"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

ACCESSION NR: AP4026809 S/0022/64/017/001/0113/0121

AUTHOR: Sedrakyan, D. M.

TITLE: Radiation from a charged particle intersecting a metallic shield

SOURCE: AN ArmSSR. Izv. Seriya fiziko-matematicheskikh nauk, v. 17, no. 1, 1964, 113-121

TOPIC TAGS: metallic shield, charged particle, conducting half-space, electromagnetic equation, electromagnetic potential, induced charge, transition radiation

ABSTRACT: The radiation caused by the motion of a charged particle in an ideal conducting half-space at a given distance from its edge has been investigated analytically. The particle trajectory is assumed to be perpendicular to the shield edge and to intersect the shield at distance d from the edge. An exact solution is given for arbitrary particle velocities. Maxwell's electromagnetic equations are solved by introducing the electromagnetic potential A^0 and A where $A = \{\vec{A}, \varphi\}$ - particle field in free space and $A^0 = \{A^0, \varphi^0\}$ - field of induced charge and

Card 1/2

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ACCESSION NR: AP4026809

current on the shield. The exact Fourier-components of the radiation are obtained and are shown to coincide with the known equations of transition radiation. Limiting solutions are given for $d \to 0$ and $d \to \infty$. For the ultrarelativistic case ($\beta = \frac{v}{c} = 1$) when the particle field is almost perpendicular. The problem is shown to be solvable approximately by means of optical geometry. "The author is grateful to B. M. Bolotovskiy for evaluating the work." Orig. art. has: 16 equations and 1 figure.

ASSOCIATION: Fiziko-tekhnicheskaya laboratoriya AN Armyanskoy SSR (Physicotechnical Laboratory, AN Armenian SSR)

SUBMITTED: 04May63 DATE ACQ: 16Apr64 ENCL: 00

SUB CODE: PH NO REF SOV: 006 OTHER: 001

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

ACCESSION NR: AP4038582 S/0022/64/017/002/0119/0126

AUTHORS: Bolotovskiy, B. M.; Sedrakyan, D. M.

TITLE: Radiation of a particle from the open end of a wave guide

SOURCE: AN ArmSSR. Izv. Seriya fiziko-matematicheskikh nauk, v. 17, no. 2, 1964, 119-126

TOPIC TAGS: particle radiation, wave guide, electromagnetic radiation, Maxwell equation, induced current, vector potential, scalar potential

ABSTRACT: With flight of a charged particle across the open end of a semi-infinite metallic wave guide, part of the field connected with the moving particle separates from the particle and propagates in the form of electromagnetic radiation. The authors study radiation caused by the motion of a particle parallel to the axis of a cylindrical metallic wave guide. In order to find the radiation field it is necessary to solve Maxwell's equation under boundary conditions imposed by the presence of the ideally conductive surface of the cylindrical wave guide. The solution of this equation is sought in the form of a sum of two fields: the field connected with the motion of the particle in a vacuum, and the field caused by current induced by the charged particle on the lateral surface of the wave guide.

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ACCESSION NR: AP4038582

To determine radiation fields at large distances, the authors find an asymptotic form of the obtained functions, the radiation intensity, and its angular distribution. They also study particles with small deviations from the axis of a wave guide. They find that for motion of a particle along the axis of the wave guide the loss of radiation is either minimal or maximal, depending on the sign of an obtained expression. Orig. art. has: 22 formulas.

ASSOCIATION: TsNI Fiziko-tekhnicheskaya laboratoriya AN Armyanskoy SSR (Central Scientific Research Physicotechnical Laboratory, AN Armenian SSR)

SUBMITTED: 05Jul63 DATE ACQ: 05Jun64 ENCL: 00

SUB CODE: EM,OP NO REF SOV: 002 OTHER: 000

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L 2140-65 EWT(1) AFWL/ASD(a)-5/SSD/ESD(gs)/ESD(t)/RAEM(t)

ACCESSION NR: AP4044088 S/0022/64/017/004/0103/0108

16
14

AUTHOR: Sedrakyan, D. M.

TITLE: Diffraction radiation of a pointlike charged particle

SOURCE: AN ArmSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, v. 17, no. 4, 1964, 103-108

TOPIC TAGS: diffraction analysis, wave equation, angular distribution, radiation balance

ABSTRACT: The motion of a particle moving past a semi-infinite metallic screen is treated as the diffraction of the particle field by the screen. This is a continuation of earlier work by the author (Izvestiya ArmSSR, ser. fiz-mat nauk v. 17, No. 1, 1964), but the particle trajectory is not perpendicular to the edge of the screen but makes an arbitrary angle with it. In particular, the problem is solved rigorously for the case when the angle varies between zero

Card 1/3

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ACCESSION NR: AP4044088

and π. The radiation losses are neglected, so that the particle velocity can be assumed constant. The radiation of the particle in the presence of the screen is regarded as radiation of currents and charges induced in the plane of the screen during the course of the particle motion. The results are obtained by solving the wave equation and transforming the general solution into a functional equation of the Wiener-Hopf type. It is shown that the angular distribution of the radiation does not depend on the angle of incidence, and that above a certain angle of inclination of the particle trajectory the total energy radiated by the particle is likewise independent of the angle of incidence. At ultrarelativistic velocities one can therefore use the geometrical-optics approximation. When the angle is equal to 90°, the results agree with those of the earlier research. "In conclusion, I thank B. M. Bolotovskiy for valuable advice and a discussion of the results." Orig. art. has: 19 formulas.

Card 2/3

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L 2140-65

ACCESSION NR: AP4044088

ASSOCIATION: FIAN AN SSSR im. P. N. Lebedeva (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 25Dec63

SUB CODE: EM, OP

NR REF SOV: 002

ENCL: 00

OTHER: 001

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

L 34170-65 EWT(1)

ACCESSION NR: AP5005166 S/0022/64/017/006/0123/0127

AUTHOR: Ayvazyan, Yu. M.; Sedrakyan, D. M.

TITLE: On the diffraction of the field of a nonuniformly moving charged particle by a semi-infinite round waveguide

SOURCE: AN ArmSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, v. 17, no. 6, 1964, 123-127

TOPIC TAGS: diffraction, charged particle, round waveguide, Hertz vector

ABSTRACT: The article deals with the radiation field produced by a charged particle moving nonuniformly along the axis of a semi-infinite round waveguide. The electric field intensity is calculated in terms of the Hertz vector, equations for which are derived and integrated by the saddle point method. A series is derived for the total radiated power, in which the principal term is the radiation due to uniformly moving particles, and the deviations from the results of uniform motion attenuate exponentially with increasing wave number. Orig. art. has: 1 formulas.

Card 1/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

L 34170-65
ACCESSION NR: AP5005166

ASSOCIATION: TsNI fiziko-tekhnicheskaya laboratoriya AN Armyanskoy SSR (Central Scientific Research Physicotechnical Laboratory, AN Armenian SSR)

SUBMITTED: 19Mar64 ENCL: 00 SUB CODE: NP, EC

NR REF SOV: 002 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDRAKYAN, D.M.

Radiation from a uniformly moving filament crossing a metal screen. Zhur.tekh. fiz. 34 no.4:718-724 Ap '64. (MIRA 17:4)

1. Fizicheskiy institut imeni Lebedeva, Moskva.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

ACCESSION NR: AP4045258 S/0252/64/039/002/0081/0085

AUTHOR: Avvazyan, Yu. M.; Sedrakyan, D. M.

TITLE: Excitation of electromagnetic waves by a charged particle moving in a planar semi-infinite wave guide

SOURCE: AN ArmSSR. Doklady*, v. 39, no. 2, 1964, 81-85

TOPIC TAGS: charged particle, electromagnetic radiation, wave guide, electromagnetic wave, electromagnetic field, Maxwell equation, electrodynamics

ABSTRACT: The authors consider the excitation of electromagnetic waves inside a semi-infinite, planar wave-guide, the waves being generated by a charged particle moving within the wave guide with uniform velocity. Moreover, a formula is derived for the field of radiation infinitely far out in the plane of the wave-guide. More exactly, let a particle have charge e, and let the particle move with constant velocity $\vec{v}$ in the (x, y) plane so that it does not bisect the wave front of the wave-guide, and let it be at position $\vec{a}$ with reference to the origin at t = o. The equations of the planes bounding the wave-guide have the form $y = \pm b$, $x < o$, $-\infty < z < +\infty$. Maxwell's equations are then used, along with various integration techniques, to derive the field created at large distances from the origin. (See

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

ACCESSION NR: AP4045258

Fig. 1 in the Enclosure). The results show that when the field is such that it is independent of the y-coordinate, the propagated waves are cylindrical waves, traveling along the waveguide. It is also shown that the waves may propagate along the waveguide only at sufficiently large frequencies. Orig. art. has: 1 figure and 9 formulas.

ASSOCIATION: TsNI Fiziko-Tekhnicheskaya Laboratoriya Akademii Nauk Armyanskoy SSR (TsNI Physics-Technology Laboratory, Academy of Sciences, Armenian SSR)

SUBMITTED: 00 ENCL: 01 SUB CODE: EM

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ACCESSION NR: AP4045258 ENCLOSURE: 01

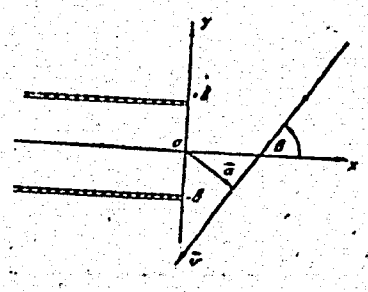

Fig. 1. Motion of a charged particle in a planar semi-infinite wave guide.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

AYVAZYAN, Yu.M.; SEDRAKYAN, D.M.

Diffraction of the field of an irregularly moving charged particle in a semi-infinite circular wave guide. Izv. AN Arm. SSR. Ser. fiz.-mat. nauk 17 no.6:123-127 '64. (MIRA 18:3)

1. TSentral'naya nauchno-issledovatel'skaya fiziko-tekhnicheskaya laboratoriya AN ArmSSR.

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L 58803-65 EWT(d)/EWT(m)/EWP(w)/EWA(d) EM

ACCESSION NR: AP5012166 UR/0022/65/018/001/0117/0125

19
17
B

AUTHORS: Ayvazyan, Yu. M.; Sedrakyan, D. M.

TITLE: Excitation of a system of semi-infinite plates by linear sources

SOURCE: AN ArmSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, v. 18, no. 1, 1965, 117-125

TOPIC TAGS: waveguide system, transition radiation, electromagnetic wave diffraction, wave zone radiation

ABSTRACT: The article deals with the excitation of a system of semi-infinite plane waveguides, occurring when a linear source, such as a charged or current-carrying filament, moves out of one of the waveguides. The radiation produced in the wave zone by such a source is also considered, as well as the limiting case when the distance between the waveguide plates becomes equal to zero. In the latter case the result coincides with the intensity of transition radiation of a current-carrying filament emerging from a solid homogeneous

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L 58803-65

ACCESSION NR: AP5012166

metallic medium into vacuum. Original article has: 34 formulas

ASSOCIATION: TsNIFTL AN Armyanskoy SSR; FIAN SSSR im. P. N. Lebedeva

SUBMITTED: 29May64 ENCL: 00 SUB CODE: EC, EM

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

L 43873-65 EWT(m) Peb DIAAP

ACCESSION NR: AP5006426 S/0051/65/018/003/0360/0363

16
15
B

AUTHOR: Sedrakyan, D. M.

TITLE: Diffraction of Vavilov-Cerenkov radiation 19

SOURCE: Optika i spektroskopiya, v. 18, no. 3, 1965, 360-363

TOPIC TAGS: Cerenkov radiation, diffraction, Hertz vector, Sommerfeld formula, Wiener Hopf method

ABSTRACT: This is a continuation of an earlier study (Izv. AN ArmSSR v. 16, 115, 1963) of the radiation produced when a charge or a current filament moves in vacuum past a semi-infinite metallic screen. The present paper is devoted to the singularities which arise if the filament moves not in vacuum but in a refractive medium of given dielectric constant, so that the velocity of the filament in the medium may exceed the phase velocity of the light. This gives rise to Cerenkov radiation which is diffracted by the screen. Exact expressions are obtained for the fields of the diffracted Cerenkov radiation, using the Wiener-Hopf method to determine the Hertz vector. When the filament moves at the velocity of light, the resultant expression goes over into the Sommerfeld diffraction formula for

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L 43873-65

ACCESSION NR: AP5006426

electric polarization. "I thank B. M. Bolotovskiy for a discussion of the results and valuable remarks." Orig. art. has: 1 figure and 11 formulas.

ASSOCIATION: None

SUBMITTED: 04Apr63 ENCL: 00 SUB CODE: EM, OP

NR REF SOV: 002 OTHER: 001

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L 40923-65 EEC-4/EWA(h)/EWT(1)/EEC(t) Pg-4/Pi-4/Pj-4/PL-4/Pm-4/Pac-4/Peb GG/
LHB

ACCESSION NR: AP5007290 S/0057/65/035/003/0459/0464

61
B

AUTHOR: Ayvazyan, Yu.M.; Sedrakyan, D.M.

TITLE: Radiation from the open end of a plane semi-infinite waveguide 25

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.3, 1965, 459-464

TOPIC TAGS: charged particle, electromagnetic radiation, waveguide 21

ABSTRACT: By a plane semi-infinite waveguide the authors understand a system consisting of two opposed parallel conducting half-planes. The radiation of a point charge moving uniformly in a plane perpendicular to the walls of a semi-infinite plane waveguide is calculated by a variant of the Wiener-Hopf method employing the technique of D.S.Jones (Quart.J.Math.(2) 3, 189,1952). The trajectory of the particle is assumed not to intersect the walls of the waveguide. Formulas are derived for the radiation field and the power radiated both inside and outside the waveguide. When the separation between the walls of the waveguide approaches zero, the formula derived for the radiated energy approaches that obtained by A.P.Kazantsev and G.I.Surdutovich (DAN SSSR 147,74,1962) for the case of a charged particle passing a conducting half-plane. Orig.art.has: 26 formulas and 1 figure.

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L 40923-65

ACCESSION NR: AP5007290 0

ASSOCIATION: none

SUBMITTED: 11Jun64 ENCL: 00 SUB CODE: NP,EC

NR REF SOV: 006 OTHER: 002

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L 10556-66 EWT(d)/EWT(1)/T/EWA(m)-2 IJP(c)

ACC NR: AP5028292 UR/0022/65/018/005/0083/0089

44,55 44,55

AUTHOR: Ayvazyan, Yu. M.; Sedrakyan, D. M.

ORG: TsNI Physico-technical Laboratory, AN Armenian SSR (TsNI Fiziko-tekhicheskaya laboratoriya, AN Armyanskoy SSR)

TITLE: Emission of a point charged particle passing along the axis of a semi-infinite waveguide

SOURCE: AN ArmSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, v. 18, no. 5, 1965, 83-89

TOPIC TAGS: charged particle, waveguide, electric field, magnetic field, particle motion 21,44,55

ABSTRACT: The plane waveguide consists of two semi-infinite flat plates $x < 0$, $y = \pm b$. The z axis is directed normal to the plane of the sketch (See Fig. 1). It is assumed that a point charged particle flies out of the waveguide, moving along the x axis with a velocity $v_x = v$. It is necessary to solve the Maxwell equations with boundary conditions imposed by the presence of two semi-infinite ideally conducting half-planes. Consequently, to the solution of the nonhomogeneous equation must be added solutions of the d'Alembert equation which satisfy these boundary conditions. As a solution of the nonhomogeneous wave equation we choose the field of the charged particle passing along the axis of the plane semi-infinite waveguide

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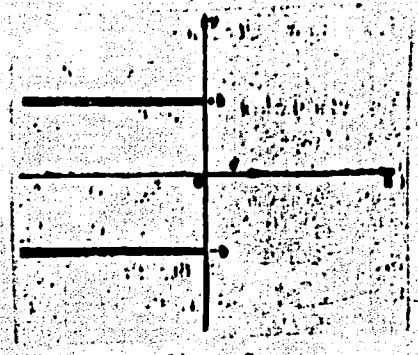

Fig. 1

$$E^{n}_{x,z}(x, y, z) = \int_{-\infty}^{\infty} E^{0}_{x,z}(\omega, q, y)\, e^{i\frac{\omega}{v}z - iqx - i\omega t}\, dq\, d\omega$$

$$E^{n}_{x,z}(\omega, q, y) = R_{x,z}\left[e^{-l|y|} - \frac{\operatorname{ch} ly}{\operatorname{ch} lb} e^{-lb} \right] \qquad (1)$$

where $R_x = -\frac{lmc\gamma^2}{2\pi lc^2}$, $R_z = \frac{leq}{2\pi lv}$, $l = \sqrt{k^2\gamma^2 + q^2}$, $\gamma = \frac{\sqrt{1-\beta^2}}{\beta}$, $k = \frac{\omega}{c}$.

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Here $E^{0}_{x,z}$ are the tangential components of the electrical field. The remaining components of the electromagnetic field can be expressed through them. The solution of the d'Alembert equation for these same components of the field is sought in the form

$$E_{x,z} = \int_{-\infty}^{\infty} \Phi_{x,z}(\alpha, q, \omega, y)\, e^{-i\alpha x - iqz - i\omega t}\, d\alpha\, dq\, d\omega. \qquad (2)$$

After extensive mathematical manipulation, the authors arrive at the following final expression for the angular distribution of the emission intensity at a frequency ω

$$I_{\omega}(\psi, \varphi) = \frac{e^{2\beta}}{2\pi^2 c} \frac{\cos^2(kb \sin\varphi \sin\psi)}{\operatorname{ch}^2 lb} \left| \frac{K^{-}\left(-\frac{m}{v}\right)}{K^{-}(-k\cos\varphi\sin\psi)} \right| \times$$

$$\times \frac{\cos^2\psi \cos^2\frac{\varphi}{2}(1' - \beta\sin\psi) + \alpha_0^2 \sin^2\frac{\varphi}{2}(1 + \beta\sin\psi)}{\alpha_0^2(1 - \beta\sin\psi\cos\varphi)^2}\, d\psi\, d\varphi, \qquad (19)$$

where $\alpha_0^2 = 1 - \beta^2 \sin^2\psi, \quad l = \frac{k}{\beta}\alpha_0.$

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ACC NR: AP5028292

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"In conclusion, the authors thank B. M. Bolotovskii for useful advice."
Orig. art. has: 19 formulas and 1 figure.

SUB CODE: 20/ SUBM DATE: 09Jan65/ ORIG REF: 005/ OTH REF: 001

Card 4/4

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDOY, G.G.

Methodology of estimating the collodion osmotic pressure of the blood serum proteins. Lab. delo no. 11:667-671 '64. (MIRA 17:12)

1. Kafedra propedevticheskoy terapii lechebnogo fakul'teta (zaveduyushchiy - doktor med. nauk M.I.Frankfurt) Donetskogo meditsinskogo instituta.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

BOLOTOVSKIY, B.M.; SEDRAKYAN, D.M.

Radiation of a particle from the open end of a wave guide.
Izv. AN Arm. SSR. Ser. fiz.-mat. 17 no.2:119-126 '64.
(MIRA 17:9)

1. TSentral'naya nauchno-issledovatel'skaya fiziko-tekhnicheskaya laboratoriya AN Armyanskoy SSR.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDRAKYAN, L.G.

Calculating T-section stone columns for eccentric compression.
Izv.AN Arm.SSR,Ser.FMET nauk 1 no.6:501-506 '48. (MLRA 9:8)

1. Yerevanskiy politekhnicheskiy institut imeni K. Marksa.
(Columns)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDRAKYAN, L.G.

Erecting assembled reinforced concrete roofs with garret ceiling using SL-2 precast reinforced concrete trussed flooring. Dokl. AN Arm. SSR 24 no.1:13-18 '57. (MLRA 10:4)

1. Institut stroitel'nykh materialov i sooruzheniy Akademii nauk Armyanskoy SSR. Predstavleno A.G. Nazaovym.
(Roofing, Concrete)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

PHASE I BOOK EXPLOITATION SOV/4648

Sedrakyan, L. G.

K statisticheskoy teorii prochnosti (Statistical Theory of Strength)
Yerevan, 1958. 103 p. 1,000 copies printed.

Sponsoring Agency: Armyanskiy institut stroymaterialov i sooruzheniy.

Reviewer: A. R. Rzhanitsyn, Corresponding Member, Academy of Building and Architecture, USSR, Doctor of Technical Sciences, Professor; Ed.: Z. A. Atsagortsyan, Candidate of Technical Sciences; Tech. Ed.: G. Goroyan.

PURPOSE: This book is intended for scientists and industrial engineers interested in theories on the strength of materials.

COVERAGE: The author shows errors which might be committed in the application of the theories on the strength of materials. He points out that the strength of materials is not an absolute value and that it varies with the shape of the sample or part or with the testing method. He states that the

Card 1/4

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

study of the strength of materials belongs to the study of solid-state physics or to the study of metallography. The following Soviet scientists are mentioned: T. A. Kontorova, N. N. Afanas'yev, Ya. I. Frenkel'. There are 27 references: 26 Soviet and 1 Swedish.

TABLE OF CONTENTS:

1. Introduction 5

Ch. I. Review of Statistical Theories on the Strength of Materials 15

2. Weibull's statistical theory of brittle strength 15
3. T. A. Kontorova and Ya. I. Frenkel': The statistical theory of brittle strength 20
4. N. N. Afanas'yev's statistical theory of fatigue strength 32
5. A. R. Rzhanitsyn's solution to the problem of determining the function of strength distribution in statically indeterminate systems 37
6. Other statistical hypotheses on brittle strength 41

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDRAKYAN, L.G.

Two problems in the statistical theory of strength. Dokl.AN Arm. SSR 26 no.3:135-140 '58. (MIRA 12:10)

1. Institut stroitel'nykh materialov i sooruzheniy Ministerstva stroitel'stva Armyanskoy SSR. Predstavleno A.G.Nazarovym.
(Strength of materials)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDRENOK, S.G.

Conservative therapy of priapism. Urologiia 25 no.2:62-63 Mr-Ap '60. (MIRA 13:12)

(PENIS—SURGERY)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDRENOK, S.G.

Treatment of stab and cut wounds of the chest. Zdrav.Belor. 5 no.8:21-22 Ag '59. (MIRA 12:10)

1. Klinika gospital'noy khirurgii (zaveduyushchiy - dotsent I.M.Stel'mashonok) Minskogo meditsinskogo instituta i khirurgicheskoye otdeleniye 1-y klinicheskoy bol'nitsy g.Minska (glavnyy vrach A.I.Shuba).

(CHEST--WOUNDS AND INJURIES)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

L 58578-65

ACCESSION NR: AP5015725 UR/0205/65/005/003/0345/0349
616.001.28; 577.391

AUTHOR: Sedricheva, Ye. N.

TITLE: Hemopoietic function in dogs recovering from chronic exposure to Sr^{90} and gamma radiation

SOURCE: Radiobiologiya, v. 5, no. 3, 1965, 345-349

TOPIC TAGS: hemopoiesis, gamma radiation, strontium 90, erythrocyte, leukocyte, thrombocyte, neutrophil, blood loss, bone marrow

ABSTRACT: The author studied the compensatory capabilities of bone marrow in dogs recovering from chronic exposure to Sr^{90} and gamma rays in doses about 2 orders higher than the maximum permissible doses (11.2 μc/kg and 5 r, respectively) and to a combination of the two. Blood amounting to 1% of the animals' body weight was drawn from the femoral artery as a functional load. Bloodletting activated hemopoiesis in controls, giving rise to reticulocytosis accompanied by an increase in the number of erythrocytes and leukocytes along with a slight shift to the left of neutrophils, and thrombocytosis. In the experimental animals, on the other hand,

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ACCESSION NR: AP5015725

bloodletting caused a weakening of erythrocytopoiesis and inadequate leukocytopoiesis and thrombocytopoiesis. Erythrocytopoiesis was particularly impaired in the animals that were exposed to 5 r of gamma radiation daily. The compensatory capabilities of the hemopoietic system did not return to normal during the 13 months that the animals were investigated following 3 years of exposure to ionizing radiation. Orig. art. has: 5 figures, 2 tables.

ASSOCIATION: none

SUBMITTED: 05Jun63 ENCL: 00 SUB CODE: LS

NO REF SOV: 006 OTHER: 000

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDRENOK, S.G.

Invagination and torison of the small intestine appearing in labor. Khirurgiia no.8:118 Ag '61. (MIRA 15:5)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - dotsent I.M. Stel'mashonok) Minskogo meditsinskogo instituta.
(INTESTINES--INTUSSUSCEPTION) (LABOR, COMPLICATED)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUGIN, I.

Tractors - repairing

Our practice in tractor repair by the central shop method; MTS 11 no. 12, 1951.

9. Monthly List of Russian Accessions, Library of Congress, May 1952, Uncl.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUN, A.V.

25th anniversary of the Rostov Automobile and Highway Technical School. Avt.dor. 19 no.1:(p. 3 of cover) Ja '56. (MLRA 9:5)
(Rostov--Technical education)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUN, A.V.

Establish possibilities for road maintenance workers to study in technical schools. Avt.dor. 22 no.2:31 F '59. (MIRA 12:2)

1. Zamestitel' direktora Rostovskogo avtodorozhnogo tekhnikuma.
(Road construction--Study and teaching)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

PANKIN, Ivan Aleksandrovich; SEDUN, Andrey Vladimirovich; FEDOROV, V.I., dotsent, kand.tekhn.nauk, retsenzent; MIRONOV, Ye.I., inzh., red.; SHURYGINA, A.I., red.izd-va; ROMANOVA, V.V., tekhn.red.

[Practical work in geodesy] Prakticheskie raboty po geodezii. Moskva, Izd-vo geodez.lit-ry, 1960. 232 p. (MIRA 13:5)
(Surveying)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUN, V.I.

F.F. Chorba, physician and humanist. Zdravookhranenie 3 no.6:8-10 N-D '60. (MIRA 13:12)

1. Iz kafedry organizatsii zdravookhraneniya i istorii meditsiny (zav. - dotsent M.Ya. Gekhtman) Kishinevskogo meditsinskogo instituta.
(CHORBA, FOMA FEODOS'EVICH, 1864-1936)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUN, V. I.

Some problems in the training, disposition, and education of medical personnel in Moldavia. Zdravookhranenie 5 no.2:7-11 Mr-Ap '62. (MIRA 15:7)

1. Nachal'nik upravleniya kadrov Ministerstva zdravookhraneniya Moldavskoy SSR.

(MOLDAVIA—MEDICAL PERSONNEL)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, A.I.

Laying of continuous rail tracks in a division. Put' i put.khoz. 7 no.7:23-24 '63. (MIRA 16:10)

1. Nachal'nik Kizlyarskoy distantsii Severo-Kavkazskoy dorogi.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, B.

In the Presidium of the Central Committee of the Trade Union of Workers of the Main Administration of Urban Gas Supply. Neftianik 5 no.9:24-25 S '60. (MIRA 13:9)
(Labor and laboring classes)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

CHIRIKOV, L. ; inzh.; BABAYAN, A.; SEDUNOV, B.

Trade union life. Neftianik 6 no.12:23 25 D '61.
(MIRA 14:12)

1. Neftepromyslovoye upravleniye Arlanneft'.
(Petroleum industry)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

ACC NR: AP6020800 SOURCE CODE: UR/0181/66/008/008/2382/2389

AUTHOR: Kogan, Sh. M.; Sedunov, B. I.

ORG: Institute of Radio Engineering and Electronics, AN SSSR, Moscow (Institut radiotekhniki i elektroniki AN SSSR)

TITLE: Photothermal ionization of an impurity center in a crystal

SOURCE: Fizika tverdogo tela, v. 8, no. 8, 1966, 2382-2389

TOPIC TAGS: impurity center, thermal ionization, electron energy level, phonon interaction, photon, photoionization

ABSTRACT: Experiments were made on germanium with group III and V impurities. An expression is obtained for the photothermal ionization cross section of an impurity center, i. e., its ionization by photons of energy less than the ionization energy. When an electron interacts weakly with lattice vibrations and the photon energy is close to the electron excitation energy, noncoherent processes contribute the most to the cross section. In these processes, the electron first absorbs a photon, rises to an excited level, and assumes a noncoupled state by absorbing phonons. Comparison of the experimental photoionization peaks and the optical absorption in the excitation peaks makes it possible to estimate the probability of the thermal ionization of the excitation levels. Results are compared with those of other investigators. The authors thank T.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

ACC NR: AP6026606

M. Lifshits, F. Ya. Nad', and V. I. Sidorov for communicating experimental results prior to publication, and to L. V. Keldysh, V. B. Sandomirskiy, and R. A. Suris for discussions. Orig. art. has: 26 formulas.

SUB CODE: 20/ SUBM DATE: 10Jan66/ ORIG REF: 006/ OTH REF: 005

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APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, B.I.; FRANK-KAMENETSKIY, D.A.

Dielectric permeability of biological objects. Usp. fiz. nauk 79 no.4:617-639 Ap '63. (MIRA 16:3)
(Dielectric constant) (Biophysics)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, B.K.

Visiting our Chinese friends. Neftianik 3 no.2:26-28 F '58. (MIRA 11:4)

1.Rukovoditel' profsoyuznoy delegatsii sovetskikh neftyanikov v Kitay.

(China--Petroleum industry)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

14(0), 22(5) SOV/92-58-12-3/24

AUTHOR: Sedznov, B.K., Member of the Central Committee Presidium of the Trade Union of Petroleum and Chemical Industry Workers

TITLE: More Care Should Be Taken in Planning and Designing Petroleum and Chemical Industry Installations (Bol'she vnimaniya planirovaniyu i proyektirovaniyu predpriyatiy neftyanoy i khimicheskoy promyshlennosti)

PERIODICAL: Neftyanik, 1958, Nr 12, pp 3-4 (USSR)

ABSTRACT: In October 1958 the Central Committee of the Trade Union of the Petroleum and Chemical Industry Workers held a convention in Moscow at an All-Union level at which 75 representatives of scientific research and planning institutes took part under the auspices of their trade union. The question of improving both the work of scientific research and planning institutes and that of local committees of their trade union was discussed, and among other things, the revision of both the wage scale and payments of bonuses to staff members of these institutes was proposed. The introduction of a seven-hour working day and the improvement of living conditions of personnel were also considered. In an appeal to scientists, engineers, technicians, and all staff members of planning

Card 1/2

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institutes, the leading role of scientific research organizations, construction enterprises, and experimental units was emphasized. Although a number of the above-mentioned organizations realize their responsibility for speedy development of new techniques, advanced methods, mechanization and automation, certain organizations do not make sufficient efforts either to introduce new industrial processes, or to reduce construction costs, or to improve conditions under which construction men work and live. The May 1958 resolution of the Central Committee of the Communist Party of USSR urged the trade union organizations to take measures to eliminate shortcomings observed in the work of scientific research institutes and pilot units. In conclusion, participants of the convention expressed the conviction that workmen, engineers, technicians, and members of institutes, construction organizations, pilot units, etc. would spare no efforts to fulfill the task set before them by the Party and Government, and that they would greatly contribute to the accelerated development of the chemical, petroleum and gas industries.

ASSOCIATION: Profsoyuz rabochikh neftyanoy i khimicheskoy promyshlennosti (The Trade Union of the Petroleum and Chemical Industry Workers)

Card 2/2

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SEDUNOV, B.K.

Reports and elections of trade-union agencies. Neftianik 5 no.1:3-4 Ja '60. (MIRA 13:11)

1. Chlen prezidiuma TSentral'nogo komiteta profsoyuza rabochikh neftyanoy i khimicheskoy promyshlennosti.
(Trade unions) (Petroleum workers)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, B.K.

The Tatar Province committee of the trade union is striving for the fulfillment of the seven-year plan ahead of schedule. Neftianik 6 no.2:28-29 F '61. (MIRA 14:10)

1. Cheln TSentral'nogo komiteta profsoyuza rabochikh neftyanoy i khimicheskoy promyshlennosti.
(Tatar A.S.S.R.--Petroleum industry)
(Tatar A.S.S.R.--Petroleum chemicals)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, B.K.

In the Central Committee of the Trade Union of Workers of the Petroleum and Chemical Industries. Neftianik 8 no.1:27-28 Ja '63. (MIRA 16:3)
(White Russia—Industrial buildings)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, B.K.

In the Central Committee of the trade union. Neftianik 8 no.2:25 F '63. (MIRA 16:10)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, K. I.

Dissertation defended for the degree of Candidate of Juridicial Sciences at the Institute of Government and Law

"Civil-Law Forms of Kolkhoz Electrification."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

BENEDIKTOV, I.; SEDUNOV, S., red.

[Development of agriculture in the postwar period] Razvitie sel'skogo khoziaistva v poslevoennyi period. Moskva, Gos. izd-vo polit. lit-ry, 1947. 79 p. (MIRA 14:8)

(Agriculture)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SIDOROV, V.

RETAIL TRADE- ACCOUNTING

Organizing preparation of reports of commercial establishments for submission before the deadline, Bevkhg. uchet 11 no. 7, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952, UNCLASSIFIED

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, V.A.

Using accounting machines in warehouses of department stores. [Izd.] LONITOMASH 44:166-172 '58. (MIRA 11:9)
(Department stores--Accounting)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SHOPENSKIY, L.A., inzh.; SEDUNOV, V.F.

Water consumption on dairy farms. Vod. i san. tekh. no.12: 22-25 D '63 (MIRA 18:2)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

92-2-25/37

AUTHOR: Sedunov, V.K., Head of the Trade Union Delegation of Soviet Oilmen

TITLE: Paying a Visit to Chinese Friends (V gostyakh u kitayskikh druzey)

PERIODICAL: Neftyanik, 1958, Nr 2, pp 26-28 (USSR)

ABSTRACT: A trade-union delegation of Soviet oilmen, headed by the author of this article, arrived in Peiping in October, 1957. The object of the visit was to consolidate and develop the friendly relations existing with the oilmen of China and with their trade union. China's national economy has drastically changed within a short time, and an underdeveloped agricultural country has become a rapidly developing industrial and agricultural state. It has long been known that China has abundant petroleum deposits, but foreign capital was not interested in their exploitation, so that the average petroleum production in old China did not exceed 320 thousand tons per year. At present, however, the situation has changed. The considerable progress which can be noted in the fields of petroleum production and refining is due to the help extended China by the Soviet Union which supplies petroleum equipment, tools and instruments. Drilling of oil wells is developing in China on a

Card 1/3

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92-2-25/37

Paying a Visit to Chinese Friends (Cont.)

large scale and the most advanced methods, like turbo-drilling, are being learned and applied. Moreover, oil reservoir flooding is now often used for pressure maintenance, and Chinese drillers also take advantage of the hydraulic fracturing of productive formations. Of 245 hydraulic ruptures performed during the last few years, 82 percent were made successfully; as a result an additonal 75 thousand tons of petroleum were recovered. The Soviet delegation visited Yumen province in the northwestern part of the country and studied conditions prevailing in this petroleum-bearing province, where oil was discovered in 1936 by the Chinese geologist Hsun-Chang-chou. The Yumen Petroleum Administration, which controls a number of enterprises engaged in oil drilling, production and refining, makes strenuous efforts to explore and develop this area. Although the number of production wells is still limited, a substantial part is exploited by the deep pumping method, and that is why Chinese oilmen desire to be kept abreast of oil well reconditioning techniques. Bore-holes 3,000 m. deep were successfully drilled in this province. Serious difficulties are experienced, however, in connection with sinking and lifting

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92-2-25/37

Paying a Visit to Chinese Friends (Cont.)

operations and the Soviet driller Fedus' has personally shown the most efficient way to carry out these operations. The Soviet delegation also visited several towns, like Fu-shun, Shanghai and Mukden, where it saw different factories and came in contact with their workmen and trade-union representatives. There are three photos showing delegates and drilling equipment.

ASSOCIATION: Profsoyuz sovetskikh neftyanikov (Soviet Oilmen Trade Union)

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

KUNIN, V.Ya.; SEDUNOV, Yu.N.; TSIKIN, A.N.

Change of the type of conductivity of rutile ceramics and rutile single crystals in the process of electric aging. Fiz. tver. tela 5 no.10:2771-2774 O '63. (MIRA 16:11)

1. Leningradskiy politekhnicheskiy institut im. Kalinina.

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68780

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B014/B014

24,2400
24 (8), 5 (4)

AUTHOR: Sedunov, Yu. S.

TITLE: On the Theory of Diffusion Charge of Particles of Arbitrary Shape

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Vol 2, Nr 12, pp 57-63 (USSR)

ABSTRACT: The author first refers to papers by N. A. Fuks (Ref 1), Ya. I. Frenkel' (Ref 2), and R. J. Gunn (Refs 3 and 4), which deal with the electric charge of particles penetrating into an ionized medium. The present paper is a general study of the diffusion charge of particles. Assuming that there are only ions of equal charge and mobility, the author writes down the steady diffusion equation (1) which has the form (3) in arbitrary curvilinear orthogonal coordinates. The solution of this differential equation is discussed, and equation (14) is obtained for the number of ions inciding upon the surface of the particles per unit of time. Furthermore, equations (15) and (16) describe the probabilities of collision between a positive or negative ion and a particle. If the particles enter a medium, the ions of which have both charges, the particle charge is a random function at any instant. The distribution of particles of equal charge follows the Gaussian distribution law if particles of equal charge are concerned, in which

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On the Theory of Diffusion Charge of Particles of Arbitrary Shape

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case the diffusion of ions toward particles is independent of the size of the former. In conclusion, the author explains the influence exerted by the electrostatic capacitance of particles on their distribution. The author concludes that particle distribution is determined by electrostatic capacitance, the concentration ratio, and the mobility of ions (Fig 1). There are 1 figure and 5 references, 3 of which are Soviet.

ASSOCIATION: Institut prikladnoy geofiziki, g. Moskva (Institute of Applied Geophysics, City of Moscow)

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Card 2/2

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06398
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10(2)

AUTHORS: Berlyand, O.S., Sedunov, Yu.S.

TITLE: On the Solution of the Turbulent Diffusion Equation

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 2, pp 107-112 (USSR)

ABSTRACT: The equation of turbulent diffusion, Formula 1 in the text, is brought by the operational method, making successively Laplace transformations by coordinate t and by coordinates x and y, to the form given by Formula 4. Making use of the fact that for an equation of this type the Wronskian W(z) = constant, the authors prove a theorem that the mapping of the "diffusion" flow can be expressed, under the boundary condition of q = 0 (volume concentration of the substance), by Formula 5 in the text. Then making use of this theorem and applying the formulae for transformation from the mapping to the original, Formula 6 can be derived for calculating the

Card 1/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

On the Solution of the Turbulent Diffusion Equation

06398
SOV/170-59-2-16/23

"diffusion" flow without the need for a general solution of the problem for the entire space.
There are 2 Soviet references translated from foreign sources.

ASSOCIATION: Institut prikladnoy geofiziki AN SSR (Institute of Applied Geophysics of the AS USSR), Moscow.

Card 2/2

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24.6100
26.1410

29578
S/049/61/000/005/013/013
D216/D306

AUTHORS: Krasnogorskaya, N. V., and Sedunov, Yu. S.

TITLE: The induction method of measuring the charges of separate particles

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 5, 1961, 775-785

TEXT: This paper reports a theoretical and experimental study of the working and limitations of the induction method of measuring the charges of particles of aerosols and its use on land and in airborne conditions. The method, involving indirect measurements, is preferable to direct methods, and previous theoretical treatments of it have sometimes led to erroneous conclusions. It relies on the current induced in a ring-shaped conductor, protected by a metal shield from external fields and direct particle impact, by the passage through it of charged particles, and its efficiency depends on its parameters. In the case considered, the ring and shield are both cylindrical with identical radii, the shield

Card 1/ 8

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touching the ring at its top and bottom edges. The moving particles are assumed much smaller than the dimensions of the ring, and their velocity relative to the ring much less than the velocity of light. Then, the instantaneous charge Q induced by the motion of point of charge q through the ring may be written

$$Q = -q\varphi(z, r) \tag{1}$$

where $\varphi(z, r)$ is the potential at point z, r in the absence of charge q and with the conductor at unit potential. For a cylindrical cavity, $\varphi(z, r)$ is shown by simple electrostatical considerations

$$\varphi(z,r) = \frac{1}{2}\left\{\frac{h}{2} + \frac{2}{\pi}\sum_{n=1}^{\infty}\frac{1}{n}\frac{I_0\left(\frac{\pi n}{l}r\right)}{I_0\left(\frac{\pi n}{l}r_0\right)}\left[\sin\frac{\pi n}{l}\left(z+\frac{h}{2}\right) - \sin\frac{\pi n}{l}\left(z-\frac{h}{2}\right)\right]\right\} \tag{7}$$

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where h is the height of the ring, I_0 is a modified Bessel function, and the boundary conditions $r = r_0$, $\varphi = 1\varphi_0$ $|z|<h/2$ are $\varphi = 0$ $|z|>h/2$ satisfied. The induced charge and current follow by combining (1) and (7). Calculations on the dependence of Q on z show that the "effective height" of the ring $= r_0 + h$, and for $l > r_0 + h$, the induced charge is practically independent of the length of the shield $l - h/2$. For drops passing through the center of the ring, it is shown that the induced charge is characterized by the ratio h/r_0, but this is not so for all points inside the ring, since Q also depends on the coordinate of the trajectory of the drop. It is evident that for any given radius, there is a value of the height of the ring above which Q remains practically constant, and similarly for any given height, an optimum radius. Q increases as the trajectory of the particle approaches the circumference of the ring, the dependence on trajectory being more for smaller height of the ring. This method was investigated experimentally

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The induction method of ...

both in laboratory and in field conditions. In the laboratory, tests were made with a metallic ring and shield, the ring connected to a constant current amplifier which fed an oscillograph. Water drops fell through the center of the ring from a graduated pipette, having already passed through a metal ring which carried a variable voltage and charged them, and were caught in a cup attached to an electrometer. The results showed a linear dependence between the induced current pulse and the mean charge on the drops. An experimental check on the variation of Q with the trajectory of the drop gave satisfactory agreement with the theoretical prediction. Hence, a system calibrated by drops passing through the center of the ring will have a systematic error for drops which do not. To eliminate this, a correction factor is determined by the ratio of the mean value of Q for particles moving through any region of the entrance to the measuring system to Q for particles moving through the center of the ring

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$$K = \frac{Q_{AV}}{Q_c} = \frac{\left(\frac{h}{l} + \frac{8\,l}{r_1\pi^2}\sum_{n=1}^{\infty}\frac{1}{n^2}\,\frac{I_1\left(\frac{\pi n}{l}r_1\right)}{I_0\,\frac{n}{l}r_0}\sin\frac{\pi nh}{2\,l}\right)}{\left(\frac{h}{l} + \frac{4}{\pi}\sum_{n=1}^{\infty}\frac{1}{n}\,\frac{1}{I_0\left(\frac{\pi n}{l}r_0\right)}\sin\frac{\pi nh}{2\,l}\right)} \qquad (10)$$

where r_1 = diameter [Abstractor's note: sic.] of the entrance to the shielded ring arrangement. The maximum relative error of each individual measurement due to the coordinate variation is

$$\delta = \frac{\Delta Q_{max}}{q} = \frac{Q_{AV} - Q_{min}}{q} = \frac{4\,l}{\pi^2 r_1}\sum_{n=1}^{\infty}\frac{1}{n^2}\,\frac{I_1\left(\frac{\pi n}{l}r_1\right)}{I_0\left(\frac{\pi n}{l}r_0\right)}\sin\frac{\pi nh}{2\,l} - \frac{2}{\pi}\sum_{n=1}^{\infty}\frac{\sin\frac{\pi nh}{2\,l}}{n I_0\left(\frac{\pi n}{l}r_0\right)} \qquad (11)$$

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and values of K and δ for a typical arrangement (r_0 = 25 mm, h = 34 mm) are 1.005 and 0.2% respectively. The possible effects arising from the disintegration of drops striking the sides of the entrance to the measuring systems will not be appreciable if the lower limit to the charge detected is of the order of 10^{-4} e.s.u. and the electric field is small. For large electric fields, the measured values of the charges of drops which hit the walls of the entrance depend on the sign of the field and in a field of 100 v/cm may swing from 0.01 - 0.07, although the effect may be reduced by special construction of the entrance. Special arrangements must be made for measuring the charge distribution of particles for high velocities and high electric fields. In aircraft tests, the arrangement was first accommodated in the forward part of the fuselage, later being moved to the nose. The parameters of the apparatus are chosen from the requirements of sensitivity, accuracy and resolution. Assuming that the propability of finding only 1 particle in the volume of the ring cavity is much larger than that of

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finding more than 1, then the ratio of the number of cases of simultaneous arrival of more than 1 particle to the total number of all cases may be represented by

$$k_1 \simeq \frac{nV}{2} = \frac{1}{2}\pi n r_1^2 (r_o + h) \qquad (13)$$

where n is the number of particles per unit volume. The duration of the pulse is determined by the ratio of the "effective height" of the ring to the velocity of the particle, u, and must be appreciably larger than the time constant τ of the system. However, the information provided is determined by the volume and the particle velocity, but since the size of the volume limits the resolution, then $\frac{r_{o+h}}{u}$ must be minimized, in contradiction to the requirement that the duration of the pulse should be much larger than τ. The possibility of graphical determination of parameters for fixed

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D216/D306

The induction method of ...

errors is discussed. V. I. Solodovnikov and Yu. F. Ivanov, both of the Institute of Applied Geophysics of the Academy of Sciences USSR, are mentioned for their work on tests of types of the equipment. There are 12 figures and 15 references: 14 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: R. Gunn. The electrical charge on precipitation at various altitudes and its relation to thunderstorms. Phys. Rev., 71, no. 3, 1947.

ASSOCIATION: Akademiya nauk SSSR. Institut prikladnoy geofiziki (Academy of Sciences USSR. Institute of Applied Geophysics)

SUBMITTED: June 28, 1959

Card 8/8

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

S/170/61/004/001/014/020
B019/B056

AUTHOR: Sedunov, Yu. S.

TITLE: Impurity Spreading From an Instantaneous Point Source

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1961, Vol. 4, No. 1, pp. 98-103

TEXT: By approximation methods, the equation for turbulent diffusion is here solved on the assumption that the coefficients of the turbulent diffusion and the sinking rate of the particles are constant and that only a horizontal component of the velocity of wind exists. A very voluminous expression for the particle flux and as solution expression (7) for the surface concentration is obtained. The latter reads:

$$q_{surf} = \frac{Qh}{4\pi\sqrt{\pi k_x k_y k_z}} e^{wh/2k_z} \left(\frac{b}{a}\right)^{3/4} K_{1/2}(2\sqrt{ab}) \left[1+3\frac{k_z^3}{k_x}\frac{B}{h^2}\left(\frac{a}{b}\right)^{3/2} x\right.$$

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$$- \frac{1}{1680} \frac{k_z}{k_x} B^2 h^2 \left(\frac{a}{b}\right) \left\{1 - \frac{x^2}{4k_x} \left(\frac{b}{a}\right)^{1/2}\right\} - \frac{1}{1240} \frac{k_z^3}{k_x^2} B^3 h^3 \left(\frac{a}{b}\right)^3 \times \left\{1 - \frac{x^2}{6k_x} \left(\frac{b}{a}\right)^{1/2}\right\}\Bigg] \qquad (7)$$

The individual symbols have been defined in an earlier paper. An analysis of the expression (7) shows that the main factor gives the surface distribution in the case of the lack of wind. Further, the effect of wind at $k_z u_0^2/k_x w^2 \ll 1$ may be neglected, and at $Ak_z u_0^2/k_x w^2 \ll 1$ the change in the wind velocity with height may be neglected. The coefficient A considers the velocity distribution of the wind. Finally, the case is investigated in which the velocity of wind averaged over the height equals zero, and a formula for the surface distribution is found. The author thanks O. S. Berlyand for his help. There are 4 Soviet references.

SUBMITTED: June 9, 1960

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

ACCESSION NR: AT4010230 S/3056/63/000/000/0092/0101

AUTHOR: Ivanova, N. M.; Kuklina, G. M.; Sedunov, Yu. S.

TITLE: Method for measuring the ionic spectrum from a high meteorological tower

SOURCE: Issledovaniye nizhnego 300-metrovogo sloya atmosfery*. Moscow, 1963, 92-101

TOPIC TAGS: meteorology, meteorological tower, electrical field, ionic spectrum, atmospheric electricity

ABSTRACT: High meteorological towers are very valuable for continuous monitoring of a variety of parameters (wind velocity and pulsation, temperature, pressure, etc.) which affect the measurable characteristics of atmospheric electricity, since observations can be made in all kinds of weather at altitudes up to 310 meters. However, the problem arises of distortions in the readings due to the tower itself. The authors therefore calculated the distribution of the electrical field and ionic density around a tower and used these calculated deflections to devise a method for measuring the concentration and spectrum of light ions around a tower. The results show that the field voltage is increased and the direction changed near a tower, the horizontal component of the field increasing with height and the vertical component increasing with distance from the tower. The ionic spectrum is also

Card 1/2

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ACCESSION NR: AT4010230

changed near a tower, although at a distance, the concentrations of positive and negative ions become equal. In clear weather, there is a "dead" zone for negative ions around a tower, the radius of which increases with field voltage, height, and ionic mobility and decreases with increasing wind velocity. Orig. art. has: 7 figures and 16 formulas.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 20Feb64 ENCL: 00

SUB CODE: AS NO REF SOV: 005 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, Yu.S.

Calculation of the mutual velocities of Stokes particles in a turbulent flow. Izv. AN SSSR. Ser. geofiz. no.11:1747-1753 N '63. (MIRA 16:12)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

S/0049/64/000/001/0150/0156

ACCESSION NR: AP4014032

AUTHOR: Sedunov, Yu. S.

TITLE: Some problems in turbulent flow particle coagulation

SOURCE: AN SSSR. Izv. Seriya geofizicheskaya, no. 1, 1964, 150-156

TOPIC TAGS: turbulent flow, particle coagulation, turbulent coagulation model, mean free path, velocity distribution, interdiffusion

ABSTRACT: Turbulent flow acceleration and diffusion (as assumed by various authors) in the mechanism of particle coagulation have been reviewed by the author and discrepancies in the calculation of collision numbers have been discussed. A critical evaluation is made on the definition of several parameters used in turbulent coagulation models, e.g., the mean free path ℓ, characteristic time of turbulence pulsation τ_0 and length of inertial flight ℓ_1. It is shown that for $r > 2.4R$ (R- sum of particle radii) particle motion can be studied in the frame of diffusion and that for $r < 2.4R$ kinetic considerations are necessary. An expression is obtained for particle flow "I" integrating the turbulent flow velocity distribution over velocity space. A simplified expression for "I" then yields

Card 1/2

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ACCESSION NR: AP4014032

$I \approx 1.7\left(\frac{\varepsilon}{\nu}\right)^{1/2} R^3 n_0^2$. It is concluded that interdiffusion of particles in turbulent flow, taken in its pure form, cannot lead to fast coagulation rates. The most logical way of treating the particle coagulation phenomena would be to include other mechanisms, such as gravitation. "The author is grateful to L. M. Levin for his advice in this work." Orig. art. has: 44 equations.

ASSOCIATION: none

SUBMITTED: 15Jul63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: AI NO REF SOV: 007 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUNOV, Yu.S.

Some problems of the Brownian diffusion of Stokes's particles in a spatially nonuniform external field. Izv. AN SSSR. Ser. geofiz. no.7:1093-1102 Jl '64. (MIRA 17:7)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

LEVIN, L.M.; SEDUNOV, Yu.S.

Effect of inertia on the precipitation of aerosol particles from a flow at precritical Stokes numbers. Dokl. AN SSSR 162 no.2:316-319 My '65. (MIRA 18:5)

1. Submitted November 26, 1964.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

L 61826-65 EWT(1)/FCC GW

ACCESSION NR: AP5019154

UR/0362/65/001/007/0722/0731

551.576.11

11

9

B

AUTHOR: Sedunov, Yu. S.

TITLE: Cloud fine structure and its role in the formation of the cloud particle spectrum

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 7, 1965, 722-731

TOPIC TAGS: cloud fine structure, cloud particle spectrum, cloud particle formation, cloud turbulent energy, cloud parameter fluctuation, cloud structure

ABSTRACT: Although numerous cloud models used for the establishment of cloud generation and cloud development theories utilize meteorological cloud elements within the 10^{-5} to 10^{-1} cm size range, experimental data seem to indicate that cloud dynamics also depend on inhomogeneities within the 10^{-1}-10^{4}cm size range (N.I. Vul'fson, Issledovaniye konvektivnykh dvizheniy v svobodnoy atmosfere, Izd-vo AN SSSR, 1961; L.M. Levin, Issledovaniye po fizike grubodispersnykh aerozoley, Izd-vo AN SSSR, 1961). Consequently, the author investigates the structure of meteorological elements of clouds in the 10^{-1}-10^{4} cm range. Inhomogeneities of

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ACCESSION NR: AP5019154

meteorological elements of this order of magnitude represent the fine structure of clouds. Since the fine structure of clouds is closely related to the turbulent flow structure, it is quite natural to apply the results of the studies of the passive admixture fluctuations (A.M. Obukhov, Izv. AN SSSR, ser. geogr. i geofiz., 13, no. 10, 1949) to the description of the fluctuation of meteorological elements (L.G. Yelagin, Izv. AN SSSR, ser. geofiz., no. 12, 1963) even within clouds. The structure functions for temperature, water content, and supersaturation fluctuations are derived and additional factors affecting the rate of turbulence energy dissipation in clouds are estimated. The influence of fluctuation processes on the cloud particle spectrum formation during the condensation stage is also analyzed. "The author thanks L. M. Levin for useful discussions." Orig. art. has: 44 formulas.

ASSOCIATION: Institut prikladnoy geofiziki (Institute of Applied Geophysics)

SUBMITTED: 16Nov64 ENCL: 00 SUB CODE: ES

NO REF SOV: 013 OTHER: 001

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

L 1429-66 EWT(1)/FCC GW

ACCESSION NR: AP5024212 UR/0020/65/164/003/0552/0555

AUTHOR: Levin, L. M.; Sedunov, Yu. S.
44,55 44,55

25
B

TITLE: Turbulent-gravitational coagulation of cloud droplets

SOURCE: AN SSSR. Doklady, v. 164, no. 3, 1965, 552-555

TOPIC TAGS: atmospheric turbulence, turbulent diffusion, cloud coagulation, gravitational cloud coagulation, turbulent cloud coagulation, electrostatic coagulation

ABSTRACT: The author investigates the combined effect of turbulent and electrostatic coagulation on the rate of growth of cloud droplets. A two-layer model is considered in which the space outside a large droplet is divided into two parts by a sphere separated from the droplet by a turbulent distance of the mean free path of a particle. The effects of the force of gravity, electrostatic attraction, and hydrodynamic reaction on droplet motion are analyzed and the coefficient of droplet capture in turbulent-gravitational coagulation is determined with the use of a system of dimensionless equations. The author concludes that turbulent diffusion, even when combined with gravitational and electrostatic coagulation, cannot induce coagulational growth of cloud droplets of a diameter R < 18 to 19 μ, and that the formation of a wide range of droplet sizes in a short period of time (20 to 30 min) is

12,44,55

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L 1429-66

ACCESSION NR: AP5024212

caused by condensation processes induced by fluctuations in the basic parameters of the cloud, such as speed of flow, saturation, temperature, etc. Further investigation of the problem is recommended. Orig. art. has: 6 formulas, 1 figure, and 1 table. [SP]

ASSOCIATION: none

SUB CODE: ES

SUBMITTED: 17Jun64

ENCL: 00

ATD PRESS: 4091

NO REF SOV: 006

OTHER: 006

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

ACC NR: AP6032277 SOURCE CODE: UR/0020/66/170/002/0323/0326

AUTHOR: Levin, L. M.; Sedunov, Yu. S.

ORG: Institute of Applied Geophysics (Institut prikladnoy geofiziki)

TITLE: A kinetic equation for describing microphysical processes in the clouds

SOURCE: AN SSSR. Doklady, v. 170, no. 2, 1966, 323-326

TOPIC TAGS: kinetic equation, integrodifferential equation, atmospheric cloud formation, condensation atmospheric

ABSTRACT: The authors develop a method of calculating stochastic condensation and derive a kinetic equation describing this process, along with other equations defining the formation of the cloud spectrum. There have recently appeared many publications using kinetic equations to calculate distribution functions of droplets by size in clouds. This paper continues and expands these efforts. The authors introduce the function of droplet distribution by squares of their sizes, i.e., $f(\sigma, r, t)$, where σ is the square of the particle radius, r is the radius vector, and t is time. One of the least studied processes in cloud formation is the condensation stage of development when the droplet sizes are still small and they grow by condensation of vapor. In this case when examining the unidimensional problem (model of a stratified cloud) the authors write

$$\partial f / \partial t + (u - v')\partial f / \partial z + \Lambda u \partial f / \partial \sigma = K \partial^2 f / \partial z^2 + 2\Lambda K \partial^2 f / \partial z \partial \sigma + A^2 K \partial^2 f / \partial \sigma^2 + \Phi_1 + \Phi_2 \quad (1)$$

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ACC NR: AP6032277

and examine the change in the distribution function, assuming that the initial distribution depends on z (layer thickness), both the last terms are zero, A is a constant, and velocity v is neglected. Relationships are derived which give the simplest types of solution to Eq. (1) under the great restrictions imposed on the parameters of the problem. These solutions can still give a number of qualitative results which show that the fundamental difficulties in explaining the real growth of cloud particles are eliminated by taking the stochastic nature of the condensation growth into account. Computations in greater accord with the actual processes require first that A not be considered constant; this leads to an integro-differential equation which can hardly be analytically solved. The authors intend in a future work to develop numerical methods and design several cloud models. Orig. art. has: 17 formulas.

SUB CODE: 04,12/ SUBM DATE: 08Dec65/ ORIG REF: 005

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

ACC NR: AP6031646 SOURCE CODE: UR/0020/66/170/001/0081/0084

AUTHOR: Levin, L. M.; Sedunov, Yu. S.

ORG: Institute of Applied Geophysics (Institut prikladnoy geofiziki)

TITLE: Some problems in the theory of atmospheric nuclei of condensation

SOURCE: AN SSSR. Doklady, v. 170, no. 1, 1966, 81-84

TOPIC TAGS: atmospheric moisture, aerosol, atmospheric condensation, cloud formation, atmospheric kinetics

ABSTRACT: Formation of the droplet phase in the clouds is essentially determined by the properties of the nuclei of condensation. The present article establishes a relationship between the functions of nuclei distribution by size and by supersaturation and shows the change in nucleus spectrum and the parameters of the atmospheric aerosol with the change in supersaturation. The paper also examines the problem of the mechanism of droplet formation and derives relationships which determine the regular rate of drop formation and the formation rate stipulated by the fluctuation mechanism. This is done by analyzing numerous experiments and concluding that with relative humidity above 70% the nuclei of condensation are sufficiently surrounded with water. Supersaturation δ over the surface of a droplet of radius r may be represented as

$$\delta = \delta_0 - (1 - \delta_0)(Bx - Cx^3). \quad (1)$$

Here $x = 1/r$; δ_0, is supersaturation over a plane surface; $B = 2\sigma/\rho R_\pi T \approx 1.2 \cdot 10^{-7}$ cm;

UDC: 551.574:551.510

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ACC NR: AP6031645

C, a value termed the activity of the nucleus and which, with a number of assumptions, may be expressed as

$$C = Am = br_0^{2(1+\alpha)}, \qquad (2)$$

where m is mass of the soluble part of the nucleus; r_0, radius of the dry nucleus; b and α, certain parameters. Nuclei with a constant ration between their soluble and insoluble parts have $\alpha = 1/2$; if this ratio is of the order of 20%, then coefficient b is 0.25. For nuclei with soluble portion proportional to their surface (the absorption case) $\alpha = 0$; $b = 0$ for completely insoluble nuclei, and hence C also is zero. It is noted that use of C makes it possible to establish a functional connection between a number of parameters determining the process of condensation on atmospheric nuclei, and furnishes a criterion for judging the theoretically derived equations. Analysis of droplet formation rate is very important for study of the kinetics of cloud formation. This paper was presented by Academician Ye. K. Fedorov 24 Dec 1965. Orig. art. has: 19 formulas.

SUB CODE: 04/ SUBM DATE: 08Dec65/ ORIG REF: 002/ OTH REF: 002

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDUSH, V. YA.

130-10-16/18

AUTHOR: Sedush, V.Ya.

TITLE: Marking Metal on the Blooming Mill (Kleymeniye metalla na bluminge)

PERIODICAL: Metallurg, 1957, No.10, pp. 36 - 37 (USSR)

ABSTRACT: A brief account is given of a device (Figs. 1 and 2) developed for stamping the work on blooming mills. The arrival of the billet actuates a photo-electric cell which produces an impulse to actuate the pneumatically-operated stamping mechanism; having stamped the end of the billet this mechanism is returned by a spring. Some past and planned modifications of the original design are enumerated. There are 2 figures.

ASSOCIATION: Works imeni Voroshilov (Zavod imeni Voroshilova)

AVAILABLE: Library of Congress.

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APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

LEVIN, M.Z.; SEDUSH, V.Ya.; SHUMILOV, K.D.

Investigation of blast furnace tap guns. Izv. vys. ucheb. zav.; chern. met. no.10:167-171 '60. (MIRA 13:11)

1. Donetskiy industrial'nyy institut.
(Blast furnaces--Equipment and supplies)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

LEVIN, M.Z.; SEDUSH, V.Ya.

Investigating the performance curves of blast furnace charging mechanisms. Izv. vys. ucheb. zav.; chern. met. 4 no.11:176-181 '61. (MIRA 14:12)

1. Donetskiy politekhnicheskiy institut.
(Blast furnaces--Equipment and supplies)
(Feed mechanisms)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

LEVIN, M. Z.; SEDUSH, V. Ya.

Determining the pressure acting on the piston of a clay gun.
Izv.vys.ucheb.zav.; chern.met.7 no. 4:164-171 '64. (MIRA 17:5)

1. Donetskiy politekhnicheskiy institut.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

LEVIN, M.Z.; LESHCHINSKIY, M.F.; SHUMILOV, K.D.; SEDUSH, V.Ya.; GORYUNOV, Yu.G.

Forces in pushing the metal through manipulator rolls on continuous billet mills. Izv. vys. ucheb. zav.; chern. met. 7 no.8:76-80 '64. (MIRA 17:9)

1. Donetskiy politekhnicheskiy institut.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001447620016-0

SEDVIC, M.

Yugoslavia (430)

Science-Periodicals

Determining hyperbolic functions by means of the binomial theorem. p. 140. Hrvatsko prirodoslovno drustvo. GLASNIK MATEMATICIO-FIZICKI I ASTRONOMSKI. Zagreb. (Five no. a year; bulletin on mathematics., physics, and astronomy issued by the Croatian Society of Natural Sciences. French, English, or German summaries). Serija II, Vol. 7, No. 3, 1952.

East European Accessions List. Library of Congress Vol. 2, No. 6, June 1953. Unclassified.

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