

TOMASSI, Witold; JANKOWSKA, Helena; WOJTOWICZ, Jan; MILEK, Ryszard

Studies on the reduction of the potentials of electrodes and
of the voltage of electrolysis.. Przem chem 39 no.3:160 Mr '60.

1. Katedra Chemii Fizycznej, Politechnika, Warszawa

RISTIC, Jovan; NIKOLIC, M. Tisav; RIBKIC, Pavle

Symptomatology and clinical aspects of vertebro-basilar insufficiency. Srpski arh. celok. lek. 90 no.11:1029-1036
1967.

1. Neuropsihijatrijska Klinika Medicinskog fakulteta
Univerziteta u Beogradu (Upravnik: prof. dr. Uros Jekic).

MILEKHIN, A.N., inzh.

Laying foundations under piston compressors. Prom. stroi.
42 no.12:51-52 D '64. (MIRA 18:3)

1. Trest Kemerovokhimstroy.

Milekhin, G.A.

409 ent

✓ 833. **MULTIPLE PRODUCTION OF PARTICLES IN THE COLLISIONS OF HIGH ENERGY NUCLEONS WITH NUCLEI.** 830.145
S.Z. Belen'kil and G.A. Milekhin.
 Zh. eksper. teor. ~~fiz.~~ No. 1(7), 20-32 (1955). In Russian. English translation in: Soviet Physics JETP (New York), Vol. 1, No. 1, 14-22 (Jan. 1956).

The collisions of high-energy nucleons with nuclei are examined in a statistical theory of the multiple production of particles. The relation is calculated between the entropy of the nucleon-nucleus system (as determined by the initial stage of the collision), and the number of particles resulting when the system flies apart into individual particles. The entropy of the system is calculated using relativistic hydrodynamics. The dependence of the number of produced particles on the energy of the incident nucleon and on the atomic weight of the nucleus is found.

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Physics*

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*Physics Inst. im P. N. Lebedev, AS USSR
 Moscow State Univ.*

MILEKHIN, G.A.; ROZENTAL', I.L.

Hydrodynamical interpretation of a characteristic of large showers
recotded in photographic emulsions [with summary in English]. Zhur.
eksp. i teor. fiz. 33 no.1:197-199 J1 '57. (MLRA 10:9)

1. Fizicheskiy institut im. P.M. Lebedeva Akademii nauk SSSR.
(Cosmic rays)

MILEKHIN, G.A.

AUTHOR: MILEKHIN, G.A., ROZENTAL', I.L. 56-7-28/66
TITLE: Hydrodynamical Interpretation of a Characteristic of Large Showers Recorded in Photographic Emulsions. (Gidrodinamicheskaya interpretatsiya odnoy kharakteristiki bolshikh livney, zaregistririvannykh v fotoemul'sii, Russian)
PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 33, Nr 7, pp 197-199 (U.S.S.R.)
ABSTRACT: The experimental distribution of the transverse components of the momenta of secondary particles is compared with the predictions of the hydrodynamic theory of the multiple formation of particles. It was shown that the conclusions of the onedimensional variety of this theory agree well with experimental data if a final temperature of $T_E = mc^2/k$ (m = mass of the π -meson) is assumed. This agreement makes it possible to make statements concerning the character of $\pi - \pi$ -interaction. (With 1 Illustration and 5 Slavic References).
ASSOCIATION: Physical Institute "P.N.LEBEDEV" of the Academy of Sciences of the U.S.S.R. (Fizicheskiy institut im. P.N.Lebedeva Akademii nauk SSSR)
PRESENTED BY:
SUBMITTED: 11.1.1957
AVAILABLE: Library of Congress
Card 1/1

24(5)
AUTHOR: Milekhin, G. A. SOV/50-35-4-2751

TITLE: On the Hydrodynamical Theory of the Multiple Production of Particles (K gidrodinamicheskoy teorii mnozhestvennogo obrazovaniya chastits)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 4, pp 978 - 981 (USSR)

ABSTRACT: Landau (Ref 1) developed a hydrodynamical theory of multiple production for collisions of two equal particles of very high energy; for the angular- and energy distribution symmetry is found in the center of mass system. In the present paper it is shown that in the collision of a nucleon with a nucleus the angular- and energy distribution of secondary particles becomes nearly symmetric in a certain system of coordinates that is near the c.m.s. Calculations can easily be carried out in a system of coordinates in which the colliding particles have equal but inversely directed velocities. When investigating symmetry

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On the Hydrodynamical Theory of the Multiple Production of Particles

only the one-dimensional stage of the motion of nuclear matter is investigated. As Khalatnikov (Ref 3) has shown, an arbitrary one-dimensional motion of an ultrarelativistic medium may be described by the potential χ which satisfies the equation:

$$3 \frac{\partial^2 \chi}{\partial \eta^2} - \frac{\partial^2 \chi}{\partial y^2} - 2 \frac{\partial \chi}{\partial y} = 0, \text{ where } y = \ln(T/T_0),$$

$\eta = \text{arch } v, T$ and v denote the temperature and velocity of the medium, T_0 - initial temperature, ($c=1$).

The solution of this equation is obtained after introduction of the boundary conditions $\chi = 0$ for $\eta = \sqrt{3} y$,

and $\chi = -le^y \text{sh} \eta + t_0 (e^y \text{ch} \eta - 1)$ for $\eta = -\sqrt{3} y$, is obtained as

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On the Hydrodynamical Theory of the Multiple Production of Particles *Sov. J. Nucl. Energy* (C) **1958**, **1**, No. 1, p. 177.

$$\chi = \frac{\sqrt{3}}{2} (1-t_0 \frac{\partial}{\partial \eta}) e^y \int_{y/\sqrt{3}}^y e^{-2y'} I_0(\sqrt{y'^2 - \eta^2/3}) dy' +$$

$$+ \frac{\sqrt{3}}{2} t_0 \frac{\partial}{\partial \eta} \int_{y/\sqrt{3}}^y e^{-y'} I_0(\sqrt{y'^2 - \eta^2/3}) dy'.$$

At a collision of similar particles $t = 0$, and the solution goes over into that obtained by Khalatnikov. There are 6 references, 5 of which are Soviet.

ASSOCIATION: Fizicheskii institut im. P.N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P.N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: May 9, 1958

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10(4), 21(7), 24(5)

AUTHOR: Milekhin, G. A.

SOV/56-35-5-20/56

TITLE: Hydrodynamic Theory of the Multiple Production of Particles in Collisions Between Fast Nucleons and Nuclei (Gidrodinamicheskaya teoriya mnozhestvennogo obrazovaniya chastits pri stolknovenii bystrykh nuklonov s yadrami)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 5, pp 1185-1197 (USSR)

ABSTRACT: The hydrodynamic theory for the multiple production of mesons in collisions of high-energy particles was developed by Landau (Ref 1). In view of the great mathematical complexity of this theory, Landau contented himself with approximations; the final formulae have only logarithmic accuracy and describe collisions of homogeneous particles. For a quantitative comparison between theory and experiment greater accuracy is necessary. In investigations of collisions between nucleon and nucleus, the tube model is mostly used (Ref 3). Also the author of this paper uses this model, but with the restriction that n is 3.7 (n = ratio between tube length and nucleon dimension, approximately equal to the number of nucleons in the tube). Part of this problem,

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Hydrodynamic Theory of the Multiple Production of Particles in Collisions
Between Fast Nucleons and Nuclei

namely determination of the number of particles N_0 produced in such a collision, has already been solved by Belenkiy and Milekhin (Ref 4): $N_0 = k(n+1)E_0^{1/4}$, where E_0 is the primary energy of the nucleon in the laboratory system, and k is a constant factor. In the present paper the energy-, angular- and transverse momenta distribution of secondary particles is investigated. The symmetry investigations were already carried out in one of the author's earlier papers (Ref 5). Proceeding from an equation of motion for the system after the collision (relativistic theory of the hydrodynamics of an ideal liquid) of the form $\partial T_i^k / \partial x^k = 0$ one obtains $T_{ik} = (p+\epsilon)u_i u_k + p g_{ik}$ (p - pressure, ϵ - energy density, u^i - four-velocity, g_{ik} - the metric tensor with the components $-g_{00} = g_{11} = g_{22} = g_{33} = 1$, $g_{ik} = 0$ for $i \neq k$). The problem is investigated onedimensionally and then threedimensionally. The distribution functions calcu-

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Hydrodynamic Theory of the Multiple Production of Particles in Collisions
Between Fast Nucleons and Nuclei

lated for various n-values are shown in diagrams. The author's method is more exact than those of references 1 and 2, the possible error in the final formula amounting to only 20-25%. In conclusion, the author thanks S. Z. Belen'kiy and Ye. L. Feynberg for advice, and L. V. Pariyskaya and N. Ye. Nikulkin for carrying out numerical computations. There are 6 figures and 13 references, 11 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: May 25, 1958

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MILEKHIN, G. A., Candidate Phys-Math Sci (diss) -- "The hydrodynamic theory of the multiple formation of particles in collisions between rapid nucleons and nuclei". Moscow, 1959. 7 pp (Acad Sci USSR, Phys Inst im P. N. Lebedev) (KL, No 22, 1959, 108)

MILEKHIN, G. A.

REFINEMENT OF THE HYDRODYNAMIC THEORY OF MULTIPLE PARTICLE PRODUCTION
G. A. Milekhin

Landau's hydrodynamic theory of multiple particle production is refined and also generalized for nucleon-nucleus collisions. A study is made of the angular distribution, energy distribution and lateral momentum distribution of secondary particles. For this purpose, it is necessary to solve a complex three-dimensional hydrodynamic problem on the separation of a system which originated as a result of a fast particle collision. Due to a strong Lorentz contraction of the colliding particles, the first stage of the separation is approximately unidimensional.

It follows from the unidimensional solution that the separation of the substance becomes quasi-inertial, i.e., each element of the substance moves with practically constant speed. In view of this circumstance, it becomes possible to separate the variables with asymptotic accuracy and to single out the equations which describe the lateral separation of the substance. These equations are then solved approximately, since the lateral separation proves to have but a slight influence upon the final results.

By means of the obtained solution, the angular distribution and energy distribution of the particles are found.

The calculation of the lateral momentum distribution of particles also takes into consideration the thermal movement of particles when the system breaks up into separate particles, which, as it turns out, essentially determine the lateral momenta of the particles.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11 July 1964

21004

S/058/61/000/005/012/050
A001/0101

24.6900

AUTHOR: Milekhin, G.A.

TITLE: The particularization of the hydrodynamical theory of multiple production of particles

PERIODICAL: Referativnyy zhurnal. Fizika, no 5, 1961, 80, abstract 5B268 ("Tr. Mezhdunar. konferentsii po kosmich. lucham, 1959, v 1", Moscow, AN SSSR, 1960, 212 - 218)

TEXT: The author particularizes the hydrodynamical theory of multiple production of particles proposed by Landau and generalizes it to the case of nucleon-nucleus collision. For this purpose, the three-dimensional problem on disintegration of a system formed as a result of collision of fast particles is solved. Using the solution obtained, the author determines the angular and energy distribution of secondary particles. In calculations of particle distribution by transverse momenta, the thermal motion of particles at the instant of disintegration of the system into separate particles is also taken into account. X

G. Milekhin

[Abstracter's note; Complete translation.]

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21003

S/058/61/000/005/011/050
A001/A101

24.6900

AUTHOR:

Milekhin, G.A.

TITLE:

The analysis of possible hydrodynamical theories of multiple particle production for various equations of state

PERIODICAL:

Referativnyy zhurnal. Fizika, no 5, 1961, 80, abstract 5B267 ("Tr. Mezhdunar. konferentsii po kosmich. lucham, 1959, v 1". Moscow, AN SSSR, 1960, 223 - 229)

TEXT:

The author analyzes various hydrodynamical theories of multiple production of particles with equation of state of the form $p = c^2 \xi$, where p is pressure, ξ is energy density, c is a constant ($0 < c < 1$). He shows that at $c \rightarrow 0$, multiplicity grows with primary energy as E_1^2 and angular distribution of secondary particles approaches the isotropic one. In the other extreme case, when $c \rightarrow 1$, the number of secondary particles drops at the given primary energy (at $c = 1$ no particles are produced), the anisotropy of angular distribution of particles increases, and the fraction of energy carried away by the fastest particle ap-

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21003

The analysis of possible hydrodynamical theories...

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A001/A101

proaches 1. It is shown also that non-linear theories of scalar field, in which interaction is described by Lagrangian $L_{int} = \lambda [(\partial y / \partial y^k)^2]^n$, are equivalent, in a quasiclassical approximation, to the hydrodynamical theory with the equation of state $p = c^2 \epsilon$, where $c^2 = 1/(2n-1)$.

G. Milekhin

[Abstracter's note: Complete translation.]

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S/504/61/016/000/002/003
D051/D113

AUTHOR: Milekhin, G.A.

TITLE: The hydrodynamic theory of multiple particle formation during the collision of fast nucleons with nuclei

SOURCE: Akademiya nauk SSSR. Fizicheskiy institut. Trudy, v. 16, 1961. Nekotoryye voprosy teoreticheskoy fiziki, 50-93.

TEXT: This study was conducted in order to fill a gap between theory and experiment and to complete Landau's hydrodynamic theory of multiple particle formation at high-energy nuclear collisions (Izv. AN SSSR, seriya fiz., 17, 51 [1955]) by introducing a more accurate method of calculating secondary particle distributions and extending the problem to nucleon-nucleus collisions. The paper has four chapters, the first being a basic introduction to processes of high-energy particle collision; special stress is laid on the exposition of some problems of relativistic hydrodynamics, the form of the relative formulae and the solution of the latter. In chapter II, the

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The hydrodynamic theory ...

consecutive use of the hydrodynamic model is used as a basis for finding the dependence of the number of formed particles on the energy of the incident particle and the atomic weight of the nucleus. Chapter III deals with the angular, energy, and transverse momentum distribution of secondary particles. As indicated above, this problem was resolved by a more accurate method. It is also shown that, in a coordinate system close to the C-system the angular and energy distribution of the secondary particles is approximately symmetrical in a plane, perpendicular to the direction of the incident particles. In chapter IV, obtained formulae and experiment are compared, and it is shown that the hydrodynamic theory well describes the basic qualitative features of multiple particle formation. Coincidences and divergences between theory and experiment are discussed. S.Z.Belen'kiy, Ye.L.Feynberg, G.T.Zatsepin, and I.M.Khalatnikov are thanked for help rendered. There are 15 figures and 2 tables. [Abstractor's note: the paper is a dissertation for the degree of Candidate of Physics and Mathematics defended at the Fizicheskii institut in P.N.Lebedeva AN SSSR(Physics Institute imeni P.N.Lebedev, AS USSR) on May 17, 1959] .

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B102/B104

AUTHOR: Milekhin, G. A.
TITLE: Nonlinear scalar fields and multiple particle production
PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 26, no. 5, 1962, 635-641

TEXT: Heisenberg's field theory of multiple meson production (Z. Phys. 126, 569 (1949); 133, 65, 1952) was used for a qualitative investigation of some real nonlinear scalar fields. Owing to the large number of particles involved in the processes considered the non-commutativity of the field operators is assumed to play a secondary role and the field is considered as being approximately classical. The solution of the equations of motion is based on the analogy between the field equations and the equations of hydrodynamics. If, after the collision, when the system disintegrates into separate particles, the field can be considered as being free (and therefore composed of plane waves) and if the total number of particles is given by $N_0 = \int a^+(k)a(k)dk$, their

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Nonlinear scalar fields and ...

density can be approximately given by $n \approx \varepsilon/\mu$; ε is the energy density and μ is the reciprocal Compton wave length of a meson. The multiple particle production is calculated for three special cases:

(1) a Schiff-type Lagrangian $L = L_0 - \frac{\lambda}{4} \varphi^4$, ($\lambda > 0$). φ is a periodic time function, whose period, $\tau(\varepsilon) = \oint \frac{d\varphi}{F(\varphi, \varepsilon)}$ is calculated.

$$\tau = 4 \frac{\sqrt{\mu^2 + 4\lambda\varepsilon - \mu^2}}{\sqrt{2\lambda\varepsilon(1+k)}} K\left(\sqrt{\frac{k}{1+k}}\right), \quad (14)$$

$$p = \frac{e}{3} \left(1 + 2 \frac{1-k}{k} - 2 \frac{1-k^2}{k} \frac{E\left(\sqrt{\frac{k}{1+k}}\right)}{K\left(\sqrt{\frac{k}{1+k}}\right)} \right). \quad (15)$$

are obtained; p is the pressure averaged over a period;

$p(\varepsilon) = \frac{1}{\tau} \oint p dt$. At high energy densities ($\lambda\varepsilon \gg \mu^4$), $\tau \approx 5(\lambda\varepsilon)^{-1/4}$,
 $p = \varepsilon/3$; (2) the more general Lagrangian $L = L_0 - \frac{\lambda}{2n} \varphi^{2n}$, ($\lambda > 0$),

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Nonlinear scalar fields and ...

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$$\tau \approx \left(\frac{n}{\lambda}\right)^{\frac{1}{2n}} e^{-\frac{n-1}{2n}}, \quad p = \frac{n-1}{n+1} \epsilon. \quad (19)$$

is obtained for large ϵ . If $n \gg 1$ (very strong repulsion of mesons),
 $\tau \sim \epsilon^{-1/2}$, $p = \epsilon$. (3) For $L = L_0 - \frac{\lambda}{2n} \epsilon^{2n} + \frac{1}{2k} \left(-\frac{2}{\mu}\right)^k$ and high energy
 densities

$$\tau \approx 4\lambda^{-\frac{1}{2n}} \nu^{\frac{1}{2k}} e^{\frac{k-n}{2kn}}, \quad p = \frac{n-k}{2kn+k-n} \epsilon. \quad (20).$$

If $n \rightarrow \infty$, $\tau \sim (\lambda/\epsilon)^{1/2k}$, $p = \epsilon/(2k-1)$. For $n=k$ and $t \sim \tau$,

$$N_0 = \text{const } E_0^{\frac{k-1}{2k-1}}, \quad (27)$$

$$L = \frac{1}{k-1} \ln \frac{\tau}{\Delta} \approx \frac{1}{2k-2} \ln \frac{\mu^2 \tau^2 E_0}{M}. \quad (28).$$

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Nonlinear scalar fields and ...

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The secondary particle multiplicity and angular distribution depend mainly on the derivative in the Lagrangian. Ye. L. Feynberg is thanked for discussions. J

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
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Sciences USSR)

Card 4/4

8/056/62/043/003/042/063
B108/B102

AUTHOR: Milekhin, G. A.

TITLE: Infrared asymptotic Green's function in some models of quantum field theory

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 3(9), 1962, 1012 - 1020

TEXT: The infrared asymptotes ($p^2 + m^2 \rightarrow 0$) of Green's function are considered in various field theoretical models. In a scalar field with interaction of the type $g\varphi^2\chi$ without vacuum polarization, the Green's function can be represented as a continuous integral of the form

$$G(x-x') = \int G(x, x' | \chi) d\chi, \quad (1)$$

if the mass μ of the particles in the field χ is much greater than the mass m of the particles in the field φ . The Green's function $G(x, x' | \chi)$ for the quanta of the field φ in the classical external field $\chi(x)$ satisfies an equation which, after Fourier transformation with respect to

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Infrared asymptotic Green's...

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$x - x'$, takes the form

$$[(\partial - ip)^2 - m^2 - g\chi(x)] G(x, p|\chi) = -1, \quad (3)$$

and the operator solution

$$G(x, p|\chi) = - [(\partial - ip)^2 - m^2 - g\chi]^{-1} = i \int_0^\infty e^{is(-p^2 - m^2 + i\epsilon)} e^{i\partial^2 + 2sp\partial - isg\chi} ds, \quad (4)$$

The parameter s has to be understood as a proper time. Neglecting terms of second order in respect of momentum (∂^2 terms), the solution of Eq. (3) for great s is

$$G^{(0)}(p) = i \int_0^\infty e^{is(-p^2 - m^2 + i\epsilon)} e^{iF(s)} ds \quad (10)$$

with

$$F_{\text{per}}(s) = -\frac{g^2}{32\pi m^2} H_0^{(2)}(2\mu ms) + \frac{g^2 \mu^2}{8\pi} \int_0^\infty ds_1 \int_0^{s_1} ds_2 H_0^{(2)}(2\mu ms_2). \quad (13)$$

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Infrared asymptotic Green's...

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$F_{par}(s)$ is the function $F(s)$ after its divergence has been eliminated. For small s (rapidly varying fields $\chi(x)$), Eq. (3) is solved by the expanding $G(p)$ into a power series of (p^2+m^2) ; $G(p) = (p^2+m^2)^{-1} + \text{const} + \dots$. The function $F(s)$ for small s is found with $\mu \rightarrow 0$:

$$F_{per}(s) = \frac{ig^2}{16\pi^2 m^2} \ln m^2 s, \quad (16)$$

Thus, from Eq. (10) one finds

$$G^{(c)}(p) = \frac{I(p)}{p^2+m^2} \left| 1 + \frac{p^2}{m^2} \right|^\alpha, \quad (17)$$

$$I(p) = i \int_0^\infty dx x^{-\alpha} e^{-ix-ix} \begin{cases} \text{if} \\ \text{when} \end{cases} p^2 + m^2 > 0, \quad (18)$$

$$I(p) = -i \int_0^\infty dx x^{-\alpha} e^{ix-ix} \begin{cases} \text{if} \\ \text{when} \end{cases} p^2 + m^2 < 0.$$

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Infrared asymptotic Green's...

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with $\alpha = g^2/16\pi^2 m^2 < 1$. Similar expressions are derived for the Green's functions of an electron and a nucleon in an external field.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of
Sciences USSR)

SUBMITTED: April 4, 1962

Card 4/4

MILEKHIN, G.A. [deceased]; FRADKIN, Ye.S.

Log-log approximation in quantum electrodynamics. Zhur. eksp.
i teor. fiz. 45 no.6:1926-1939 D '63. (MIRA 17:2)

1. Fizicheskiy institut imeni Lebedeva AN SSSR.

MILEKHIN, G.P., kandidat veterinarnykh nauk.

Parasympathetic innervation of the parotid salivary gland in horses.
Veterinariia 30 no.5:35-39 My '53. (MLRA 6:5)

MILEKHIN, I.

Achievements and failures of Bashkir cooks. Obshchestv. pit.
no.7:42-44 J1 '62. (MIRA 15:10)

1. Nachal'nik otдела obshchestvennogo pitaniya Ministerstva
torgovli Bashkirskoy ASSR.

(Bashkiria--Restaurants, lunchrooms, etc.)

~~MILKIN, K.I., inshener.~~

Inventions of efficiency promoters. Put' 1 put. khos. no.1:26-28
Ja '57. (MIRA 10:4)
(Railroads--Tools and implements)

MILEKHIN, K.I., inzh., red.; SERGEYEVA, A.I., inzh., red.; BOEROVA,
Ye.N., tekhn.red.

[Hydraulic device for servicing railroad tracks; design, operation,
and repair] Gidravlicheskii putevoi instrument; ustroistvo,
ekspluatatsiia i remont. Moskva, Vses.izdatel'sko-poligr.ob"edi-
nenie M-va putei soobshcheniia, 1961. 79 p.

(MIRA 14:6)

(Railroads—Equipment and supplies) (Hydraulic machinery)

MILEKHIN, K.I., inzh., red.; SERGEEVA, A.I., inzh., red.; BOBROVA, Ye.N.,
tekhn. red.

[Electric tools for track maintenance and repair] Elektricheskie
putevoi instrument. Moskva, Vses.izdatel'sko-poligr. Ob"edinenie
M-va putei soobshcheniia, 1961. 133 p. (MIRA 14:6)
(Railroads--Electric equipment)

MILEKIC, N.

Practice with a towed target by a jet plane. p. 464.

VAZDUHOPLOVNI GLASNIK. (Jugoslovensko ratno vazduhoplovstvo) Zemun, Yugoslavia
Vol. 11, no. 4, July/Aug. 1955

Monthly List of East European Accessions (EEAI) IC, Vol. 8, no. 9, Sept. 1959.

Uncl.

MILKMAN, E.

All can work like this. Sov. profsoiuzy 5 no.2:46-49 P 157.
(Moscow--Building) (MLBA 10:4)

MILEKMAN, Er.

High tension. Sev. profsoiuzy 6 no.3:30-35 Hr '58.
(Karkov--Socialist competition)

(MIRA 11:3)

MILBMAN, Em.

~~Delegate of a congress.~~ Sov. profsoiuzy 6 no.5:56-58 My '58.
(MIRA 11:5)

(Brickmaking)

MILEKMAN, E.; PASKHIN, B.

Designers begin their competition. Sov. profsoiuzy 6 no.15:27-30
N '58. (MIRA 11:12)

(Chemical industries)

DZELOMANOV, V.; MILEKMAN, E.

Every effort should be made for the successful fulfillment of
the seven-year plan. Sov.profsoiuzy 7 no.10:5-8 My '59.
(MIRA 12:9)

(Trade unions) (Socialist competition)

~~MILENIN, G.~~ MILENIN, G., general-mayor aviatsii.

Training soldiers in military traditions. Vest.Vozd.Fl.34
no.11:14-19 N '51. (MIRA 8:3)
(Russia--Air Force) (Military education)

MILENIN, G.

AID P - 737

Subject : USSR/Aeronautics
Card 1/1 Pub. 135 - 4/21
Author : Milenin, G., Maj. Gen. of Aviation
Title : Higher alertness
Periodical : Vest. vozd. flota, 10, 21-28, 0 1954
Abstract : The author starts with generalities on alertness and then specifies what this alertness should consist of. Some names of officers are mentioned.
Institution : None
Submitted : No date

BAZ', Grigoriy Averkovich; MUROMTSEV, Gennadiy Petrovich; RAINKIN,
Aleksandr Nikolayevich; TRIGUB, Iosif Konstantinovich; TSIKHOV,
Kirill Andreyevich. Prinsipal uchastiy BULYBENKO, V.Yu..
MILENIN, V.G., dotsent, kand.tekhn.nauk, red.; PODGUZOV, M.I.,
red.; MEDNIKOVA, A.N., tekhn.red.

[Calculation of pulse systems] Raschet impul'snykh skhem. Pod
red. V.G.Milenina. Moskva, Voen.isd-vo M-va obor.SSSR, 1960. (MIRA 13:5)
237 p.

(Pulse techniques (Electronics))

BAZ' Grigoriy Averkovich; MUROMTSEV, Gennadiy Petrovich; RAINKIN, Aleksandr Nikolayevich; TREGUB, Iosif Konstantinovich; TSIKUNOV, Kirill Andreyevich; Primal uchastiye BULYBENKO, V.Yu.; MILENIN, V.G., dots., kand. tekhn. nauk, red.; PODGUZOV, M.I., red.; MEDNIKOVA, A.N., tekhn. red.

[Design of pulse networks] Raschet impul'snykh skhem. [By] G.A.Ba' i dr. Izd.2., dop. i perer. Moskva, Voen. izd-vo M-va obor. SSSR, 1962. 267 p. (MIRA 15:3)
(Pulse circuits)

ACC NR: AM6018987

Monograph

UR

Milenin, Vladimir Girgor'yevich; Baz', Grigoriy Averkovich; Bulybenko, Viktor YUr'yevich; Muromtsev, Gennadiy Petrovich; Osipov, Vladimir Pavlovich; Rainkin, Aleksandr Nikolayevich; Tregub, Iosif Konstantinovich

Principles of pulse techniques (Osnovy impul'snoy tekhniki) Moscow, Voenizdat M-va obor. SSSR, 1966. 389 p. illus., biblio. 45,000 copies printed.

TOPIC TAGS: pulse coding, pulse counter, pulse generator, pulse shaper, logic circuit, tunnel diode

PURPOSE AND COVERAGE: This is a textbook on pulse technology for students attending military schools of higher education. Circuits and methods employed in numerous fields of radio electronics are described and analyzed. In addition to the usual problems of pulse technology, comparatively novel problems related to computer technology and the use of semiconductor devices are covered. Emphasis is placed on the physical aspect of the phenomena.

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UDC: 621.374

ACC NR:AM6018987

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ACC NR: AM6018987

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SUB CODE: 09/ SUBM DATE: 21Jan66/ ORIG REF: 042/ OTH REF: 002/

Card 6/6

L 9921-63 EWT(1)/BDS/EEC(b)-2--AFFTC/ASD/ESD-3--P1-4/P0-4--
IJP(C)
ACCESSION NR: AP300013

S/0057/63/033/005/0571/0575

AUTHOR: Vorob'yeva, N. A.; Kagan, Yl. M.; Milenin, V. M.

67
66

TITLE: Concerning the electron velocity distribution function in the positive column of a mercury discharge. Part one

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 33, no. 5, 1963, 571-575

TOPIC TAGS: electron velocity distribution, plasma, discharges

ABSTRACT: The velocity distribution of electrons in discharges, an important characteristic of discharges, has been determined experimentally by many investigators, but in most cases the measurement accuracy has been such as to allow of only quantitative determination of the shape of the distribution function. Accordingly, the purpose of the present work was to improve the procedure proposed by Maly'shev, G. M., and Fedorov, V. L. (ZhTF, 23, no. 6, 1953) and to investigate systematically the distribution function in the positive column of a mercury discharge. The measurement technique involves the use of a probe, modulation and a narrow band amplifier. Different flat,

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L 9921-63

ACCESSION NR: AP3000013

cylindrical and spherical probes were used. The measurements were carried out at pressures from $10 \text{ sup } -4$ to $10 \text{ sup } -1$ mm Hg, and for discharge current values from 0.01 to 1.0 amperes. The quantities measured were the probe current and its second derivative for different values of the potential between the probe and the plasma. The approximations involved in the method are discussed. For pressures above $10 \text{ sup } -2$ there was obtained a near Maxwellian distribution in the 0 to 4 eV energy interval. Orig. art. has: 3 equations and 10 figures.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova
(Leningrad State University)

SUBMITTED: 06 Apr 62 DATE ACQ: 12 Jun 63 ENCL: 00

SUB CODE: PH NR REF SOV: 004 OTHER: 004

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Card 2/2

_____ / _____ of the _____ in the Discharge of the _____ Positive Col-
_____ submitte _____ to Ultra Infr Spectroscop, Colloq, Belgrade, 30 Sep-4 Oct 63.

S/0057/64/0034/001/0146/0148

ACCESSION NR: AP4009934

AUTHOR: Vorob'yeva, N.A.; Kagan, Yu.M.; Lyugushchenko, R.I.; Milenin, V.M.

TITLE: On the electron velocity distribution in the positive column of a mercury discharge. Part.2.

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.1, 1964, 146-148

TOPIC TAGS: velocity distribution, electron velocity distribution, mercury discharge, positive column

ABSTRACT: Electron velocity distributions were measured in the positive columns of hot cathode mercury discharges at pressures from 1.2×10^{-3} to 5×10^{-2} mm Hg and currents from 20 to 500 mA. The measurements were performed by a probe method described earlier (N.A. Vorob'yeva, Yu.M. Kagan, V.M. Milenin, ZhTF, 33, 571, 1963). Except for an improved narrow-band amplifier, the apparatus was identical with that previously employed. The new amplifier has a gain of 6×10^5 and a pass band of 8 cps. The resulting improvement in the signal to noise ratio made it possible to follow the velocity distributions to higher electron energies than previously reported. The results of the measurements at 200 mA are presented in the form of graphs. At pres-

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ACC.NR: AP4009934

tures of 1.2×10^{-3} and 6×10^{-3} mm Hg, the distributions were found to be Maxwellian out to the highest electron energies recorded (12 eV and 9 3V, respectively). At 2.5×10^{-2} and 5×10^{-2} mm Hg, deviations from the Maxwell distribution were observed; fewer high energy electrons were present than required by the Maxwell function fitting the low energy portion of the distribution. At 2.5×10^{-2} mm Hg the electron temperature was about 12 000°K and deviations from the Maxwell distribution first became appreciable at electron energies slightly greater than 4 eV; the corresponding figures at 5×10^{-2} mm Hg were 9000°K and 2 eV. Possible experimental errors due to the presence of ion currents would tend to mask the observed effect, which is therefore regarded as real. Orig.art.has: 7 figures.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im.A.A.Zhdanova (Leningrad State University)

SUBMITTED: 01Nov62

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: PH

NR REF SOV: 002

OTHER: 000

Card ^{2/2}

ACCESSION NR: AP4035691

S/0057/64/034/005/0828/0832

AUTHOR: Vorob'yeva, N.A.; Kagan, Yu.M.; Milenin, V.M.

TITLE: On the electron velocity distribution function in the positive column of a mixture of gases

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.5, 1964, 828-832

TOPIC TAGS: plasma, positive column, electron velocity distribution, electric discharge, multicomponent plasma, mercury, inert gas

ABSTRACT: The electron velocity distribution function was determined in the positive columns of gas discharges taking place in a mixture of mercury vapor and one of the inert gases Ne, He, A, Xe. The discharge tube was 50 cm long and 2.5 cm in diameter. The electron velocity distribution was calculated from the characteristics of a set of five probes located at 5 cm intervals along the axis of the tube. The experimental technique is described in more detail elsewhere (N.A. Borob'yova, Yu.M. Kagan, R.I. Lyagushchenko and V.M. Milenin, ZhTF 34, 1964). In all the measurements the discharge current was 200 mA and the partial pressure of mercury vapor was 2.5×10^{-3} mm Hg. The electron velocity distribution in the positive column of a pure

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ACCESSION NR: AP4035691

mercury vapor discharge at this pressure was previously found to be Maxwellian (loc. cit. supra), and this finding was confirmed in the present series of measurements. Electron distribution functions were determined with various amounts of inert gas present, ranging from 0.006 mm Hg of Xe to 4.0 mm Hg of Ne, several different quantities of each gas being employed. In each case it was found that when enough of the inert gas was present the electron distribution deviated from the Maxwellian in the sense that too few high energy electrons were present. The heavier gases were more efficient in depressing the number of high energy electrons than were the lighter ones, 0.02 mm Hg of Xe producing about the same effect as 0.5 mm Hg of Ne. The data are presented graphically, and on each experimental curve the Maxwell distribution is drawn corresponding to the electron temperature obtained from the negative probe characteristic. In some cases, in addition to the large deviations at high energies, small deviations between the experimental curve and the Maxwell distribution can be discerned in the region of the maximum. These small deviations are ascribed to error in determining the space potential from the position of the maximum of the second derivative of the negative probe current with respect to the probe potential. This maximum was sharp in the case of pure mercury vapor, but in mixtures showing considerable deviation from the Maxwell distribution the maximum was broad and could not

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ACCESSION NR: AP4035691

be located precisely. This source of error, however, could not appreciably affect the observations of the large deviations at high electron energies.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im.A.A.Zhdanova (Leningrad State University)

SUBMITTED: 24May63

DATE ACQ: 20May64

ENCL: 00

SUB CODE: ME, EM

NR REF SOV: 002

OTHER: 001

Card 3/3

VOROB'YEVA, N.A.; KAGAN, Yu.M.; MILENIN, V.M.

Electron distribution function in a positive discharge column in neon and helium. Zhur.tekh.fiz. 34 no.11:2079-2081. N '64.

(MIRA 18:1)

1. Leningradskiy ordena Lenina gosudarstvennyy universitet imeni A.A.Zhdanova.

L 7734-66 EWT(1)/ETC/EPF(n)-2/EMG(m)/EPA(w)-2/EWA(m)-2 IJP(c) AT

ACC NR: AP5025909 SOURCE CODE: UR/0057/65/035/010/1907/1909

AUTHOR: ^{44, 55} Kagan, Yu.M.; ^{44, 55} Milenin, V.M. 66
60 B

ORG: Leningrad State University in. A.A.Zhdanov (Leningradskiy gosudarstvennyy universitet) ^{44, 55}

TITLE: On the radial dependence of the electron velocity distribution in the positive column of a discharge

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 10, 1965, 1907-1909

TOPIC TAGS: ^{21, 44, 55} gas discharge plasma, positive column, helium, neon, ^{21, 44, 55} electron distribution, Maxwell distribution, distribution function

ABSTRACT: The electron velocity distribution functions were measured on and off the axes of the 2.5 cm diameter positive columns of 150 to 500 mA discharges in Ne at 0.25 to 1.5 mm Hg and 100 mA discharges in He at 0.2 to 1.2 mm Hg. Four 6 mm long 0.06 mm diameter probes were employed, two being mounted 50 mm apart on the axis of the column and two at corresponding positions 9 mm off the axis. The longitudinal electric field strength measured with these probes was the same on and off the axis. The electron velocity distributions on and off the axis were derived from the second derivatives of the corresponding probe characteristics. At the lowest pressures the distributions were nearly Maxwellian and were the same on and off the axis. At higher pressures there were relatively more low energy electrons and fewer high energy electrons off

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ACC NR: AP5025909

the axis. The difference between the on and off axis distribution functions increased with increasing pressure. Measurements could not be obtained at higher pressures because of increasing noise. The difference between the average electron energy on and off the axis was not great and almost did not exceed the experimental error. The observed difference between the electron distributions on and off the axis is in agreement with a theory previously proposed by Yu.M.Kagan and R.I.Lyagushenko (ZhTF XXXIV, 821, 1873, 1964). Orig. art. has: 1 formula and 2 figures. *4455*

SUB CODE: ME/ SUBM DATE: 08Apr65/ ORIG REF: 005/ OTH REF: 000

Card

2/2

ACC NR: AP 7001326

SOURCE CODE: UR/0057/G6/G36/G221

AUTHOR: Kagan, Yu.M.; Milenin, V.M.; Mitrofanov, N.K.

ORG: Leningrad State University im. A.A.Zhdanov (Leningradskiy gosudarstvennyy universitet)

TITLE: On the energy distribution of electrons in the positive column of an argon discharge

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 12, 1966, 2219-2220

TOPIC TAGS: gas discharge plasma, positive column, argon, electron distribution, Maxwell distribution

ABSTRACT: In a paper shortly to appear in the Zhurnal tekhnicheskoy fiziki, the authors describe a technique for measuring the energy distribution of electrons in plasmas in the presence of a large noise background. In the present letter to the editor they present electron distributions recorded with this technique in the positive column of an argon discharge in a 2.3 cm diameter tube at pressures in the range 0.1 to 4.5 mm Hg and currents from 100 to 300 mA. At low pressures the electron distributions were Maxwellian. At higher pressures there were more low energy and fewer high energy electrons than in the corresponding Maxwell distribution. At 3 an

UDC: 5

ACC NR: AP 7001326

Fig there were observed stable anomalous electron distributions exhibiting steps, similar to the anomalous distributions reported by T.W.Crawford, A.Garscadden and R.S.Palmer (Compt. Rend. 6 Conf. Internat. phenomenes Iones. gas., Paris, 1963). Orig art. has: 3 figures.

SUB CODE: 20

SUBM DATE: 06Jul66

ORIG. REF: 004

OTH REF: 001

Card 2/2

L 31047-65 EWT(l)/EWT(m)/EWP(t)/T/EWP(b)/EWA(h) Pz-6/Pab IJP(c) JD/AT

ACCESSION NR: AP5004321

S/0185/65/010/001/0039/0046

AUTHOR: Pryaschenko, V. Ye. (Prinac'hanko, V. Ye); Miljanin, V. Ye.; Snitko, O. V.

33
30
B

TITLE: Investigation of gold-doped silicon surface

SOURCE: Ukrayins'kyi fizychnyy zhurnal, v. 10, no. 1, 1965, 39-46

TOPIC TAGS: silicon, surface state, doping, surface recombination, recombination rate, photo em

ABSTRACT: The method of single high-voltage pulses was used to investigate the field effect of 20 p-type silicon samples etched and doped with gold from the etching substance. The samples had an approximate resistivity 3500 ohm-cm and a non-equilibrium volume carrier lifetime 700 microseconds. The orientation of the investigated surface was (111). The method of etching and electrode deposition is described. Measurements were made of the conductivity, photoconductivity, and capacitive photoemf as functions of the external electrical field applied to the sample surface through a mic plate. The experimental set-up for measuring the field effect is shown in Fig. 1 of the Enclosure. The photoconductivity and

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L 31047-65

ACCESSION NR: AP5004321

capacitive photoemf were measured by applying rectangular pulses of white light with fronts up to 5×10^{-7} sec, produced by a rotating mirror. Details of the sample preparation and of the experimental procedure were described by one of the authors elsewhere (Snitko, with G. V. Litovchenko, PTT v. 2, 591 and 815, 1960). The measurements were made at 200, with the temperature maintained constant with an ultrathermostat. By comparing the experimental results with the theory, the authors determined the parameters of the surface states on doped and undoped surfaces. The presence of 1×10^{-6} -- $1 \times 10^{-3}\%$ of gold in the etchant gives rise to an additional system of fast surface states, and also influences the parameters of the slow states. The most effective recombination level produced by the gold on the silicon surface lies 0.222 eV below the center of the forbidden band. This level is of the donor type ($C_n = 6 \times 10^{-15} \text{ cm}^2$, hole concentration $1 \times 10^{-22} \text{ cm}^2$), and the concentration of the level depends on the content of gold in the etchant, lying in the range $(0.8 \text{ -- } 4) \times 10^{12} \text{ cm}^{-3}$. To obtain small surface-recombination rates in silicon it is necessary to employ extremely pure reagents and to treat the surface in a way that precludes the introduction of harmful impurities. "The authors thank N. A. Petrov for help with etching the samples." Orig. art. has 6 figures.

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L 31047-65			
ACCESSION NR: AP5004321			
ASSOCIATION: Instytut napivprovodnykiv AN UkrSSR (Institute of Semiconductors AN UkrSSR), Kiev			
SUBMITTED:	12 May 64	ENCL:	01
NR REF SER:	008	OTHER:	007
SUB CODE: 88			
Card 3/4			

L 31017-55

ACCESSION NR: AP5004321

ENCLOSURE: 01

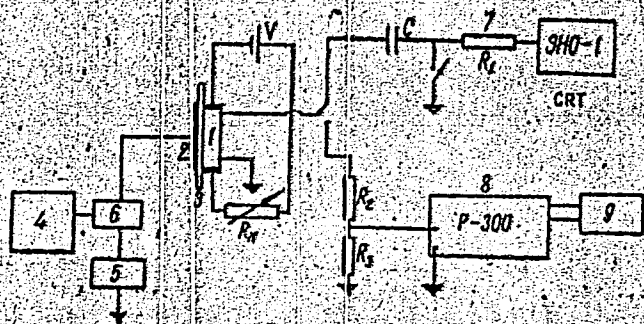


Fig. 1. Circuit for measuring the field effect.

1 - silicon sample, 2 - electrode, 3 - mica, 4 - square-wave generator,
 5 - high-voltage pulse source, 6 - relay for hv pulses, 7 - oscillograph
 coupling circuit, 8 - circuit for measurement of the conductivity change,
 9 - galvanometer

Card 4/4

L 51445-65 EWT(1)/EWT(h)/T/EWP(t)/EWP(b)/EWA(h) Pz-6/Pzb IJP(c) JD/
ACCESSION NR: AP5011064 AT UR/0185/65/010/004/0382/0388

AUTHOR: Prymachenko, V. Ye. (Primsachenko, V. Ye.); Snitko, O. V.; Milenin, V. V.

TITLE: Investigation of the non-equilibrium effect of depletion of majority carriers from silicon. 1

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 10, no. 4, 1965, 382-388

TOPIC TAGS: field effect, nonequilibrium effect, silicon, carrier depletion, conductivity modulation

ABSTRACT: The non-equilibrium field effect was investigated under the condition of intense depletion of majority carriers from silicon. The measurements were made at room and low temperatures (down to 170K) on p- and n-type samples measuring 1.2 x 0.5 x (0.02--0.05) cm. The samples were placed in a cryostat in which a vacuum of ~ 1 x 10⁻⁶ mm Hg was maintained. A diagram of the measurement set-up is shown in Fig. 1 of the enclosure. Two methods of attaining non-equilibrium depletion were used -- turning on depleting field and turning off enriching field. Appreciable modulation of the conductivity of the silicon plates was observed, reaching complete removal of the movable carriers from them. Under such conditions the conductivity of a thin silicon plate dropped practically to zero. The

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L 51445-65

ACCESSION NR: AP5011064

2

temperature dependence of the duration of such a state and of the half-life of the non-equilibrium field effect were investigated. A study was also made of the dependence of the duration of such a state and of the half-life on the applied voltage. Application of light exerts a noticeable influence on the non-equilibrium field effect. The results obtained demonstrate the possibility of employing the pulsed field effect in the depletion mode to obtain a non-equilibrium state without free carriers in the interior of a crystal at a depth on the order of several hundred microns (charged dielectric). At low temperature (-120C) this state exists for a relatively long time (tens of seconds) owing to the slowed down rate of thermal generation of surface charge, which does not have time to screen the external electric field in the pulsed depletion mode. A detailed discussion of the results on this basis of theoretical calculations are presented in a companion article (Accession Nr. AP5011065). Orig. art. has: 6 figures.

ASSOCIATION: Instytut naivprovidnykiv AN URSR, Kyiv [Institut poluprovodnikov AN UkrSSR, Kiev] (Institute of Semiconductors, AN UkrSSR)

21

SUBMITTER: 07Aug64	ENCL: 01	SUB CODE: SS
EX REF NOV: 004	OTHER: 002	
Card 2/3		

65-51445-69
ACCESSION NR: AP6011064

ENCLOSURE: 01

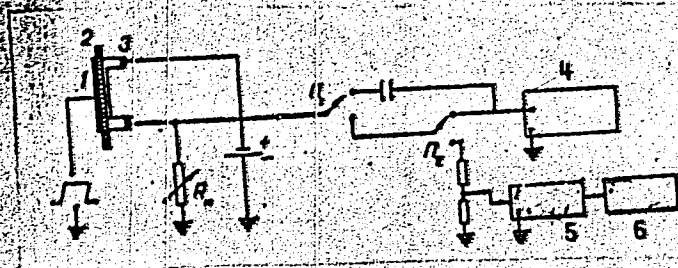


Fig. 1. Diagram of circuit for field-effect measurement

- 1 - Metallic electrode, 2 - mica, 3 - sample, 4 - Oscilloscope,
- 5 - potentiometer, 7 - galvanometer

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L 51444-65 EWT(l)/EWT(m)/T/EWP(t)/EWP(b)/EWA(h) Pz-6/Peb IJP(c)
JD/AT

ACCESSION NR: AP5011065

UR/0185/65/010/004/0389/0397

AUTHOR: Prymachenko, V. Ye. (Primachenko, V. Ye.); Snitko, O. V.; Milenin, V. V.

TITLE: Concerning the mechanism of the non-equilibrium effect of depletion of majority carriers from silicon

SOURCE: Ukrains'kyi fizychnyy zhurnal, v. 10, no. 4, 1965, 389-397

TOPIC TAGS: field effect, nonequilibrium effect, silicon, carrier depletion, conductivity modulation

ABSTRACT: This is a theoretical explanation of the field effect in non-equilibrium depletion, proposed in the preceding paper in the same source (Accession Nr. 5011064). The change in the space charge, the electric field, the conductivity, and capacitance of the semiconductor are calculated as functions of the potential drop across the semiconductor in the non-equilibrium mode. It is shown that the calculated value of the depth of penetration of the field at the instant of the blocking of the current coincides with the thickness of the silicon plate, while the calculated value of the mobility of the field effect, with account of the change in the capacitance coincides in the case of large fields with the data.

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... the case of large fields with the drift

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L 51444-65

ACCESSION NR: AF5011055

mobility of the holes in the volume. This offers evidence of the quantitative agreement between the theoretical model and the experimental data, and confirms the main idea of the proposed mechanism, in which the dominant role is played by

the main idea of the proposed mechanism, in which the dominant role is played by the majority carriers and the change in the conductivity and in the slowing down of the rate of their generation with decreasing temperatures from the surface level. The generation of the majority carriers within the volume of the semiconductor from local centers, and the generation of the minority carriers, apparently play no essential role. Orig. art. has: 8 figures and 14 formulas.

ASSOCIATION: Instytut napivprevodnykiv AN URSSR, Kyiv [Institute of Semiconductors, AN UkrSSR, Kiev] (Institute of Semiconductors, AN UkrSSR)

SUBMITTED: 07Aug64

ENCL: 00

SUB CODE: 88

MR REF SOV: 004

OTHER: 003

me
Card 2/2

L 20401-66 BWP(t) IJP(e) JD

ACC NR: AP5024755

SOURCE CODE: GE/0030/65/011/002/0711/0718

AUTHOR: Primachenko, V. E.; Snitko, O. V.; Milenin, V. V. 44
B

ORG: Institute of Semiconductors, Academy of Sciences UkrSSR, Kiev

TITLE: Nonequilibrium field effect on Si in the region of high depletion 27

SOURCE: Physica status solidi, v. 11, no. 2, 1965, 711-718

TOPIC TAGS: silicon semiconductor, electric conductivity, semiconductor band structure, nonequilibrium

ABSTRACT: The features of the non-equilibrium field effect are investigated for silicon in the region of high majority carrier depletion and non-equilibrium between the energy bands. The observed effects are a strong asymmetry of the amplitude dependence of conductivity with respect to the sign of the external field, a current-pinch effect, and a strong dependence of the kinetics of field effect

Card 1/2

L 20401-66

ACC NR: AP5024755

on field strength, temperature, and light intensity. A mechanism is proposed for the non-equilibrium field effect in the depletion region which involves a strong retardation of screening by surface states at low temperatures and thus allows penetration of the field into the volume of the crystal. The experimental data agree quantitatively with the calculation. Orig. art. has: 4 formulas, 10 figures. [Based on author's abstract]

SUB CODE: 20,09/ SUBM DATE: 16Jul65/ SOV REF: 003/ OTH REF: 003/

Card 2/2 BK

ACC NR: AP6028193

(A)

SOURCE CODE: UR/0032/66/032/006/0719/072

AUTHORS: Arkhipova, A. V.; Kudel'kin, V. P.; Lyubinskaya, M. Ya.; Milenin, Ye. N.; Popova, L. G.

ORG: "Elektrostal'" Factory (Zavod "Elektrostal'")

TITLE: Determination of decarburization in bright-drawn high-speed steel by the thermoelectric potential method

SOURCE: Zavodskaya laboratoriya, v. 32, no. 6, 1966, 719-720

TOPIC TAGS: thermoelectric sensor, decarburization, high speed steel, carbon steel/
R9 tool steel, R18 tool steel

ABSTRACT: A method for determining decarburization in bright-drawn high-speed steel is briefly described. The method is based on measuring the thermoelectric potential between the metal surface and a copper electrode clamped to the surface, and by comparing this potential with the potential obtained between couples of known composition. Experiments were performed on steels R9, R18, and others (not listed in report) using a copper electrode at 160--170C (some results are tabulated). The decarburization criterion is specified by GOST 5952-63 as <0.7% carbon in the surface layer for steel R18 and <0.85% for steel R9. It was found that a meter reading of > (unspecified scale) indicated decarburization in 72--100% of the specimens (checked chemical analysis). It was concluded that this method is sufficiently sensitive to carbon content in the surface layer to be of practical importance. Orig. art. has: figure and 1 table.

SUB CODE: 113/ SUBM DATE: none/ ORIG REF: 002

Card 1/1

UDC: 620.11

MILENINA, D.P.; RUDNEVSKIY, N.K.; SAFONEYEVA, T.M.

Intensity of aluminum and zinc lines in contact-pulse sampling of the Al-Zn alloy as dependent on concentration. Trudy po khim.i khim.tekh. no.1:8-11 '63. (MIRA 17:12)

IVANOVA, A.N., MILENINA, I.S.

Effect of sound stimuli on auditory sensations. Trudy LSOMI
45:19-24 '58 (MIRA 11:11)

1. Kafedra obshchey gigiyeny Leningradskogo sanitarny-gigiyeni-
cheskogo meditsinskogo instituta (zav. - kafedroy-chlen-korrespondent
AMN SSSR prof. R.A. Babyants).
(NOISE--PHYSIOLOGICAL EFFECT)
(HEARING)

SAYCHUK, V.I., dotsent; MILENINA, N.G., assistent

Electrophoretic changes in the proteins during the process of
preserving diphtheria serum. Trudy NIVI 1:268-276 '60.
(MIRA 15:10)

(Diphtheria antitoxin) (Electrophoresis)
(Proteins)

MILEN'KAYA, Yudid' Moiseyevna

An Examination of the Medical-Instructive Work in the Struggle with Shock of Children in Traffic Accidents.

Dissertation for candidate of a Medical Science degree. Saratov Central "N.I.I.B candidate for Education (director, L.S. Bogolepova) and Chair of the Department of Surgery(head, Prof. I.M. Popov'yan) Saratov Medical Institute, 1956

KACZMAREK, T., mgr inż.; ZMUDZINSKA, S., mgr inż.; TOBOLIK, M., inż.;
MILENKIEWICZ, W., inż.

Application of sodium amalgam in the chemical industry. Chemik
16 no.1:10-13 Ja '63.

1. Instytut Chemii Nieorganicznej, Gliwice.

ACC NR: AF7002241

SOURCE CODE: UR/0280/66/000/006/0110/0115

AUTHOR: Luptev, V. A. (Kiev); Mlen'kiy, A. V. (Kiev)

ORG: none

TITLE: On the separation of patterns in the self-learning regime

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 6, 1966, 110-115

TOPIC TAGS: pattern recognition, ~~self learning system, compactness criterion,~~ *mechanism*
pattern separation criterion

ABSTRACT:

This article deals with the problem of pattern recognition in a self-learning regime using statistical decision theory. It is assumed that every recognized pattern is characterized by a definite number R of features which can be expressed by numbers. The realization of a certain pattern is represented by a vector or a point in an R -dimensional metric space whose coordinates are random numbers which obey certain probability distribution laws. These characters can be statistically dependent and patterns in the space of features can intersect. It is required to separate the set of realizations into two subsets and to determine that minimum of the a priori information necessary to do this operation. The concept of mutual compactness of patterns is introduced and two measures of compactness are established.

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UDC: none

ACC NR: AP7002241

Those two supplementary measures are united into one criterion of compactness which is used not only as the measure of compactness, but also for separating the incoming realizations into two classes. The algorithm for successive separation of patterns is presented on the basis of the criterion of mutual compactness. Some experimental results from testing the derived algorithm on a digital computer are presented. Analysis of a large amount of experimental data made it possible to draw the following conclusions: 1) If patterns have approximately the same statistical characteristics, separation by means of the derived algorithms is very close to optimal. When the difference in statistical characteristics is significant, separation deteriorates; however, the less this deterioration, the better the compactness of patterns will be. 2) An increase in the number of features is not always useful. An improvement in separation is attained only when every feature increases the mutual compactness of patterns. Orig. art. has: 3 figures and 7 formulas.

SUB CODE: ~~12~~⁰⁹ / SUBM DATE: 01Oct65/ ORIG'REF: 006/ OTH REF: 001/
ATD PRESS: 5112

Card 2/2

17(1)

SOV/177-58-9-34/51

AUTHOR: Milen'kiy, F.L., Lieutenant-Colonel of the Medical
~~Service~~

TITLE: Physiological Changes in Tank Drivers

PERIODICAL: Voenno-meditsinskiy zhurnal, 1958, Nr 9, p 82 (USSR)

ABSTRACT: Tests have shown that all changes of the vascular tonus occurred on the background of increased emotional excitability in connection with unusual tasks, physical strains and insufficient rest. This was confirmed by the fact that the cardiovascular and respiratory system normalized after a 12-hour rest. The cardiovascular tonus and the morphology of the blood was investigated in 40 tank drivers prior to and after implementing tactical tasks. After a march, the number of leucocytes was increased in 77% and in 23% it was decreased. The respiration frequency was 16-20 per minute. The value of the ventilation of the lungs had changed and the vital capacity of the lungs increased on an average to

MILEN'KIY, V., kand. tekhn. nauk

Increase the quality standards of the survey and design of
highways. Avt. dor. no.10:1-2 0 '64. (MIRA 17:12)

MILEN'KIY, V.D., izhener

Improve the design of river port railroad stations. Sbor. trud.
Akad. zhel. transp. no.2:159-172 '53. (MLRA 8:9)
(Railroads--Stations) (Harbors)

MILIN'KIY, V.D., kandidat tekhnicheskikh nauk.

Some problems of increasing the traffic capacity of river trans-
shipment points. Sbor.trud.Akad.shel.transp. no.3:60-67 '54.
(MLRA 9:8)

(Inland water transportation)(Railroads--Freight)

~~Секрет~~
MILEN'KIY, V., inshener.

Problems of increasing the traffic capacity of river freight transit
points. Mor.1 rech.flot 14 no.1:5-8 Ja '54. (MIRA 7:1)
(Inland water transportation)

VERTSMAN, G.Z.; ~~MILEN'KIY, V.D.~~

Put the planning of railroad technical specifications on the level of the new tasks. Transp.stroi. 6 no.5:17-19 My '56. (MLRA 9:8)

1. Rukovoditel' otdeleniya izyskaniy i proyektirovaniya Vsesoyuznogo (for Vertsman); 2. Zamestitel' nachal'nika Glavtransproyekta (for Milen'kiy).

(Railroad engineering)

MILEN'KIY, V.D., kandidat tekhnicheskikh nauk.

What the length of station tracks should be under increased train
weight. Zhel.dor.transp. 37 no.6:42-46 Je '56. (MLRA 9:8)
(Railroads--Stations)

MILCH'KIY, V.D.

Eliminate shortcomings in planning transshipment points. Transp.
stroit. 8 no. 7:18-21 J1 '58. (MIRA 11:7)

1. Zamestitel' nachal'nika Glavtransproyekta.
(Marine railways)
(Harbors)

MILN'KIY, V.D., kand.tekhn.nauk.

Prospects for using plastics and synthetic materials in construction
for the transportation industry. Transp. stroi. 8 no.9:4-7 8 '58.
(MIRA 11:10)

(Synthetic products)

MILEN'KIY, V.D., kand.tekhn.nauk

Construction of the Turkey-Pakistan railroad. Transp.stroi. 9
no.6:52-54 Je '59. (MIRA 12:11)

(Turkey--Railroads--Construction)
(Pakistan--Railroads--Construction)

MILEN'KIY, V.D., kand.tekhn.nauk

Planning a new railroad line in Japan. Transp.stroi. 9
no.9:53-54 S '59. (MIRA 13:2)
(Japan--Electric railroads--Construction)

MILEN'KIY, V.D., kand.tekhn.nauk; VERTSMAN, G.Z., kand.tekhn.nauk

Comprehensive book about transportation junctions. Transp.
strol. 10 no.3:60-61 Mr '60. (MIRA 13:6)
(Transportation)

MILEN'KIY, V.D., kand.tekhn.nauk

Estimating the effectiveness and costs of constructing
railroads. Transp.stroi. 10 no.8:38-40 Ag '60.
(MIRA 13:8)
(Railroads--Cost of construction)

VERTSMAN, G.Z., kand.tekhn.nauk; MILEN'KIY, V.D., kand.tekhn.nauk
PETROV, V.I., kand.tekhn.nauk

"Principles of designing railroads with electric and diesel traction"
by G.I. Chernomordik. Reviewed by G.Z.Vertsman, V.D.Milen'kii,
V.I.Petrov. Transp. stroi. 10 no.9:60-61 S '60. (MIRA 13:9)
(Railroad engineering)
(Chernomordik, G.I.)

MILEN'KIY, V.D., kand.tekhn.nauk

Prospects of railroad construction in Africa. Transp. stroi.
12 no.4:54-57 Ap '62. (MIRA 15:5)
(Africa--Railroads--Construction)

MILEN'KIY, V.D., kand.tekhn.nauk

Design of the North Siberia main. Transp. stroi. 12
no.9:41-44 S '62. (MIRA 16:2)
(Railroad engineering)

MILEN'KIY, Vladimir Dmitriyevich, kand. tekhn. nauk; ARISTOV, I.V.,
retsensent; PESKOVA, L.N., red.; VASIL'YEVA, N.N., tekhn.
red.

[Designs and estimates in the construction of means of
transportation] Proekty i smety v transportnom stroitel'-
stve. Moskva, Transzheldorizdat, 1963. 58 p.

(MIRA 16:11)

(Transportation)

MILEN'KIY, V.D., kand. tekhn. nauk

Taking a portion of railroad line out of the inundation
zone. Trans. stroi. 13 no.8:70-71 Ag '63. (MIRA 17:2)