None

SUBMITTED: 25Apr64   ENCL: 01   SUB CODE: OP

NR REF SOV: 007   OTHER: 008
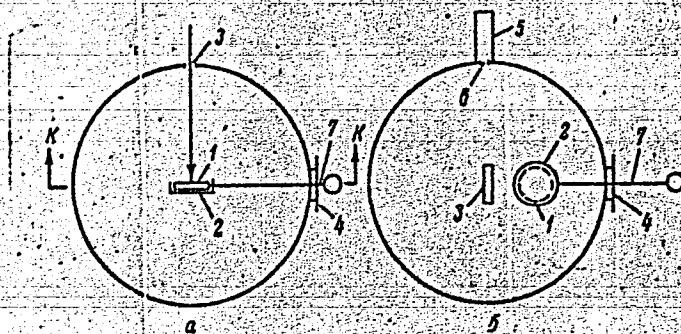
Card 2/3

L 43869-65

ENCLOSURE: 01

Fig. 1.   Construction diagram of spherical photometer.

1 - Sample holder, 2 - light-tight cap, 3 - entrance aperture, 4 - scale,
5 - radiation receiver, 6 - slit, 7 - rod.

a - Horizontal section, b - section KK

Card 3/3

AUTHOR: Rvachev, V.P.   SOV/90-58-1-3/9

TITLE: On Using the Oscillatory-Discharge Method in Tracing Cable-
                 Line Defects (Primeneniye metoda kolebatel'nogo razryada dlya
                 otyskaniya povrezhdeniy kabel'nykh liniy)

PERIODICAL: Energeticheskiy byulleten', 1958, Nr 1, pp 10-16 (USSR)

ABSTRACT: After having explained the essence of the oscillatory-dis-
                 charge method, the author describes 2 Soviet electronic oscil-
                 lographs. The first is called OZhO-3. It is equipped with
                 single-action slave sweep, and can detect cable defects within
                 the range of 10 or 12 km. Its operational precision is plus-
                 minus 20 m for a stretch of 2 km. The apparatus needs a
                 photographic outfit for recording oscillations. For this
                 purpose the author recommends FED, "Zorkiy" or "Kiyev" ca-
                 meras. He gives operational instructions and shows how the
                 distance of the traced defect is to be calculated. The second
                 electronic oscillograph is called IPV-3 (apparatus for measur-
                 ing small time intervals). It was developed by the tech-
                 nicians of the Lenenergo (cable network of Leningrad). Some
                 improvements have been introduced by TsNIEL (Central Scien-
                 tific Research Electrotechnical Laboratory) of MES. The
Card 1/2   apparatus received the name of EMKS-3 (electronic micro-

SOV/90-58-1-3/9

On Using the Oscillatory-Discharge Method in Tracing Cable-Line Defects

secondmeter, model 3) and is being prepared for serial pro-
duction in the "Energopribor" plant at Moskva. The pointer
of the apparatus directly indicates the distance of the
traced defect. The apparatus has 3 measuring band ranges
(for 1,000, 3,000 and 6,000 m). Its precision is plus-minus
1 %. Operational instructions are also given by the author.
For further, completely-precise localization of the defect,
the author proposes an acoustic method as most convenient.
A supplementary remark of the editor reads that the present
article is the last one of a series devoted to the cable de-
fect tracing with the help of modern electronic devices.
The first articles appeared in Energeticheskiy byulleten',
1957, Nr 2 and 3.
There are 5 circuit diagrams, 4 oscillograms, 1 photo and
7 Soviet references.

Card 2/2

ACCESSION NR: AR4036029 ·   S/0299/64/000/006/G006/G006

SOURCE: Referatiny*y zhurnal. Biologiya, Abs. 6G32

AUTHOR: Rvachev, V. P.; Berdnikov, V. F.; Vashchenko, V. I.

TITLE: Physical bases for measurements of the energy of photosynthetically active radiation with selective instruments

CITED SOURCE: Fiziol. rasteniy, v. 10, no. 5, 1963, 598-602

TOPIC TAGS: photosynthesis, solar radiation, radiation measurement, solar energy, photometer, photoactinometer, actinometry

TRANSLATION: The goal of this work was the evaluation of the relative sensitivity of existing instruments for the measurement of photosynthetically active radiation and the calculation of the corresponding corrective coefficients to adjust their readings to the readings of an ideal photoactinometer. The readings on the instruments depend essentially on the source of radiation, which is connected with the different distribution of energy in the spectra of the radiation sources. Usually, radiation sensors are rated under a heating lamp with a color temperature of 2850K. In this connection, in this paper, corrective coefficients are given for conversion of the readings of different instruments under

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ACCESSION NR: AR4036029

different radiation sources to the readings obtained under the heating lamp. Corrective
coefficients are also given for converting the readings on instruments working under dif-
ferent radiation sources into energy units. Chernovitskiy un-t (Chernovtsy University).
V. Korshunova

DATE ACQ: 09Apr64   SUB CODE: GP, LS   ENCL: 00

Card 2/2

RVACHEV, V.P. [Rvachov, V.P.]; VASHCHENKO, V.I.; BERDNIKOV, V.F.

Determining the energy of optical radiation by means of selective receivers. Ukr.fiz.zhur. 7 no.11:1226-1230 N '62.   (MIRA 15:12)

1. Chernovitskiy gosudarstvennyy universitet.
        (Actinometer)   (Radiation)

YENIKEYEV, S.B.; MYAGKOV, V.Ya.; RVACHEV, V.P.

Critical remarks on K.N.Kulizade's article and on the article of
G.M.Stepanov and I.I.Ginzburg. Energ. biul. no.7:7-13 Jl '58.
    (Electricity in mining--Standards)   (MIRA 11:10)

AUTHOR: Yenikeyev, S.B.; Myagkov, V.Ya.; Rvachev, V.P.   90-58-7-2/.8

TITLE: Critical Comments on K.N. Kulizade's Article and the Article by G.M. Stepanov and I.I. Ginzburg (Kriticheskiye zamechaniya po stat'ye K.N. Kulizade i stat'ye G.M. Stepanova i I.I. Ginzburga)

PERIODICAL: Energeticheskiy Byulleten', 1958, Nr 7, pp 7-13 (USSR)

ABSTRACT: The article deals with both Kulizade's formula for the standardization of electric power consumption in depth-pumping oil production and with Stepanov and Ginzburg's objections and criticisms of the above. Kulizade's formula, the method used by the Orgenergoneft's offices and O.P. Shishkin's formula are compared and the following conclusions are drawn: the Orgenergoneft' method is the most exact of existing methods, but it must be checked for how long the specific power consumption curves based on a previous detailed study of "typical" wells are in fact viable. The use of semi-empirical formulae is justified in spite of their inaccuracy due to the ease and speed with which they can be applied. A modified version of
Card 1/2   Kulizade's formula would be of great use; the modification

90-58-7-2/8

Critical Comments on K.N. Kulizade's Article and the Article by G.M.
Stepanov and I.I. Ginzburg (Kriticheskiye zamechaniya po stat'ye K.N.
Kulizade i stat'ye G.M. Stepanova i I.I. Ginzburga)

consisting of a more exact evaluation of the k-factor. The
authors obtained good results using the formula:

$$k = \frac{E \text{ dai} - 24\ P_o n}{2.73\ Q_{zh} H.\ \ 10^{-3}}$$

where E dai = daily electric consumption, Q_{zh} = daily yield
of the well, P_o = 0.02, coefficient taken from Kulizade's
Table 1 and n = number of strokes per minute of the pump piston.
There are 5 tables, 2 graphs and 5 Soviet references.

Card 2/2   1. Electric power—Consumption   2. Electric power—Standards

RVACHEV, V.P., kandidat fiziko-matematicheskikh nauk.

Mechanical interlock of PS-10 drives. Energetik 4 no.2:23-24
F '56.   (MLRA 9:5)
                    (Electric driving)

RVACHEV, V. P.

Mbr., Inst. Physics, Odessa State Univ. im. I. I. Nechnikova, -c1941-.

Mbr., Chair Physics, Odessa Ind. Inst., -c1941-.

"Concerning Luminescence of Fluor Spar," Journal Phys., 6, Nos. 3-4, 1942.

RVACHEV, V.P.

Using the method of oscillatory discharge to locate damage in cable
lines. Energ. biul. no.1:10-16 Ja '58.   (MIRA 11:1)
                         (Electric cables)

RVACHEVA, V.P

KOLYADA, F.Ye.; RVACHEVA, V.P.

Case of syphilitic aortic aneurysm which opened into the left pleural
cavity. Vest.ven.1 derm. no.2:58-59 Mr-Ap '54.   (MLRA 7:4)

1. Iz Kiyevskogo dermato-venerologicheskogo instituta.
        (Syphilis) (Aortic aneurysms)

RVACHEV, V.P.; SOROKIN, S.A.

Changing synchronous motors over to simplified starting and protection
circuits. Energ.biul. no.12:1-7 D '57.   (MIRA 10:12)
                        (Electric motors, Synchronous)

RVACHEV, V.P.

Burning through the insulation of power cables in damaged places
where there is no special equipment for this process (exchange of
experience). Energ.biul. no.2:9-12 F '57.   (MLRA 10:3)
            (Electric cables)

RVACHEV, V.P.

Locating damage in cable lines with the aid of the IKL-4 pulse
instrument. Energ. biul. no.3:3-7 Mr '57.   (MIRA 10:4)
(Electric cables--Testing)

GNEDENKO, B.V.; RVACHOVA, Ye. L.

One characteristic property of the normal law of distribution.
Dop.AN URSR no.3:3-5 '48.   (MIRA 9:9)

1.Diysniy chlen AN URSR (for Gnedenko). 2.L'vivs'kiy viddil
Institutu matematiki Akademii nauk Ukrains'koi RSR.
          (Distribution (Probability theory))

GNEDENKO, B.V.; RVACHEVA, Ye.L.

    One characteristic property of the normal law of distribution.
    Zbir.prats' Inst.mat.AN URSR no.11:36-42 '48.   (MLRA 9:9)
            (Distribution (Probability theory))

Rvacheva, Ye.L.

Meizler, D. G., Parasyuk, O. S., and Rvačeva, E. L. A multidimensional local limit theorem of the theory of probability. Doklady Akad. Nauk SSSR (N.S.) 60, 1127-1128 (1948). (Russian)

The authors generalize Gnedenko's result [cf the preceding review] to multidimensional random variables. The proof is omitted.   J. L. Doob (Urbana, Ill.).

Source: Mathematical Reviews,   Vol 10 No. 2

RVACHEVA, YE. L.

MEYZLER, D.G.; PARASYUK, O.S.; RVACHEVA, Ye.L.

Multivariate local limit theorem in the theory of probabilities.
Ukr.mat.zhur. [1] no.1:9-20 '49.   (MLRA 7:10)
      (Probabilities)

Rvachova, K. L.

Rvačova, K. L. Domains of attraction of many dimensional stable distributions. Dopovidi Akad. Nauk Ukrain. RSR. 1950, 179–181 (1950). (Ukrainian. Russian summary)

Let $\{\xi_1^{(n)}, \cdots, \xi_s^{(n)}\}$ be a sequence of mutually independent random vectors in an n-dimensional Euclidean space, with a common probability distribution $P(\Gamma)$ (where Γ is a Borel set). Generalizing the corresponding well-known results for $s = 1$ the author gives conditions on $P(\Gamma)$ which are necessary and sufficient for the existence of sequences of numbers $B_1^{(n)}, \cdots, B_s^{(n)}$, and $A_1^{(n)}, \cdots, A_s^{(n)}$ for which the random vectors $X^{(n)}$ with components $[\xi_i^{(n)} - A_i^{(n)}]/B_i^{(n)}$ have probability distributions converging to an s-dimensional quasi-stable distribution of a prescribed type. This, of course, includes a multi-dimensional central limit theorem. No proofs are given.   W. Feller.

Source: Mathematical Reviews,   Vol. 13 No. 7

RVACHOVA, K-L.

Rvačova, K. L. A many dimensional local theorem for stable limit distributions. Dopovidi Akad. Nauk Ukrain. RSR. 1950, 183-189 (1950). (Ukrainian. Russian summary)

The theorems of the preceding review are considered for the case where the components $\xi_i^{(n)}$ assume only integral values. It is proved that under appropriate conditions not only the probability distributions converge, but that (after an appropriate norming) the probabilities of the individual lattice points tend to the limiting probability density.
W. Feller (Princeton, N. J.).

cal Reviews,   Vol   13 No. 7

1. RVACHEVA, E. L.

2. USSR (600)

4. Ostrogradskiy, Mikhayl Vasil'yevich, 1801-1861.

7. Session of the Department of Physical Mathematical and Chemical Sciences of
   the Academy of Sciences of the Ukrainian S.S.R., dedicated to the 150th anniversary
   of the birthday of M. V. Ostrogradskiy. Ukr. mat. zhur. 4, No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, _____ April _____ 1953, Uncl.

Rvačeva, E. L. On the maximum discrepancy between two empirical distributions.   Ukrain. Mat. Žurnal 4, 373–392 (1952).   (Russian)

Gnedenko and Korolyuk [Doklady Akad. Nauk SSSR (N.S.) 80, 525–528 (1951); these Rev. 13, 570] have shown how the problem of comparing the empirical distributions of two equal samples can be reduced to a random walk problem. Further results were obtained by Gnedenko and the present another [ibid. 82, 513–516 (1952); these Rev. 13, 760]. The reader is referred to either of these reviews for notations and explanations. The author obtains new and detailed results. Let $(x_1, \cdots, x_n)$ and $(y_1, \cdots, y_n)$ be the two samples, and let $(s_1, s_2, \cdots, s_{2n})$ be their rearrangement in increasing order. Let $\omega_n(j) = F_1(s_j) - F_2(s_j)$, where F_1 and F_2 are the two empirical distributions. Denote by $D_n^+(p, q)$, $D_n^-(p, q)$, respectively, the maximum and minimum of $\omega_n(j)$, when $0 \leq p \leq j \leq q \leq 2n$. The author obtains the joint conditional distribution of the k-dimensional random variable $\{D_n^+(0, 2n), D_n^+(1, 2n), \cdots, D_n^+(k, 2n)\}$ for given values of $\omega_n(0), \omega_n(1), \cdots, \omega_n(k)$, and also the corresponding unconditional distribution. Next she derives analogous conditional and unconditional distributions for the $2k$-dimensional variable

$$\{D_n^+(0, 2n), D_n^-(0, 2n), \cdots, D_n^+(k, 2n), D_n^-(k, 2n)\}.$$

In each case the limiting distribution as $n \to \infty$ is obtained. Finally the distribution of the maximal term of the sequence $\{\omega_n(j)\}$ is given together with its limiting form. As an interesting corollary one gets that the probability that the sequence $\{\omega_n(j)\}$ assumes its maximum at one and only one place j with $0 < j < 2n$ equals one half; and that each place j has the same probability $1/2(2n-1)$ to be this place of maximum.   W. Feller (Princeton, N. J.).

RVACHEVA, Ye.L.

Multivariate local theorem for limit stable distributions.
Trudy Inst.mat.i mekh. AN Uz.SSR no.10 pt.1:106-121 '52.
                        (Probabilities)   (MLRA 8:9)