

MIRIANASHVILI, G.M.; KAVILADZE, M.Sh.; ABASHIDZE, I.V.

Ion source for the exact measurement of isotopic relations in a 10-
phase specimens. Soob. AN Gruz. SSR 32 no.2:311-317 '63.

1. Tbilisskiy gosudarstvennyy universitet. Submitted January 4, 1963. MIRA 18:11

MIRIANASHVILI, G.Z.

Height of rooms in southern districts; data from micro-climatic studies in Tiflis. Soob. AN Gruz. SSR 23 no.3: 305-311 S '59. (MIRA 13:3)

1. Otdel tipisatsii zhilishcha v usloviyakh Gruzinskoy SSR NIIGI'a i AS k Kh SSSR i Moskovskiy Arkhitekturnyy institut. Predstavleno chlenom-korrespondentom Akademii O.D. Oniashvili. (Tiflis--Swellings--Heating and ventilation)

MIRIANASHVILI, K. A.

7901. MIRIANASHVILI, K. A. Lecheniye onikhomikozov. tbilisi, Gruzmedgiz, 1954.
14 S. 20 sm. 3.000 EKZ. Bespl.--Na gruz. yaz.--(55-3824)

616.5: 616.969

SO: Knizhuaya Letopis', Vol. 7, 1955

1. The first of the two main points of the report is that the

1. The first of the two main points of the report is that the

2. The second of the two main points of the report is that the

MIRIANISHVILI, M.M.

Relativistic magnetic moment of charged particles. Soob. AN Gruz.
SSR 8 no.9/10:613-618 '47. (MIRA 9:7)

1. Akademiya nauk Gruzinskey SSR, Institut fiziki i geofiziki,
Tbilisi. Predstavlene deystvitel'nykh chlenov Akademii I.N. Vekua.
(Particles, Elementary) (Nuclear moments)

MIRIANASHVILI, M. (U)

Category : USSR/Theoretical Physics - Quantum Field Theory

B-6

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 215

Author : Ivanenko, D. and Mirianashvili, M.

Inst : Moscow State University

Title : Nonlinear Generalization of the Dirac Spinor Equation

Orig Pub : Dokl. AN. SSSR, 1956, 105, No 3, 413-414

Abstract . Examination of nonlinear effects in a classical spinor field $\psi(x)$, caused by interaction of a certain quantum spinor field $\chi(x)$ with vacuum. The Lagrangian of the interaction between the field is selected in the form of a product of pseudo-scalar "currents" $L = -g\bar{\chi}\gamma_5\chi + \delta\bar{\psi}\psi$, where g is the "bare" coupling constant. For $\psi(x)$ one obtains by the usual method the Dirac equation, the right half of which is of the form $\gamma_5\psi(x) = \langle \bar{\chi}\gamma_5\chi \rangle_{vac}$ and is a non-linear functional of $\psi(x)$. The average of the χ -field over the vacuum is calculated by the Schwinger method in the first non-vanishing approximation and under the assumption that the gradients of the χ -field are small. As a result we obtain for $\psi(x)$ a nonlinear equation, with the role of the effective coupling constant being played by the quantity $\lambda = g^2/s_0^2$.

Card : 1/2

Category : USSR/Theoretical Physics - Quantum Field Theory

B-6

Abstr Jour : Ref Zhur - Fizika, No 1, 195, No 215

where s_0^{-1} is a quantity on the order of the upper limit of the momentum spectrum of the virtual χ -particles. It is noted that in this version of the theory, renormalization is possible only by introducing a certain "bare" nonlinearity.

Card : 2/2

MIRIAN *Shurik M.M.*

488. ON THE NATURE OF FIELD FUNCTIONS. *2530.145 517.566*
M.M. Mirzashvili, V.V. Chavchavadze and Ya.O. Mamaladze.
Zh. teoret. fiz., Vol. 23, No. 5, 1236-7 (1957). In Russian.
It is suggested that quaternions might serve as generalized
field functions. Transformations in the space of the basic vectors
are essentially gauge transformations, and invariance of these can
lead to conservation of various charges. *4*
G.E. Brown *je*

A. JAMASHVILI, Ph.D., Doc Phys-Math Sci (USSR), "Certain problems of
polarization of a vacuum and the non-linear field theory." Tbilisi,
1968. 10 pp (Tbilisi State Univ. Stalin), 1 G. ed. text. Bibliography
at end of text (20 titles). (SI, 30-1, 121)

- / -

MIRIANOSHVILI, M.

Know, protect, and develop. IUn. nat. no.9:1-2 S '61.

(MIRA 14:8)

1. Uchenyy sekretar' prezidiuma Vserossiyskogo obshchestva
okhrany prirody.

(Natural resources--Study and teaching)

MIRIANASHVILI, M.M., red.

[Problems of gravitation; abstracts of papers] Problemy
gravitatsii; teziy dokladov. Tbilisi, Tbilisaki gos.
univ., 1965. 273 p. (MIRA 18:12)

1. Sovetskaya gravitatsionnaya konferentsiya. 2d. Tiflis,
1965. 2. Chlen-korrespondent AN Gruzinskoy SSR.

I. 25778-66 EWT(1) IJP(c) AT

ACC NR: AP6016358

SOURCE CODE: UR/0251/65/039/003/0551/0554

AUTHOR: Mirianashvili, M. M. (Corresponding member AN GruzSSR); Gobedzhishvili, M. S.

ORG: Tbilisi State University (Tbilisskiy gosudarstvennyy universitet)

TITLE: Emission during hyperbolic motion of a charge

SOURCE: AN GruzSSR. Soobshcheniya, v. 39, no. 3, 1965, 551-554

TOPIC TAGS: electron motion, causality principle, electromagnetic field

ABSTRACT: Some authors consider that during hyperbolic motion (motion at constant acceleration) an electron does not radiate energy. Others, particularly Fulton and Rohrlich (Classical Radiation from a Uniformly Accelerated Charge, Annals of Physics, Vol 9, 41, 1964), in a detailed study of the question came to the conclusion that the hyperbolic motion of a charge is accompanied by the radiation of energy. Fulton and Rohrlich studied the motion of an electron in the inertial system S in which motion of the particle is described with the aid of z and

$$v(t) = \frac{dz}{dt}$$

where

$$z = \sqrt{a^2 + t^2} \quad (\text{for } t = 0, z = a > 0),$$

$$\dot{v} = \frac{t}{\sqrt{a^2 + t^2}} a, \quad (1)$$

Card 1/5

L 25778-66

ACC NR: AP6016358

(\vec{z}_0 is a unit vector along the direction of the z axis). The field potentials, created by the charge, are L'yeonar-Vikhert(sic) potentials

$$A_p = \frac{e_0 q_0}{R^2 v_0}, \quad R^2 = (t - t_0)^2 - r^2, \quad (2)$$

and the condition of casualty that (2) is a delayed potential. $|t - t_0 - R| \equiv |t - t_0 - \sqrt{t^2 - r^2}| > 0$ guarantees

The fields obtained by Fulton and Rohrlich in accordance with the causality condition are satisfied in the region $z \neq t > 0$ but are unstable when $z \neq t = 0$, since the fields for $z \neq t = 0$ should be emitted when $t_0 = -\infty$ if the charge is moved along a light cone by $z = \neq \infty$. However, motion of the particle of the end mass along the light cone means that it has precisely the speed of light, but only in the physical sense. To eliminate this difficulty, it is assumed that a particle in a definite interval of time - $t' \leq t \leq t'$ moves in a homogeneously constant field and that when $t > t'$, the field is cut off and it continues to move according to the inertia of its constant speed: i.e., in the region $t' < t < t'$. Formulas (1) are accurate but outside of this region

$$z = \frac{t}{k} + A, \quad v = \frac{1}{k}$$

where

Card 2/5

L 25778-66

ACC NR: AP6016358

$$k = \frac{t}{\sqrt{\alpha^2 + t^2}}, \quad \lambda = \frac{\alpha^2}{\sqrt{\alpha^2 + t^2}}$$

(t' is a fixed time when cut-off of the field occurs). Consequently, if $t \geq t'$ and $t \rightarrow \pm \infty$, the following holds:

$$Z = \frac{\alpha^2 + t'}{\sqrt{\alpha^2 + t'^2}} \quad (3)$$

$$\ddot{v} = \frac{t}{\sqrt{\alpha^2 + t'^2}} \ddot{z}_0 = \text{const.}$$

One is easily convinced that when $t \rightarrow \pm t'$, all these formulas are continuously converted into the Fulton and Rohrlich formulas. In the cylindrical coordinates ρ, Z, Φ , for Au, in accordance with (2) and (3), the following is obtained:

$$A_0 = \Phi = \frac{e}{\tilde{\epsilon}_0}, \quad A_z = \frac{e c_0}{\tilde{\epsilon}_0}, \quad A_\rho = A_\varphi = 0, \quad (4)$$

where

$$\tilde{\epsilon}_0 = \sqrt{(1 - c_0^2) \rho^2 + z^2 + c_0^2 t'^2 - 2 c_0 z t' - 2 c_0 \gamma z + c_0^2 \gamma^2 + 2 c_0 \gamma t'}$$

$$c_0 = \frac{t}{\sqrt{\alpha^2 + t'^2}}, \quad \gamma = \frac{\alpha^2}{t'}$$

Card 3/5

L 25778-66

ACC NR. AP6016358

By differentiation of (4), the authors obtain the electromagnetic field strength of the charge: 0

$$E_{\varphi} = 0, \quad E_{\rho} = \frac{e(x-c_0)\rho}{\tilde{c}_0^3}, \quad E_z = \frac{e(c_0^2 - 1)}{\tilde{c}_0^3} (c_0 t - z + c_0 \tau),$$

$$H_{\rho} = 0, \quad H_z = 0, \quad H_{\varphi} = \frac{ec_0(x-c_0)\rho}{\tilde{c}_0^3} = c_0 S_{\rho}. \quad (5)$$

The energy flow J , radiated uniformly by the charge, is calculated according to the well-known formula

$$J = \bar{S} \bar{n},$$

where \bar{S} is the Poynting vector

$$\bar{S} = \frac{1}{4\pi} [\bar{E}\bar{H}] = \frac{H_{\varphi}}{4\pi} (E_{\rho}\bar{z}_0 - E_z\bar{\rho}_0);$$

\bar{n} , \bar{z}_0 and $\bar{\rho}_0$ are unit vectors;

$$J = \bar{S}\bar{n} = \frac{H_{\varphi}R}{4\pi R} (E_{\rho}\bar{z}_0 - E_z\bar{\rho}_0).$$

After obtaining the values of H , E , and E_z from (5) and making

Card 4/5

L 25778-66

ACC NR: AF6016358

calculations for the energy flow, the authors obtain the following: 0

$$J = \frac{c^2 c_0^2 (1 - c_0^2) R^2 \sin^2 \theta}{4 \pi R^2 (1 - c_0 \cos \theta)^3}$$

The total energy radiated at the moment t_Q will be

$$\frac{dW}{dt_Q} = \lim_{R \rightarrow \infty} \int R^2 d\Omega = 0.$$

Thus, the rate of radiation dW/dt_Q for any moment t_Q after out off of the field ($t_Q > t'$) will be zero. This corresponds to the results of the works of Pauli and Laue for the region $z \neq t = 0$. It is easy to see that when $t \rightarrow + t'$, formulas (3) are transformed into (1), and instead of (4) and (5), there result the formulas obtained by Fulton and Rohrlieh. For the rate of radiation energy in this case

$$\frac{dW}{dt_Q} = 2/3 c^2 / \omega^2.$$

Orig. art. has: 5 formulas. [JPRS]

SUB CODE: 20 / SUBM DATE: 25Feb65 / ORIG REF: 001 / OTH REF: 003

Card 5/5 CC

L 33794-66 EWT(1)/T IJP(c)

ACC NR: AP6025118

SOURCE CODE: UR/0251/66/041/002/0293/0300

AUTHOR: Mirianashvili, M. M. (Corresponding member AN GruzSSR)

ORG: Tbilisi State University (Tbilisskiy gosudarstvennyy universitet)

TITLE: Relativistic particle motion in a scalar field

SOURCE: AN GruzSSR. Soobshcheniya, v. 41, no. 2, 1966, 293-300

TOPIC TAGS: relativistic particle, particle motion, particle acceleration, Hamiltonian Jacobi equation

ABSTRACT: The author notes that the question of the classical relativistic motion of a particle in scalar and vector fields has been considered in the last few years in two articles by I. Werle and in an article by G. Szamosi and G. Marx. The latter considered the motion of a particle in a scalar field and showed that in a certain region, in view of relativistic effects, attraction changes to repulsion. However, this paradoxical conclusion has remained unexplained. The present article considers the relativistic motion of a particle in a scalar field characterized by the four-scalar $\varphi(x, y, z, t)$. The following phenomena are considered:

- 1. The decrease in force to zero as a particle approaches the point $r = r_0$. The author states that this is due to a corresponding increase in the mass of the particle to an infinitely large value.

Card 1/2

L 33794-66

ACC NR: AP6025118

2. The change from attraction to repulsion in the region from r_c to r_0 .
The author's explanation is as follows: as the particle passes through point
 $r = r_0$, the law of the conservation of energy requires a change in the radical
sign of the energy equation; this in turn, means a change in the sign of the
mass to a negative mass, so that the particle is accelerated in a direction
opposite to that of the effective force.
The Hamilton-Jacobi relativistic equation is used to explain Werle's error.
Orig. art. has: 20 formulas. [JPRS: 35,630]

SUB CODE: 20 / SUBM DATE: 08Oct65 / OTH REF: 003

Card 2/2

ACC NR: A:7009579

SOURCE CODE: UR/0251/66/044/000 557/0561

AUTHOR: Mirianashvili, M. N. (Corresponding Member of the Academy of Sciences, Georgian SSR); Pakushadze, T. I.; Gvelesiant, L. P.

ORG: Tbilisi State University (Tbilisskiy gosudarstvennyy universitet)

TITLE: Mixed cadmium ferrites of spinel structure

SOURCE: AN GruzSSR. Soobshcheniya, v. 44, no. 3, 1966, 557-561

TOPIC TAGS: ferrite, crystal lattice structure, saturation magnetization

SUB CODE: 20

ABSTRACT: The article considers mixed cadmium ferrites, which are solid solutions of magnetic ferrites $MeFe_2O_4$ ($Me = Co, Ni, Cu, Mn, etc.$) with a cadmium ferrite ($CdFe_2O_4$). The electron configurations of zinc and cadmium ions are identical, as is also the structure of the lattice in which the Zn^{2+} and Cd^{2+} ions crystallize. The radius of the Cd^{2+} ion is 30% greater than that of the Zn^{2+} ion, so that for the conversion of the Cd^{2+} ion in a mixed cadmium ferrite into an extremely magnetic ion with $\mu = 8 \mu_B$ there should be present in the second coordination sphere a greater number of divalent magnetic Me^{2+} ions with vacancies in the outer 3d shells than in the case of the zinc ion. A table is given of experimental data for the saturation magnetization of the mixed cadmium $Me_{1-x}Cd_xFe_2O_4$ in Bohr magnetons, extrapolated for 0°K. The article also presents curves expressing the theoretical dependence of the saturation magnetization of cadmium ferrites on the concentration δ of cadmium. Orig. art. has: 4 figures, 3 formulas and 1 table. [JPRS: 40,102]

Card 1/1

0930 1/10

MIRIANASHVILI, M.M.; GOBEDZHISHVILI, M.S.

Solution of equations of the gravitational field by the
"falling box" method. Soob. AN Gruz. SSR 33 no.3:543-548
Mr '64 (MIRA 17:2)

1. Tbilisskiy gosudarstvennyy universitet. 2. Otkrytye koresponden-
den AN GruzSSR (for Mirianashvili).

L 14121-66 EWT(m)/EWP(t)/EWP(b) LJP(c) JD
 ACC NR: AP6000855 SOURCE CODE: UR/0181/65/007/012/3566/3570⁵²
 AUTHORS: Mirianashvili, Sh. M.; Nanobashvili, D. I.; Razmadze, Z. G.^B
 ORG: Tbilisi State University (Tsilisski gosudarstvennyy universitet)
 TITLE: On the possibility of transmutional doping of indium antimonide ✓
 SOURCE: Fizika tverdogo tela, v. 7, no. 12, 1965, 3566-3570 27
 TOPIC TAGS: neutron irradiation, neutron absorption, indium compound, antimonide, impurity conductivity, Hall constant
 ABSTRACT: Results are presented of irradiation of indium antimonide with slow neutrons. Although the total cross section for the absorption of thermal neutrons is known for the components in InSb, theoretical calculations are made difficult by lack of data on the properties of the different impurities in the binary A^{III}B^V compounds. The measurements were made on n-type InSb with initial impurity atom (donor) concentration 3.37×10^{13} -- $6.17 \times 10^{15} \text{ cm}^{-3}$, and p-type with
 Card 1/2

L 14121-66

ACC NR: AP6000855

acceptor concentration 2.93×10^{14} -- $4.57 \times 10^{17} \text{ cm}^{-3}$. The irradiation was effected in the experimental channels of the reactor of the Institute of Physics of the Academy of Sciences of the Georgian SSR at temperatures 100 and 300K. The results show that it is possible to introduce by means of neutron transmutation donor impurities (Sn and Te) into InSb in any desired amount. The final conductivity of the InSb sample after annealing is governed by the balance between the carriers present in the sample prior to irradiation and the carriers produced as a result of the transmutational doping. Irradiation causes the Hall constant to behave in the same manner as for an ordinary substitutional semiconductor. It is pointed out that irradiation aimed at producing additional scattering centers has a tendency to reduce the mobility of the carriers. This effect depends on the initial concentration of the free carriers, on the degree of compensation of the samples, and on other factors. For samples with carrier density less than 10^{16} cm^{-3} the decrease in mobility does not exceed 10 -- 15 per cent for fluxes up to $10^{16} \text{ neut/cm}^2$. Orig. art. has: 3 figures, 5 formulas, and 2 tables.

SUB CODE: 20/ SUBM DATE: 10JUN65/ OTH REP: 004

Page 2/2

MIRIANISHVILI, Sh.M.; NANOBASHVILI, D.I.; RAZMADZE, Z.G.

—irradiation of indium antimonide. Soob. Ak. Gruz. SSR 38
no.1:53-58 Ap '65. (MIRA 18:12)

1. Tbilisskiy gosudarstvennyy universitet. Submitted Nov. 12,
1964.

I. 10725-66 EWT(m)/EPF(n)-2/T/EPF(t) IJR(e) JD/GO

ACC NR: AP6005089

SOURCE CODE: UR/0251/65/040/003/0589/0595

AUTHOR: Mirianashvili, Sh. M.; Manobashvili, D. I.; Razmadze, Z. G.ORG: Tbilissi State University (Tbilisskiy gosudarstvennyy universitet)TITLE: Low-temperature irradiation of indium antimonide with fast neutrons ¹⁹ 16SOURCE: AN GruzSSR. Soobshcheniya, v. 40, no. 3, 1965, 589-595 ²⁷ 13

TOPIC TAGS: neutron irradiation, antimonide, indium compound, fast neutron, electric conductivity, lattice defect

ABSTRACT: Monocrystalline specimens of InSb were irradiated with fast neutrons at 100-300°K in a low-temperature horizontal channel of the reactor of the Institute of Physics, Academy of Sciences Georgian SSR, with continuous measurement of electric conductivity of the specimens. It was found (Fig. 1) that the decrease in the electric conductivity of InSb specimens of the n-type at the initial moment of irradiation occurs at a constant rate and is a linear function of the fast neutron flux. As the time of irradiation increases, however, owing to annealing and recombination of defects, the rate of variation in electric conductivity decreases. The minimal value toward which tends the conductivity of specimens of the n-type following prolonged irradiation is, contrary to the findings of W. Cleland and J. H. Crawford (Neutron Irradiation of Indium Antimonide. Phys. Rev., 95, 1954, 1177), on irradiation with

Card 1/3

L 18725-66

ACC NR: AF6005089

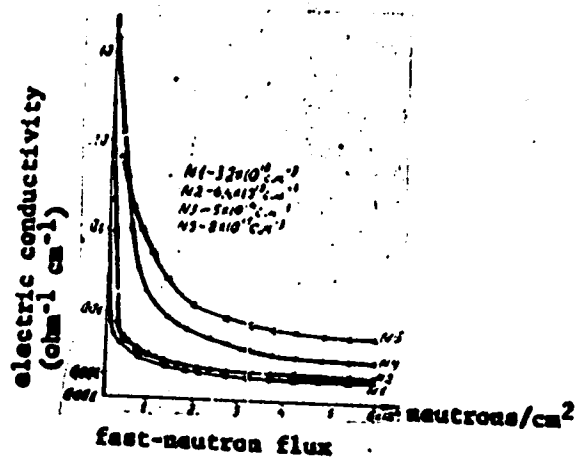


Fig. 1. n-Type conductivity of InSb as a function of fast-neutron flux at the temperature of 1100°K

Card 2/3

L 18725-66

ACC NR: AP6005089

fast neutrons at room temperature, not common to all specimens but depends on the initial donor concentration N_d , decreasing with decreasing N_d (the specimens investigated had an initial N_d of $\sim 3.2 \times 10^{13} \div 2 \times 10^{15} \text{ cm}^{-3}$ and acceptor concentration N_a of $\sim 1.9 \times 10^{14} \div 1.6 \times 10^{17} \text{ cm}^{-3}$, inclusive of specimens of the p-type with a thermoacceptor concentration of $1.9 \times 10^{14} \text{ cm}^{-3}$ and $1.62 \times 10^{15} \text{ cm}^{-3}$, obtained by vacuum annealing). Fast-neutron irradiation is bound to cause in equal quantities two types of disorders of the crystalline lattice of the semiconductor: vacancies and interstitial atoms. This complicates the picture of the energy levels of the defects owing to the appearance in the forbidden zone of InSb of levels associated with the first and second ionization potentials of vacancies and intermediate atoms. The concentration of current carriers in specimens of both n- and p-types was found to sharply decrease on irradiation. This shows that low-temperature irradiation of InSb produces donor and acceptor levels located sufficiently deeply in the forbidden zone so that electric conductivity decreases. The annealing of radiation damage in the temperature range of 100-300°K confirms the author's assumption that acceptor levels get annealed much more intensively than donor levels. Orig. art. has: 2 figures, 1 table.

SUB CODE: 11, 13, 18, 20/ SUMM DATE: 30Jan65/ ORIG REF: 002/ OTH REF: 001

Card 3/3 S/M

L 10355-07 ENI(M)/ENP(T)/EIA 10F(C) 00

ACC NR: AP6027261

SOURCE CODE: UR/0251/66/042/002/0305/0310

AUTHORS: Mirianashvili, Sh. M. (Corresponding member AN GruzSSR); Nanobashvili, D. I.; Razmadze, Z. C.

ORG: Tbilisi State University (Tbilisskiy gosudarstvennyy universitet)

TITLE: Possible transmutational alloying of indium antimonide

SOURCE: AN GruzSSR. Soobshcheniya, v. 42, no. 2, 1966, 305-310

TOPIC TAGS: semiconductor alloy, neutron bombardment, semiconductor conductivity

ABSTRACT: This paper contains the results obtained from bombarding InSb with slow neutrons. The effectiveness of transmutational alloying should be determinable, but theoretical computations are complicated because few detailed data have appeared thus far in the literature concerning the properties of various impurities in the compounds. Although InSb has been studied in considerable detail, it is not yet clear how some impurities affect conductivity in it. Specimens of n-type InSb with an initial concentration of impurity atoms of $N_d \approx 3.37 \cdot 10^{13} - 6.17 \cdot 10^{15} \text{ cm}^{-3}$ and p-type InSb with $N_a \approx 2.93 \cdot 10^{14} - 4.57 \cdot 10^{17} \text{ cm}^{-3}$ were studied. These were exposed in the experimental port of the reactor at the Institute of Physics of the Academy of Sciences, Georgian SSR, at temperatures of 100 and 300 K. For removing distortions of the crystal lattice caused by fast neutrons and by impurities of recoil atoms, the

Card 1/2

L 10355-67

ACC NR: AP6027261

specimens were heated to 375--400C (p-type) and 350C (n-type) after radiation, held at this temperature for 25--30 hours, and then slowly cooled to room temperature. The resulting conductivity of the InSb samples after annealing is determined by the balance between current carriers present before radiation and those formed by transmutational alloying. It was found that, after annealing, the Hall constant assumes values typical of substitutional impurity semiconductors. It was also found that, within the limits of experimental error, the concentrations of current carriers computed from the value of the absorption cross section and measured from the Hall effect are equal. The effect of bombardment tends to decrease the mobility of the current carriers. This effect depends on the initial concentration of free current carriers, on the degree of compensation, and other factors. Annealing restores mobility, but not to the initial value. The reason for this is scattering at chemical impurities introduced from nuclear transmutations. For specimens with concentrations of current carriers less than 10^{16} cm^{-3} , the decline in mobility does not exceed 10--15% (for a flux up to $10^{16} \text{ neutrons/cm}^2$). This paper was presented by Sh. M. Mirianashvili, corresponding member of the Academy, on 08 May 1965.

SUB CODE: 20, 11/

SUBM DATE: 08May65/

ORIG REF: 001/

OTH REF: 003

Card 2/2

JB

MIRIANASHVILI, V.A.

Apparatus for washing and drying glass tubing. Med.prom.12 no.12:
36-39 D '58 (MIRA 11:12)

1. Tbilisskiy khimiko-farmatsevticheskiy zavod.
(WASHING MACHINES)

VOLOSUK, V.M.; KRYAZH, I.Z.; MIRIANASHVILI, V.V.; POROZOV, A.F.;
KANDIYEVA, Ye.V., red.; SOKOLOVA, N.N., tekhn. red.

[There will be millions of chicks for meat] Budut milliony
miasnykh tsypliat. Literaturnaya zapiska' N.I.Koneva. Mo-
skva, Sel'khozizdat, 1962. 53 p. (MIRA 16:5)
(Poultry)

MIRIANASHVILI, Ye. V., Cand of Agric Sci -- (diss) "Fundamental Agro-measures for
Improving the Harvestability and Quality of Table Grapes," Tbilisi, 1959, 17 pp
(Georgian Agricultural Institute) (KL, 4-60, 121)

MIRIASOV, N. Z.

Miriasov, N. Z. (Physics) Influence of inner tensions on the law of approximation to saturation. P. 65

Laboratory of Magnetism
June 27, 1950

SO: Herald of the Moscow University. Series on Physics-Mathematics and Natural Sciences, No. 3, No. 5, 1951

MIRIC, Dorde

Bats (Chiroptera) of the Petrovaradin fortress. Glas Prirod muz B no.16:
135-175 '60.

MIRIC, D.; DULIC, B.

New propagation areas of the genus *Dolomys* in Yugoslavia. *Bul
sc Youg* 7 no.3:60 Je '62.

1. Prirodoslovni muzej, Beograd, Bioloski institut Sveucilista,
Zagreb.

17.8.50, 17.9.50

Degradation products formed by the action of calcium hydroxide on aqueous solutions of L-ascorbic acid (reductions, glycolic acid and glyoxylic acid). A. B. Damanski and M. O. Mikh (Bull. Soc. chim. Belgrade, 1953, 20, 337-341). -- aq. solutions of L-ascorbic acid (0.4%) were treated at different temp. with varying amounts of Ca(OH)₂. With <1 equiv. of Ca(OH)₂ there is only partial oxidation to dehydroascorbic acid. With 1 to 3 equiv. of Ca(OH)₂ there is progressive degradation, increasing with temp., to oxalic, glycolic and glyoxylic acids.

A. B. DENSHAN.

chem 2 1000

AM 22

DAMANSKI, Aleksandar F.; MIRIC, Milan O.

New method of obtaining isopropylidene ascorbic acid. Gl hem dr
23/24 no.5/6:271-273 '58/59. (EEAI 10:4)

1. Farmaceutski fakultet, Institut za bromatologiju, Beograd.
(Isopropylidene ascorbic acid)
(Ascorbic acid) (Borium) (Suspensions)

JOSIFOVIC, Mladen; MIRIC, M., inz.

Helminthosporium carbonum Ullstr., a new maize parasite
in Yugoslavia. Glas SAN 12 no.2:281 '60 [publ.'62].

1. Dopisni član Srpske akademije nauka i umetnosti, Beograd.

MIRIC, M.S.

Knowledge of the chemical composition of the glycerides, the fatty acids and unsaponifiable matter during the development and ripening of fruits and seeds of some plants. *Chem. Abstr.* 40, 81, 10, 104.

1. Pharmaceutical Faculty, University of Zagreb, Yugoslavia.

MIRIC, Milan O.; CUPIC, Zorica, V.

Fatty materials in the seed of *Juglans regia* L. during germination. Glas Hem dr 27 no. 7/8:422-426 '62

1. Faculty of Pharmacy, Institute of Bromatology, Beograd.

MIRIC, Vera

MIRIC, Vera, major, dr.; GAVRANKAPETANOVIC, Zijo, major, dr.

Case of Brill's disease. Voj. san. pregl., Beogr. 11 no.3-4:109-110 Mar-Apr 54.

1. Interno odeljenje Vojne bolnice u Sarajevu.

(TYPHUS

*Brill's dis.)

MIRIC, Vera, Sanitetski potpukovnik dr

Rheumatic fever in past 4 years (report of 793 cases). Voj.san.pregl..
Beogr. 17 no.11:1135-1142 N '60.

1. Vojna bolnica u Sarajevu, Interno odeljenje
(RHEUMATIC FEVER epidemiol)

FILIP M, Volinir, psiholog; MIRIC, Vera, psiholog

Some psychological aspects of traffic accidents. *Vojnosanit. pregl.*
22 no.12:774-776, 1969.

Mirica, G .

Guiding principles for the improvement of the Danube River delta. p. 367.

..IDPOFICLOGIA. (Academia Republicii Populare Romine. Comisie de Hidrologie, hidrobiologie si Iritologie) Bucuresti, Rumania. Vol. 1, 1958.

Monthly list of East European Accessions (EEAI) LC, Vol. 4, no. 4, Aug. 1959

Uncl.

MIRICA, G.

TECHNOLOGY

Periodical: REVISTA INDUSTRIEI ALIMENTARE. No. 6, 1958.

MIRICA, G. Orientation of fisheries in the inundatory region of the Danube River, in view of extending the agro-reed damming in this region. p. 1.

Monthly List of East European Accession (EEAI) LC, Vol. 8, no. 3
March 1959 Unclass.

MIRICA, Gh., ing.

Present task of the pisciculture research in the Danube Delta.
Meteorologia hidrol gosp 6 no.4:274-281 '61.

STANCIU, B.; CONTYIU, Ion, sef de brigada; MIRICA, Ion, maistru;
ANTONOV, Haralambie, ing.

Pride in being a front-ranker. Constr Buc 16 no. 740:3
14 March 1964.

MIRICH, B., inzhener.

Automatic control of the engine's lubrication system. Avt.transp.
32 no.6:35 Je '54. (MLRA 7:9)
(Automobiles--Lubrication)

MIRICH, B., inzhener.

Efficiency suggestions in the First Automobile Repair Plant in
Omsk. Avt.transp. 33 no.3:22-24 Mr '55. (MLRA 8:5)
(Omsk - Automobiles - Repairing)

MIRIDZHANYAN, R.T.

Geologic effectiveness of electric logging of ore deposits in the
Armenian S.S.R. Izv. AN Arm. SSR. Geol. i geog. nauki 14 no.3: 3-50
'61. (MIRA 14:8)

1. Geofizicheskaya ekspeditsiya Upravleniya geologii i okhrany nedr
pri Sovete Ministrov Armyanskoy SSR.
(Armenia--Electric prospecting)

MIRIDZHANYAN, R.T.

Geothermal regionalization of the Armenian S.S.P. Izv. AN Arm.
SSR. Nauki o zem. 18 no.3/4:67-74 '65. (MIRA 18:9)

1. Gosudarstvennyy proizvodstvennyy geologicheskiy komitet
Armyanskoy SSR.

MIRIKIS, I.M.

Investigating the work of rectangular clarifiers of the Yaroslavl
water-supply line. Vod. i san. tekhn. no.7:20-22 JI '61.
(Yaroslavl--Water--Purification) (MIRAL:7)

SZAJEWSKI, Janusz; GRADOWSKA, Liliana; JUSKOWA, Joanna; MIRIKOWSKA, Ewa

Effect of corticosteroids on blood lipids. II. Effect of a brief administration of corticosteroids on blood lipids in dogs before the onset of methylthiouracil and cholesterol treatment and 2 months after their administration. *Polskie arch.med.wewn.* 30 no.7:950-953 '60.

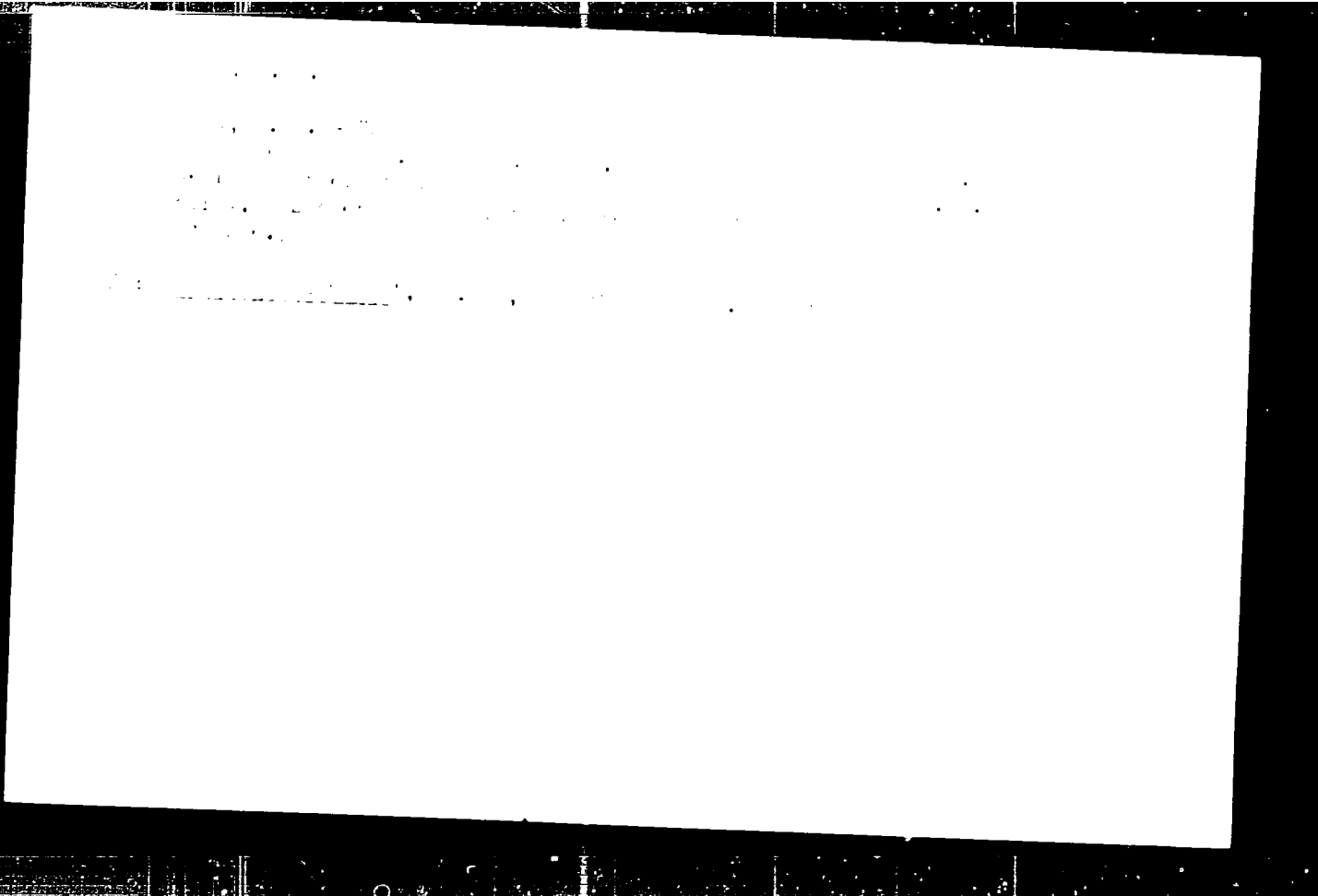
I. Z I Kliniki Chorob Wewnętrznych A. M. w Warszawie Kierownik:
Prof. dr med. A. Biernacki.

(LIPIDS blood)

(ADRENAL CORTEX HORMONES pharmacol)

(CHOLESTEROL pharmacol)

(THIOURACIL pharmacol)



MIRIMANOV, G.I.; BURCHULADZE, Sh.V.

Testing the strength of a 22-meter sectional metal drilling rig.
Razved. i okh nedr 22 no. 10:62-64 0 56. (MLRA 9:12)

1. Trest Kavkazuglegeologiya
(Boring machinery)

AUTHOR: Mirimanov, G.I., Candidate of Technical Science, and Burchuladze, Sh.V.,
Candidate of Technical Science. 97 - 1 - 9/10

TITLE: Testing the Strength of Assembled Reinforced Concrete Frames
Tenon Joints. (Ispytaniye prochnosti shipovykh soyedineniy uzlov
sbornykh zhelezobetonnykh ram).

PERIODICAL: Beton i zhelezobeton, 1957, No. 1, pp. 30-32. (U.S.S.R.)

ABSTRACT: The Tbilisi Scientific and Research Institute for Construction
and Water-Power Engineering (Tbiliskiy nauchno-issledovatel'skiy
institut sooruzheniy gidroenergetiki) carried out experiments on
a new type of joints for reinforced concrete frames designed by
members of the Soviet Ministry of Power (B.A. Zubovi, M.N. Bagin,
A.B. Chechelev and M.A. Zubova). The characteristics of this
construction lie in the replacement of the older type of frame-
joint by an assembled tenon joint. The joint is assembled and
grouted with expanding cement. The strength of the grout was found
to be 102 - 113 kg/cm². Different variants of this joint were
tested, by mounting the testing apparatus across the angle of the
joint under the application of 6.100 - 8.200 kg. Cracks appeared in
the cement grout. When 6.200 - 12.600 kg were applied, cracks also
appeared on the tenon. During the final breaking phase the tenon

Card 1/2

TITLE:

97 - 1 - 9/10
Testing the Strength of Assembled Reinforced Concrete Frames
Tenon Joints. (Isipyaniye prochnosti shipovykh soyedineniyuzlov
sbornykh zhelezobetonnykh ram).

was pulled out from the joint. The shear stress during this phase was between 11.8 - 21.73 kg/cm². It was concluded that the above type of tenon joint, stiffened by the expanding cement grout, could withstand bending moments from 8360 - 13750 kgm. The incorporation of steel lugs does not add to the strength of the joint. Instead it is recommended to use wedge-shaped grooves which improve the strength of the joint. If tests leading up to breaking point the tenon was pulled out with the cement grout. These joints should prove of great value to the building industry.

There are 2 photographs and 1 drawings.

ASSOCIATION: ---

PRESENTED BY: - -

SUBMITTED: ---

AVAILABLE: Library of Congress

Card 2/2

MIRIMANOV, G.I., kand.tekhn.nauk; ELBAKIDZE, M.G., kand.tekhn.nauk

Power center for model tests of arch dams. Gidr. stroi. 30
no.9:50-57 S '60. (MIRA 13:9)
(Dams) (Hydraulic models)

MIRIMANOV, G.I.

Manufacturing short cylindrical concrete specimens. Zav.lac.
28 no.3:377-378 '52. (MIRA 15:4)

1. Tbilisskiy nauchno-issledovatel'skiy institut sooruzheniy i
gidroenergetiki,

(Concrete--Testing)

SHTENGEI'MEYER, S.V.; SMIRNOV, A.M.; SUBBOTIN, A.I.; KAGASOV, V.M.;
GRINKIN, G.K.; BEREZINOV, I.A.; MIRIMANOV, G.I.

Exchange of experience. Zav. lab. 28 no.9:1142-1144 '62.
(MIRA 16:6)

1. Institut metallurgii Ural'skogo filiala AN SSSR (for Shtengel'meyyer).
2. Gor'kovskiy politekhnicheskii institut (for Smirnov, Subbotin).
3. Karagandinskiy metallurgicheskii zavod (for Kagasov, Grinkin).
4. Tbilisskiy nauchno-issledovatel'skiy institut sooruzheniy i gidroenergetiki (for Mirimanov).
(Scientific apparatus and instruments)

MIRIMANOV, G.I., kand.tekhn.nauk

Determining the tensile strength of concrete by splitting
cylindrical samples. Bet.1 zhel.-bet. 9 no.5:225-226 My '68.
(Concrete--Testing) (MIRA 16:6)

MIRMANOV, I. G.

"Shear Strength of Grounds as a Stability Factor of Earth
Masses in Landslides." Sib 2 Feb 51, Moscow Order of Lenin
State University V. V. Lomonosov.

Dissertations presented for science and engineering degrees
in Moscow during 1951.

SC: Sum. No. 480, 2 May 55

MIRIMANOV, I., kand.tekhn.nauk.

Apparatus for the determination of moisture content in clays.

Mast. ugl. 6 no.12:11 D '57.

(Hygrometer)

(MIRA 11:1)

MIRIMANOV, I.G.

Some physicommechanical properties of Akhaltsikhe clay rocks.
Trudy Inst.gor.dela AN Gruz.SSR 2:103-109 '60. (MIRA 14:10,
(Akhaltsikhe region--Clay)

MIRIMANOV, I.G.

Mobility of clay soils. Soob. AN Gruz. SSR 24 no.6:697-704 Je '60.
(MIRA 13:9)

1. AN GruzSSR, Institut gornogo dela, Tbilisi. Predstavleno
chlenom-korrespondentom Akademii F.N.Tavadze.
(Clay) (Earth movements)

MIRIMANOV, I.G.

Studying the composition of exchange cations from the Akhaltsikhe
clay rocks. Soob. AN Gruz. SSR 27 no.3:321-324 S *1.
(MIRA 15:3)

1. Akademiya nauk Gruzinskoy SSR, Institut gornogo dela imeni
G.A.TSulukidze, Tbilisi. Predstavleno chlenom-korrespondentom
AN GruzSSR F.N.Tavadze.

(Akhaltsikhe regione--Clay) (Ion exchange)

MIRIMANOV, R. (Baku)

Spring diaphragm. Sov.foto 21 no.8:26 Ag '61.
(Cameras)

(MIRA 14:8)

MIRIMANOV, R. G.

Candidate of Technical Sciences, author of the article "Existing Criteria of Frequency Regulation in Large Power Associations and an Analysis of Their Usefulness in the Construction of Regulators," Automatica and Telemechanics, Vol. 6, No. 4-5, 1941.

MIRIMANOV, R. G.

PA 62T98

USSR/Physics
Electromagnetic Waves
Mathematics - Equations, Maxwell's

Apr 1940

"Solution of the Problem of the Diffraction of a Plane
Electromagnetic Wave From a Paraboloid of Rotation of
Indefinite Dimensions With the Aid of Laguerre's Func-
tion," R. G. Mirimanov, Inst Automatics and Telemekh,
Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 2

Presents mathematical formulas for making subject cal-
culations. Two categories: 1) for system of parabolic
coordinates connected by angular coordinates, and 2)
discussion of Maxwell's equation. Submitted by Acade-
mician B. A. Vvedenskiy, 24 Feb 1948.

62T98

Handwritten notes:
Nov 21 1948

MIRIMANOV, R. G.

PA 77799

Ussr/Physics
Electromagnetic Waves
Reflectors

Apr 1948

"The Solution of the Problem of the Diffraction of a Spherical Electromagnetic Wave From a Paraboloid of Rotation of Indefinite Dimensions," R. G. Mirimanov, Izv Akad Nauk SSSR, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol IX, No 3

Interesting factors in electrodynamics are spherical waves caused by electrical or magnetic dipoles. Disturbances where waves, caused by an electrical dipole, are brought into focus of a rotating paraboloid of indefinite dimensions, until axis of dipole is perpendicular to axis of paraboloid. Submitted by Acad B. A. Vedenskij 17 Feb 1948.

Nov 60 357-360, 1948

77799

MIRMANOV, R. G.

PA 11/497101

USSR/Physics
Waves, Electromagnetic
Fields, Electromagnetic

Aug 48

"Diffraction of a Spherical Electromagnetic Wave
Around a Round Disk," R. G. Mirmanov, Inst of
Automatics and Telemekh, Acad Sci USSR, 3 1/2 pp

"Dok Ak Nauk SSSR" Vol LXI, No 4

Mathematical treatment of problem. Concludes there
is a symmetrical central cone in which field in-
tensity is large. This "radiant region" has a
diameter of the order of the wave length when
directly behind the disc, and increasing diameter

11/497101

USSR/Physics (Contd)

Aug 48

as its distance from disc increases. Around
"radiant region" there is a symmetrical region in
which field intensity is considerably lower. This
region is termed "physical shadow" as distinct
from geometrical shadow, which is a truncated cone
whose generatrix passes through the source.
Submitted 9 Jun 48.

Nov 61 617-620, 1948

11/497101

MIRMANOV, R. G.

Mirmanov, R. G. On a new method for the solution of problems on the reflection of electromagnetic waves from thin unbounded surfaces of finite curvature. Doklady Akad. Nauk SSSR (N.S.) 60, 641-644 (1949). (Russian)

In the region exterior to a given homogeneous body the scalar potential of a field with given angular frequency $\omega = kc$ must satisfy a certain integral equation in which the kernel $e^{-k|r-r'|}/|r-r'|$ appears. The body is supposed to be of uniform thickness so small that the effect of the lateral surface is negligible. By making use of the boundary conditions, and expanding the potential at an internal point in Taylor's series containing its value and derivatives at a surface point on the same normal, a method is obtained for solving in successive approximations, with the thickness as the small parameter. The zeroth approximation is taken to be the potential of a given point source. A similar calculation can be made with components of the vector potential or the Hertzian potential. The method makes no use of the assumption of ideal conductivity and employs the exact boundary conditions. On the other hand, it depends on the rapid convergence of the Taylor series, and this is not considered by the author. In many important cases, such as those involving metal reflectors, suitable convergence is not to be expected.

W. H. Furry (Cambridge, Mass.)

Source: Mathematical Reviews.

Vol 10, No. 10

MIRMANOV, R. G.

Mirmanov, R. G. The diffraction of a spherical electro-
 magnetic wave by a thin spherical segment. Doklady
 Akad. Nauk SSSR (N.S.) 67, 65-67 (1949). (Russian)
 In a previous paper [same Doklady (N.S.) 66, 641-644
 (1949); these Rev. 10, 764] the author presented a general
 solution, valid to the first order in the thickness, for the
 reflection of electromagnetic waves from thin open surfaces
 of finite curvature (and uniform thickness). The method is
 here applied to the case of a spherical segment, with the
 source of the waves at the center of the sphere. The source
 is a point dipole directed either parallel or perpendicular to
 the axis of symmetry. The solution is obtained formally as
 an infinite series involving zonal harmonics and Bessel and
 Hankel functions. Mention is made of the requirement that
 the conductivity is finite, which was not explicitly recognized
 in the earlier paper.
 W. H. Furry (Copenhagen).

SMH

Source: Mathematical Reviews, 1950 Vol 11 No. 2

MIRIMANOV, R. G.

Mirimanov, R. G. The diffraction of a spherical electromagnetic wave from a paraboloid of revolution of finite extent, the dipole emitting the field lying along the axis of symmetry of the paraboloid. Doklady Akad. Nauk SSSR (N.S.) 67, 835-838 (1949). (Russian)

The author's general method [same Doklady (N.S.) 66, 641-644 (1949); these Rev. 10, 764] for diffraction by bodies of small constant thickness ("surfaces") and finite conductivity, previously applied to the case of a spherical segment [see the preceding review], is applied here to another special case. The formal solution in infinite series is obtained.

W. H. Furry (Copenhagen).

2000

OTW
2000

Mathematical Reviews, 1950 Vol. 11 No. 1

MIRMANOV, R. G.

Mirmanov, R. G. On the solution of a general problem of applied electrodynamics. Doklady Akad. Nauk SSSR (N.S.) 71, 879-882 (1950). (Russian)

The problem is that of a homogeneous medium containing sources and also homogeneous diffracting bodies of arbitrary shape. Starting from methods of Stratton and Chu [Physical Rev. (2) 56, 99-107 (1939)] the author finds the following integral equation for the resultant field:

$$E(r) = E_0(r) + (4\pi)^{-1} (\mu_0 k_0^2 / \mu_0 k_0^2 - 1) \int (n \cdot E(r')) \text{grad } \phi \, dS,$$

with a corresponding magnetic equation, where $E_0(r)$ is the primary field and ϕ has the form $e^{ik_0 R}/R$. The surface integral is taken over the surfaces of separation and can, according to the author, be interpreted as a dipole distribution. There are applications to the cases of an infinite conducting plane and of a thin unclosed shell of general shape. [Reviewer's comments: It is not apparent whether the author is using the same or different ϕ 's for the various regions. The point is made clear by C. Müller [Arch. Math. 1, 296-302 (1947), p. 301; these Rev. 11, 293]; cf. also W. von Ignatowsky [Ann. Physik (4) 18(323), 495-522 (1905), p. 505]. Furthermore, the surface integral forming the secondary field has the form of a gradient, and cannot represent any appropriate electromagnetic field.] F. V. Atkinson.

enb

PMJ
R200

Mirmanov, R. G.

Mirmanov, R. G. Radiation resistance of a dipole located at the center of a thin spherical shell. Doklady Akad. Nauk SSSR (N.S.) 71, 1061-1064 (1959). (Russian)

The three media (inner sphere, shell, and outer region) have arbitrary electromagnetic parameters, none apparently being perfect conductors. From the exact general solution is derived a solution correct to the first power of the shell thickness, assuming that the inner and outer media are the same. A complicated expression is then found for the mean energy flow at large distances from the source. Apart from the latter result, the problem and approach are those of Keller and Keller [J. Appl. Phys. 20, 393-396 (1949)]; these [Reviewer's comments. The condensed exposition and numerous misprints make it difficult to check the results. The author works with a radial Hertz vector, and assumes that its divergence, i.e., the scalar potential with reversed sign, depends only on r . This would seem to lead to a null field; however, only one of the field-vectors is evaluated, and that is equated to a scalar quantity (equation (14)). No justification is quoted for the boundary conditions on the scalar potential, which are $\psi|_{r=a} = \psi|_{r=b} = \epsilon_0(\partial\psi/\partial r)|_a$, as in electrostatics.] F. V. Atkinson (Ibadan).



Source: Mathematical Reviews, Vol. 11 No. 9

MIRIMANOV, R. G.

Mirimanov, R. G. The diffraction of spherical electro-
 magnetic waves from a thin conical surface of bounded
 dimensions. Doklady Akad. Nauk SSSR (N.S.) 73, 693-
 696 (1950). (Russian)

The author's general method [same Doklady (N.S.) 66,
 641-644 (1949); these Rev. 10, 764] for diffraction by bodies
 of infinitesimal constant thickness and finite conductivity
 is applied to obtain a formal solution in series for another
 special case. The source is an electric dipole lying in the axis
 of the cone and oriented parallel to it. By taking the angle
 of the cone to be $\frac{\pi}{2}$, the case of a circular disk can be
 obtained.

W. H. Furry (Cambridge, Mass.)

Source: Mathematical Reviews,

Vol. 12 No. 7

Handwritten initials/signature

MIRIMANOV, R. G.

Mirimanov, R. G. The complex radiation resistance of an antenna system in the presence of electromagnetic interaction with another antenna system. Doklady Akad. Nauk SSSR (N.S.) 73, 1177-1179 (1950). (Russian)

21

Siano S_1 e S_2 rispettivamente le superficie dei riflettori dell'antenna trasmittente e di quella ricevente, S_0 sia una superficie chiusa di cui fanno parte S_1 e S_2 e che contenga al suo interno le due antenne. Sia E_1, H_1 il campo generato dalla corrente I nell'antenna trasmittente in assenza della ricevente e E_2, H_2 il campo che la stessa corrente nella trasmittente genererebbe all'interno della superficie S_0 , supposta conduttrice perfetta. Si ponga $Z_0 = (2I_0 I_0^*)^{-1} \int_{S_1} I^* E_2 \cdot dl$ essendo l'integrazione estesa all'antenna trasmittente l e avendo indicato con I_0 il valore che I assume in un punto prestabilito di essa. Allora una semplice applicazione del lemma di Lorentz permette di trovare l'impedenza Z dell'antenna trasmittente in presenza della ricevente

$$Z = Z_0 + \frac{c}{8\pi I_0 I_0^*} \int_{S_2-S_1} E_1 \times H_2^* \cdot dS + \int_{S_0} (E_1 \times H_2^* + E_2^* \times H_1) \cdot dS$$

Qui Z rappresenta una superficie interna a S_0 , che racchiude l'antenna trasmittente. G. Toraldo di Francia (Firenze).

Source: Mathematical Reviews,

Vol. 12 No. 6

SH

CP

BR

MIRMANOV, R. G.

USSR/Physics - Radiation Resistance
of Dipole

11 Sep 51

"Radiation Resistance of a Dipole Near a Well-Conducting Ellipsoid of Revolution," R. G. Mirmanov, Inst of Automatics and Telemech, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXX, No 2, pp 189-192

Finds the resistance of dipole radiation and the power radiated into space through the surface surrounding a confocal spheroid system for various dispositions of the dipole (e. g., dipole placed perpendicular to the axis of symmetry of the ellipsoid, dipole placed on the axis of symmetry of the ellipsoid of revolution). Submitted by Acad B. A. Vvedenskiy 30 Jul 51.

221T85

MIRIMANOV, R. G.

USSR/Physics - Electromagnetic Field
(Wave Guide) 21 Sep 51

"A Method for Determining the Electromagnetic Field Inside a Close Spherical Shell, Part of Which Possesses Different Dielectric Permeability," R. G. Mirimanol, Inst of Automatics and Telemech, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXX, No 3, pp 361-364

Considers a thin dielec shell of radius a whose complex dielec permeability at any point is a func- tion of the angular coordinates. Reduces the eqs of the electromagnetic field (Maxwell's eq in wave

USSR/Physics - Electromagnetic Field 21 Sep 51
(Wave Guide) (Contd) 210792

guide theory) to the soln of a linear differential eq in t with const coeffs, which is amenable to ordinary methods. Submitted 30 Jul 51 by Acad B. A. Vvedenskij.

Nov 80, 301-304 1951

210792

MIRIMANOV, R. G.

Survey of Foreign Literature: The Use of Decimeter and Centimeter Radio Relay Lines in the Telemechanical Installations of Large Power System Combines, R.G.Mirimanov and V.T. Sviridov, Avtomak i Telemek, Vol 13, no 5, pp 592-610, Sep/Oct 52.

Survey of radio relay lines, including a general discussion of such lines and descriptions of several US lines, namely the Boston-New York line, the trans-continental line, and the Bonneville Power System line. Lists 14 US sources.
256771

MIRIMANOV, R.G.; SVIRIDOV, V.F.

Review of foreign literature on the use of microwave radio relays
in remote-control units of high-power pool systems. Avtom. i telem.
14 no.1:59-87 Ja-P '53. (MLRA 10:3)
(Remote control) (Microwaves)
(Electric power distribution)

MIRMANOV, R. G.

7
 3
 REF

(SIR 194, 197, 200, 202) (RUS 192)
 Fertilizer with Low Levels of U.S.P.
 R. G. Mirmanov, E. G. Lashin & N. V.
 Symonov (Zhuravskaya) (Zhuravskaya)
 May 1956, Vol. 1, No. 8, pp. 681-682. A
 brief note on fertilizers containing some, or
 all, of the following: P_2O_5 , MgO , MnO_2
 and calcium titanate. The total nitrogen, in %
 is about 10% in the 3-cm X band, it varies
 between about 0.4 and 0.6 for the different
 fertilizers and 2 between 0.6 and 3%.

for RS
 along

MEMO NOV 5 1956

21.372.8
 Gyrotropic Infinitely Long
 Cylindrical Waveguide - R. G.
 Admanov & G. G. Lomov (Radio
 Zhurnal i Elektronika, Sept. 1956, Vol. 1,
 No. 9, pp. 1195-1221.) Review of theory
 of e.m. wave propagation in cylindrical
 waveguides, completely filled with ferrite
 in the presence of longitudinal and transverse
 magnetizing fields. 19 references,
 including six in Russian literature.

1-484c

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BT

MIRIMANOV, R G

✓ 621.372.8

2-1958

A New Type of Waveguide with
Diaphragms - R. G. Mirimánov & G. I. Zhileiko
(*Radiotekhnika i Elektronika*, Oct.
1956, Vol. 1, No. 10, pp. 1374-1377)
Coaxial waveguides with diaphragms are
discussed theoretically.

3

BT any

MIRIMANOV, R. G., and ANISIMOVA, Y. V., Institute of Radio Techniques and
Electronics

"Guide cylindrique rempli partiellement de ferrite employe comme un systeme
a retard," a paper submitted at the International Congress on Ultra High Frequency
Circuits and Antennas, Paris, France, 21-26 Oct 57.

SO:C-3,800,391

AUTHOR

MIRIMANOV, R.G., ZHILEYKO, G.I.

TITLE

Analysis of diaphragmed wave-guides of certain types

PA - 2573

PERIODICAL

(Analiz nekotorykh tipov diafragmirovannykh volnovodov Russian.)
Radiotekhnika i Elektronika, 1957, Vol 2, Nr 2, pp 172-183 (USSR)

Received 4/1957

Reviewed 6/1957

ABSTRACT

A survey of the work carried out is given. The results of this work are used for the determination of fundamental technical characteristics of the different wave conductor systems. On the basis of these characteristics the efficiency of the systems is estimated from the point of view of their application in modern technology, e.g. for the acceleration of elementary particles and for the amplification of electromagnetic high-frequency oscillations. The present work, at the same time, deals with a new coaxial waveconductor system as well as with its approximated theoretical investigation which is sufficient for the determination of the fundamental technical characteristics. The qualitative analysis of the diaphragmatized wave conductors makes it possible to draw the following conclusions:

1. In the case of low currents in the electron beam (up to 0.1A) and if it is necessary to obtain important phase velocities of the wave, it is advisable to use a well investigated cylindrical wave conductor with disks.
2. If, in the case of large phase velocities of the wave stronger currents (some ampères) have to be used in the electron beam two systems, according to the required shape of the beam, may

Card 1/2

Analysis of diaphragmed wave-guides of certain types. PA -2573
be applied : the coaxial wave conductor with disks upon two conductors and a rectangular wave conductor with two cogs. The advantage of these types of wave conductors consists in a low non-uniformity of the field E_z . When selecting the type of the wave conductor also the influence exercised by the edge of the diaphragm of the wave conductor upon the possible increase of losses must be taken into consideration.
3. In the case of low and average currents in the beam and at not too high phase velocities a rectangular wave conductor with a crest which is distinguished by a more simple construction but demands stronger magnetic fields for the purpose of focussing may be used.
(1 table, 2 ill. 7 citations from Slav Publications).

ASSOCIATION
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Card 2/2

9/1956
Library of Congress

109-7-4/17

AUTHORS: Mirimanov, R.G., Anisimova, Yu. V.

TITLE: Circular Waveguide Partly Filled with a Ferrite as a Delay System. (Kruglyy volnovod, chastichno zapolnenny ferritom, kak zamedlyayushchaya sistema).

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol.II, Nr 7, pp. 843-855 (USSR)

ABSTRACT: It is known that the phase velocity of the electromagnetic waves in the normal waveguides with ideally conducting surfaces is greater than the velocity of light. However, it is very difficult to produce an interaction of an electron beam with an incident electromagnetic wave in such a waveguide. Consequently a number of attempts have been made during the last few years by the scientists of various countries to obtain waveguide systems in which the phase velocity is effectively attenuated. A large number of such systems is already known and has found application in travelling wave tubes and backward wave tubes operating at the centimetre wavelengths. A waveguide whose internal walls are coated with a layer of a ferrite material (see Fig.1) can also be used as a system with reduced phase velocity. The Maxwell equations for the

Card 1/3

109-7-4/17

Circular Waveguide Partly Filled with a Ferrite as a Delay System.

the system are considered and it is shown that the electromagnetic fields in its internal region (see Region 1 of Fig.1) can be expressed by Eqs.(11) and (12). These equations have to fulfil boundary conditions expressed by Eqs.(13) to (18), from which a transcendental equation for the propagation constant of the system is derived (see Eq.(26)). The parameters of this equation are expressed by Eqs.(27) to (44). Eq.(26) is referred to as the dispersion equation and it is applicable to a large class of waveguide systems. It can be considerably simplified for a number of limiting cases, such as when the layer of ferrite is very thin (Eqs.(46) and (47)), when the ferrite medium fills the whole waveguide (Eq.(48)), or when the magnetising field is absent (Eqs.(54) and (55)). The original equations are also employed to determine the power flow along the axis of the waveguide and the resulting expression for the Region 1 (see Fig.1) is given by Eq.(57). For the Region 2 (see Fig.1) the power flow can be determined from Eq.(58). The formulae for the power flow are employed to determine the energy transfer and the electrical field component E_z across the waveguide and the resulting values are plotted in Figs.2, 3, 4, 5, 6 and 7. The Figs.4 and 5 show that a considerable part of the transmitted power

Card 2/3

109-7-4/17

*Circular Waveguide Partly Filled with a Ferrite as a Delay System.
passes across the ferrite medium.
There are 7 figures and 4 references, 2 of which are Slavic.

SUBMITTED: August 27, 1956.

AVAILABLE: Library of Congress.

Card 3/3

AUTHOR: Mirimanov, R. G.

30-58 5-20/36

TITLE: On Some Problems of the Production of Millimeter and Submillimeter Waves (O nekotorykh problemakh generatsii millimetrovykh i submillimetrovykh voln)

PERIODICAL: Vestnik Akademii Nauk SSSR, 1958,
(USSR)

Nr 5, pp 88-94

ABSTRACT: The most powerful sources of millimeter waves are the magnetrons. Their power in the impulse in the long-wave range attains 100kw. But they are not suitable for waves below 3 mm. The klystron is used as a second source of waves. It is, however, inferior to the magnetron with regard to the efficiency and the attainable power which only amounts to several watts. The tubes LBV and LOB are also used for it, but on this occasion difficulties with the retarding system occur. V.L. Ginzburg suggested methods for the production of millimeter and submillimeter waves in which the Doppler and Cherenkov effect are used, but there still exist difficulties in the acceleration technique. A similar system was suggested by the authors of this article as well as by G.I. Zhileyko. In this connection the most difficult problem is the formation of the ionic current. The author as well as D.A.

Card 1/2

On Some Problems of the Production of Millimeter and
Submillimeter Waves

30-58-5-20/36

Yakovlev made a proposal concerning this problem. G.I. Budker and A.A. Naumov also made proposals on improved cyclic electron accelerators. In the course of the last years researches on the possibility of the use of plasma for the production of millimeter waves were performed in many countries. But for this purpose unusually high concentrations of electrons must be attained in the plasma, which was hitherto not possible. Many generating systems, like for instance the molecular generators, were recently produced. Very promising are the systems in which paramagnetic spins are used. At the end the author states that the systems mentioned are by far not to be considered the only ones. On the contrary, new systems of quantum generators and amplifiers are to be expected in the near future. There are 9 references, 2 of which are Soviet.

Card 2/2

1. Microwaves--Propagation
2. Magnetrons--Performance
3. Klystrons--Performance
4. Ionic current--Propagation

AUTHORS: Mirimanov, A.G., Orlov, L.G.

TITLE: Some Titanate Ferrites with Ultra-High Permittivity and Large
Circular Faraday Effect (Vysokopermittivnye i opticheski aktivnye
oksidy titanata)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol. 11, No. 1,
p.155 (USSR)

ABSTRACT: Some work was done towards increasing the permittivity
of Mg-Fe ferrite by adding to them a quantity of TiO_2
which has $\epsilon = 140$ and $\tan \delta = 5 \times 10^{-5}$ at a wavelength
of 3.2 cm. Curves of μ and ϵ as a function of
titanate content are shown in Fig. 1. Fig. 2 presents
the Faraday effect in a cylindrical waveguide for the
ferrites with various titanate contents. The author
gives 2 figures and 3 Russian references.

SUBMITTED: April 11, 1957

AVAILABLE: Library of Congress

Card 1/1

SOV/109-3-7-21/ 3

AUTHOR: Mirmanov, R. G.

TITLE: The Method of Finite Conductivity in the Diffraction Theory of Electromagnetic Waves (O metode konechnoy provodnosti v teorii difraktsii elektromagnitnykh voln)

PERIODICAL: Radiotekhnika i elektronika, 1950, Vol 5, Nr 7, p: 971-972 (USSR)

ABSTRACT: In 1947 the author became acquainted with a paper by H. Primakoff and I. B. Keller (Ref.1), which was devoted to the investigation of the reflection of sound. The author became aware that the method used by Primakoff and Keller could be advantageously employed in the solution of the electromagnetic wave problems. In 1948 an attempt was made by the author to solve a number of diffraction problems and since then he applied the method for solving a number of different problems (see Refs.2-7). In 1950 I. B. Keller published a paper in which he applied the method of his work from 1947 to the solution of a number of electrodynamic problems. Though the mathematical apparatus employed by Keller in his second paper is different from that used by the author, the latter is of the opinion that the finite conductivity method should bear the name of the Primakoff-Keller method; only by

Card 1/2

107/109-3-7-21/73

The Method of Finite Conductivity in the Diffraction Theory of
Electromagnetic Waves

using their method of solving the integral-differential equation was the author able to solve very successfully a number of electromagnetic wave problems. The paper contains 9 references, 2 of which are English and 7 Soviet. (All the Soviet references relate to the previous papers published by the author).

1. Electromagnetic waves--Diffraction
2. Diffraction--Theory
3. ~~Mathematics~~

Card 2/2

MIRIMANOV, R.G., kand.tekhn.nauk, red.; MOGILEVSKIY, Yu.A., red.;
KLIMENKO, S.V., tekhn.red.

[Millimeter and submillimeter waves; a collection of articles]
Millimetrovye i submillimetrovye volny; sbornik statei. Moskva,
Izd-vo inostr.lit-ry, 1959. 607 p. (MIRA 12:5)
(Microwaves)

MAGAK'YAN, A.K.; MIRIMANOVA, L.S.

Characteristics of some types of xerophytic plants on the sedimentary terrains of the Sisian District, Armenian S.S.R. Izv.AN Arm.SSR.Est.nauki no.6:25-34 '47. (MLRA 9:8)

1. Chlen-korrespondent AN Armyanskoy SSR (for Magak'yan). (Armenia--Xerophytes)

MAGAK'YAN, A.K.; MIRIMANOVA, L.S.

Alpine meadows with Parve sedge in Akhta District. Izv. AN Arm. (MLBA 9:8)
SSR. Biol. i sel'khoz. nauki. 4 no. 10:935-942 '51.

1. Yerevanskiy zooveterinarnyy institut.
(Akhta District--Pastures and meadows) (Sedges)

MARTINSON, Ye.N.; ALASHKEVICH, M.L.; MIRIMANOVA, V.I.; SHIRYAYEV, A.T.

Vacuum distillation units for separating substances having high boiling points. Prib.1 tekhn. eksp. no. 2:133-136 S-0 '56. (MLRA 10:2)

1. Nauchno-issledovatel'skiy vakuumnyy institut.
(Vacuum apparatus) (Distillation apparatus)

ACC NR: AP7001954 (A) SOURCE CODE: UR/0120/66/000/006/0157/0160

AUTHOR: Alashkevich, M. L.; Mirimanova, V. I.

ORG: none

TITLE: Attaining a 10^{-9} -torr vacuum with polyphenyl-ester steam-ejector pumps without refrigerated trap

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1966, 157-160

TOPIC TAGS: diffusion pump, high vacuum pump, vacuum ejector pump

ABSTRACT: The results are reported of studying some physico-chemical and vacuum characteristics of mixtures of isomers of a pentacyclic polyphenyl ester synthesized in the All-Union Scientific Research Institute of Petroleum Refining. The esters were tested in a 3-stage Soviet-made N-1S-2 metal pump and in a 3-stage glass pump (hookups shown). After 70-hr heating at 400C and subsequent

Card 1/2

UDC: 621.527.5