

GORSHKOV, A.A. [Horshkov, A.A.]; POLKIN, M.I. [deceased]; KRASNOGOLOVTSEV,
V.S. [Krasnokolovtsev, V.S.]

New methods of treating liquid cast iron with magnesium. Nauk
pratsi Inst.lyv.vyrob.AN URSR 9:92-101 '60. (MIRA 15:3)
(Cast iron--Metallurgy)

KRASNOGOLOVTSEV, Vasilii Semenovich; ROMANOV, A.I., retsenzent;
CHISTYAKOVA, L.G., inzh., red.; GORNOSTAYPOL'SKAYA, M.S.,
tekhn. red.

[Nut-cutting equipment] Gakonareznoe oborudovanie. Moskva,
Mashgiz, 1963. 145 p. (MIRA 16:5)
(Screw-cutting machines) (Bolts and nuts)

ACCESSION NR: AT4040778

S/2657/64/000/011/0071/0110

AUTHOR: Krasnogolovy*y, B. N.

TITLE: Two-circuit frequency multipliers using nonlinear capacitance

SOURCE: Poluprovodnikov*y*ye pribory* i ikh primeneniye; sbornik statoy, no. 11, 1964, 71-110

TOPIC TAGS: semiconductor device, frequency multiplier, nonlinear capacitance, semiconductor diode, harmonic generator

ABSTRACT: The author notes the considerable attention given in recent years to frequency multipliers using semiconductor diodes which employ the nonlinear capacitance of a back-biased p-n junction for harmonic generation. The use of high-Q diodes with nonlinear capacitance and low-loss filtering networks in frequency multipliers ensures a high degree of efficiency in achieving the harmonics - an efficiency which is not attainable in other classes of multipliers. The specific difficulties encountered in the design of nonlinear-capacitance frequency multipliers are associated primarily with the fact that effective frequency multiplication is possible only with a powerful signal fed to the diode

Card/2

ACCESSION NR: AT4040778

(particularly if the input values are high), while the design data available in the technical literature have been obtained, fundamentally, for low-signal operation. In the present article, using as an example typical twin-circuit arrangements of non-linear-capacitance frequency multipliers, the general problems inherent in the design of such multipliers are considered. These multipliers all employ the nonlinear capacitance of the p-n junction of semiconductor diodes. The analysis of the multipliers presented in this paper takes into account losses in the diode and filters and imposes no limitation on the strength of the input signal. Simple design formulas are derived for the selection of the optimal parameters of the multipliers and the basic characteristics of multiplier diodes. The author also makes a comparative estimate of typical multiplier circuit arrangements and provides recommendations regarding their use. In view of the space requirements of the article, many problem areas are merely touched on briefly, and in most cases intermediate mathematical steps have been omitted. Orig. art. has: 5 tables, 19 figures and 84 formulas.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: EC

NO REF SOV: 002

OTHER: 004

Car 2/2

KRASNOGOLOVYY, N.K., inzh.; MASLENNIKOVA, G.N., kand.tekhn.nauk;
SAKHAROV, S.S., inzh.; BUCHENKOVA, A.F., inzh.

Suspension insulators for overhead power transmission lines.
Elektrotehnika 34 no.9:73-75 S '63. (MIRA 16:11)

MASLENNIKOVA, G.N., kand. tekhn. nauk; KRASNOGOLOVYY, N.K., inzh.;
BUCHENKOVA, A.F., inzh.

Study of the process of aging in high-voltage ceramic
materials. Stek. i ker. 20 no.8:26-28 Ag '63. (MIRA 16:11)

1. Gosudarstvennyy issledovatel'skiy elektrokeramicheskiy
institut.

VALEYEV, Kh.S., kand.tekhn.nauk; KRASNOGOLOVYY, N.K., inzh.; LITVINOVA,
M.I.

Investigating the reversing dielectric permittivity of certain
ferroelectric ceramic materials in the domain of weak variable
fields. Trudy GIEKI no.2:100-109 '57. (MIRA 11:7)
(Dielectric constants) (Ceramic materials) (Ferroelectric substances)

KRASNO GOLOVYY, V.

AID P - 1056

Subject : USSR/Aeronautics

Card 1/1 Pub. 58 - 15/19

Author : Krasnogolovyy, V.

Title : Two-cylinder aircraft model engine

Periodical : Kryl. rod., 3, 20-21, Mr 1955

Abstract : The model engine described has 3.5 cu cm capacity and makes 5,700 rpm. Diagrams and specifications necessary for its construction, are given.

Institution: None

Submitted : No date

KRASNOGOLOVYY, V. (Riga)

With two propellers. Kryl. rod. 15 no.1:30 Ja '64.
(MIRA 17:2)

KRASHOGOLOVYY, V. (Riga).

Starter for engines of airplane models. Kryl. rod. 9 no.2:insert:
14-15 P '58. (MIRA 11:2)

(Airplanes--Engines--Models)

ABRAMOV, B., sud'ya respublikanskoy kategorii; SIMONOV, V., master sporta,
g. Leningrad; MARCHENKO, A.; KRASNOGOLOVYY, V. (g. Riga);
BROKTSITTER, G. (Karagandinskaya obl.)

Create, invent, test. Kryl. rod.11 no.12:28-29 D '60. (MIRA 14:3)

1. Rukovoditel' aviamodel'nogo kruzhka stantsii yunykh tekhnikov
g. Kishinev (for Marchenko).
(Airplanes)

GORELEYCHENKO, V.K., prof.; LYCHKOVSKIY, V.L., prof.; REYNGOL'DT, Yu.A., dots., kand. tekhn. nauk; NITUBOV, Ye.V., prof., doktor tekhn. nauk, retsenzent; GOLOVAN, A.T., prof., doktor tekhn. nauk, retsenzent; KRASNOGORODTSEV, S.A., inzh., red.; VOLCHOK, K.M., tekhn. red.

[Electrical equipment of ships and river transportation enterprises]
Elektricheskoe oborudovanie sudov i predpriatii rechnogo transporta.
Leningrad, Izd-vo M-va rechnogo flota SSSR, 1950. 520 p.
(MIRA 14:6)

(Electricity on ships) (Inland water transportation)

KRASNOGORODTSEV, S. A., Engr

PA 167T50

USSR/Electricity - Regulations, Installation
tion Sep 50

"Regulations on the Installation of Electrotechnical Equipment" (A Symposium)

"Elektrichestvo" No 9, pp 82-91

Criticisms and suggestions requested by Organizing Committee of VNIIE on 100 sections of subject regulations are presented by Engr S. A. Krasnogorodtsev, Mem, Organizing Committee VNIIE; Engr M. K. Kharchev, Chm, Elec Supply Sec; Engr D. B. Modnrus, Chm, Elec Furnace Sec; Engr G. M. Knorring, Illumination Equipment Sec; Engr M. M. Zarkhin, Chm,

167T50

USSR/Electricity - Regulations, Installation (Contd) Sep 50

Cable Line Sec; and Prof A. A. Glazunov, Dr Tech Sci, Moscow Power Eng Inst Imeni Molotov.

167T50

RODIONOV, S.A., ABRAMSKII, A.I., AND MICHAS'YEV, V.V.
Disconnecting Switches (Raz'yedinitely), Gosenergoizdat, 1952, 153 pages.

This book discusses the designations and operating conditions of disconnecting switches; design of repeating, knife, roller, and rocker types; design of manual, electric, and pneumatic drivers; design of individual parts; methods of assembly; and checking, testing, and installation of disconnecting switches.

This book is intended for skilled workmen and others at apparatus building plants and for operating personnel of power establishments.

So: W-30252

KRASNOGORODTSEV, S.A., redaktor; VOLCHOK, K.M., tekhnicheskiy redaktor

[Regulations on the electric equipment of ships for inland navigation in the U.S.S.R. (rivers, lakes, canals)] Pravila po elektrooborudovaniyu sudov vnutrennego plavaniia SSSR (reki, ozera, kanaly) Leningrad, Izd-vo Ministerstva rechnogo flota SSSR, 1953. 191 p. [Microfilm] (MLRA 7:10)

1. Russia (1923- U.S.S.R.) Rechnoy registr SSSR.
(Electricity on ships)
(Ships--Equipment and supplies)

KRASNOGORODTSEV, S.A.

ZALESKIY, A.M., redaktor; KRASNOGORODTSEV, S.A., redaktor; VORONETS-
KAYA, L.V., tekhnicheskij redaktor.

[Construction of high-voltage equipment; collection of articles]
Vysokovol'tnoe apparatostroenie; sbornik statei. Leningrad, Gos.
energ. izd-vo, 1954. 303 p. (MLBA 7:10)
(Electric apparatus and appliances)

REYNGOL'DT, Yuriy Anatol'yevich; VASNOGORODTSEV, S.A., redaktor;
VOLCHOV, K.M., tekhnicheskii redaktor.

[Electric equipment for harbor hoisting and conveying machinery]
Elektricheskoe oborudovanie portovykh pod'emno-transportnykh
mashin. Leningrad, Izd-vo "Rachnoi transport," Leningradskoe
otd-nie, 1955. 356 p. (MLRA 8:10)
(Hoisting machinery) (Electric machinery)

AFANAS'YEV, Vasil'y Vladimirovich; KRASHOGORODTSEV, S.A., redaktor;
ZABRODINA, A.A., tekhnichesk'iy redaktor

[High-voltage air circuit breakers] Vozdushnye vykliuchateli vysokogo
napriazheniia. Moskva, Gos. energ. izd-vo 1956. 195 p. (MLRA 10:1)
(Electric circuit breakers)

AFANAS'YEV, Vasilii Vladimirovich; ~~KRASNOGORODTSEV, S.A., inzh., red.;~~
ZABRODINA, A.A., tekhn.red.

[Designs of high-voltage breaking devices] Konstruktsii vykliu-
chaisushchikh apparatov vysokogo napriazheniia. Leningrad, Gos.
energ.izd-vo, 1959. 574 p. (MIRA 12:4)
(Electric switchgear)

**KAPLAN, Veniamin Vul'fovich; NASHATYR', Veniamin Movshevich;
KRASNOGORODTSEV, S.A., red.; ZHITNIKOVA, O.S., tekhn.red.**

[A.A.Gorev's oscillatory circuit for the testing of high-voltage apparatus] Kolebatel'nyi kontur A.A.Goreva dlia ispytaniia apparatov vysokogo napriazheniia. Moskva, Gos. energ.izd-vo, 1960. 210 p. (MIRA 14:4)
(Electric apparatus and appliances--Testing)

KUKEKOV, Georgiy Aleksandrovich; KRASNOGORODTSEV, S.A., inzh., red.;
ZHITNIKOVA, O.S., tekhn. red.

[Designing of high-voltage a.c. cutouts] Proektirovanie vykliucha-
telei peremennogo toka vysokogo napriazhenia. Moskva, Gos. energ.
izd-vo, 1961. 295 p. (MIRA 14:10)

(Electric cutouts)

RIVLIN, Lev Borisovich; KRASNOGORODTSEV, S.A., red.; ZHITNIKOVA, O.S.,
tekhn. red.

[Servicing of the electrical equipment of shops] Obsluzhivanie
tsekhovogo elektrooborudovaniia. Izd.5.; perer. Moskva, Gos.
energ. izd-vo. 1961. 332 p. (MIRA 15:3)
(Electric apparatus and appliances--Maintenance and repair)

KHOIYAVSKIY, Grigoriy Borisovich; KRASNOGORODTSEV, S.A., red.;
ZHITNIKOVA, O.S., tekhn. red.

[Calculating electrodynamic forces in electric devices] Ras-
chet elektrodinamicheskikh usilii v elektricheskikh apparatakh.
Moskva, Gosenergoizdat, 1962. 183 p. (MIRA 15:7)
(Electrodynamics)
(Electric apparatus and appliances)

AFANAS'YEV, Vasilii Vladimirovich; KRASNOGORODTSEV, S.A., inzh.,
red.; ZHITNIKOVA, O.S., tekhn. red.

[High-voltage a.c. disconnecting switches] Raz"ediniteli pe-
remennogo toka vysokogo napriazhenia. Moskva, Gosenergoiz-
dat, 1963. 222 p. (MIRA 16:12)

(Electric cutouts)

KHOLYAVSKIY, G.B.; KRASNOGORODTSEV, S.A.

Clarification of formulas. Vest. elektroprom. 34 no.5:80 My
'63. (MIRA 16:5)

(Electric conductors)

SEMCHINOV, Aleksey Matveyevich; KISHCHENKO, Ye.M., eds., reds.;
KRASNOCORODYSEV, S.G., red.

[Current conductors of industrial enterprises] Tokoprovody
promyshlennykh predpriyatii. Moskva, Energiia, 1964. 215 p.
(MIRA 17:10)

BACHURIN, Nikolay Ivanovich [deceased]; KRASNOGORODTSEV, S.A.,
red.

[Electric current transformers; calculations and design]
Transformatory toka; raschety i konstruktsii. Moskva, Izd-
vo "Energia," 1964. 375 p. (MIRA 17:5)

AFANAS'YEV, Vasilii Vladimirovich; KRASNOGORODTSEV, S.A., red.

[Air-blast switches; their construction and design] Voz-
dushnye vykliuchateli; raschet i konstruirovaniye. Moskva,
Energia, 1964. 303 p. (MIRA 17:11)

RODSHTEYN, Lev Abramovich; KRASNOGORODTSEV, S.A., inzh., red.

[Low-voltage electrical apparatus] Elektricheskie apparaty nizkogo napriazheniia. Moskva, Energiia, 1964.
367 p. (MIRA 18:1)

KRASNOGOROV, B.V.

Summaries of papers presented at the XXVI Congress of Surgeons of the USSR, Moscow, 20 - 27 January 1955, included:

Delayed Results of Surgical Treatment of Lung Cancer.

B. V. KRASNOGOROV and A. P. KOLESOV

SOURCE: ~~Source~~ A-46013 (Official Publication) Unclassified.

KRASNOGOROV, G.A.

ABRAMOV, I.V.; BAKHTOV, S.G.; GORSHKOV, D.S.; KRASNOGOROV, G.A.
PETROVSKIY, V.V.

Treating trichomoniasis in bulls [with summary in English].
Veterinariia 35 no.2:35-40 F '58. (MIRA 11:2)

1. Vsesouznyy institut eksperimental'noy veterinarii (for Abramov, Petrovskiy)
2. Moskovskaya veterinarnaya akademiya (Bakhtov).
3. Sovkhoz "Krasnaya Poyma" (for Krasnogorov).
(Trichomoniasis) (Bulls--Diseases and pests)

ACCESSION NR: AP4009977

S/0109/64/009/001/0078/0086

AUTHOR: Krasnogorov, S. I.

TITLE: Simultaneous evaluation of amplitude, phase, range and its derivatives by radar methods

SOURCE: Radiotekhnika i elektronika, v. 9, no. 1, 1964, 78-86

TOPIC TAGS: radar, range to target, target speed, target acceleration, moving target, radar theory

ABSTRACT: It is claimed that inaccuracies have been found in the Kelly article, "Radar measurement of range, speed, and acceleration" (Zarubezhnaya elektronika, 1962, 2, 35). The present article "eliminates the defects" of the Kelly article and presents the treatment of a more general problem: simultaneous evaluation of parameters which allow for (a) a variation of the amplitude and phase of a signal reflected by a target, (b) range (distance) and (c) a finite

Card 1/2

ACCESSION NR: AP4009977

number of range derivatives. A variable-delay ideal line is used as a model for calculating the moving-target-reflected signal. The transient function of this model is calculated. Evaluations are found by the method of maximum a-posteriori probability. White, normal noise is assumed. It is shown that a-priori information about the range derivatives may have an essential effect on the dispersion of range errors and particularly on range derivatives. The formulas developed permit estimating the errors of a simultaneous measurement of any finite number of range derivatives with an allowance for a-priori data. Orig. art. has: 3 figures and 15 formulas.

ASSOCIATION: none

SUBMITTED: 22Dec62

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: RA

NO REF SOV: 002

OTHER: 000 -

Card 2/2

L 45385-66 EWT(a)/T IJP(c)

SOURCE CODE: UR/0044/65/000/012/BO41/BO41

ACC NR: AR6016602

23
BAUTHOR: Krasnogorov, V. A.TITLE: Application of the method of orthogonal trajectories to finding the type of a singular point

SOURCE: Ref. zh. Matematika, Abs. 12B211

REF SOURCE: Tr. Samarkandsk. un-ta, vyp. 151, 1964, 93-107

TOPIC TAGS: first order differential equation, nonlinear differential equation

ABSTRACT: The author considers the equations

$$\frac{dy}{dx} = \frac{P(x, y)}{Q(x, y)} \quad (1)$$

and

$$\frac{dy}{dx} = -\frac{Q(x, y)}{P(x, y)} \quad (2)$$

under the assumption that P and Q in some neighborhood of the point O(0,0) satisfy a Lipschitz condition in x and y and that O(0,0) is an isolated singular point of equations (1) and (2). He proves that the types of distributions of the integral curves of equations (1) and (2) in a neighborhood of the point O are found to be in correspondence as follows: to the center (of one equation) corresponds a node (of the other), to a focus — a node or focus, to a covering by hyperbolic (elliptic) regions separated by separatrices — also coverings. A. Andreyev [Translation of abstract]

SUB CODE: 12

UDC: 517.917

Card 1/1 *all in*

VORONTSOV-VIL'YAMINOV, Boris Aleksandrovich; KRASNOGORSKAYA, Alisa
Arkad'yevna; Primali uch#stiya: TSITSIN, F.A.; PONOMAREVA,
G.A.; MAKAROV, A.N.; KUKARKIN, B.V., prof., otv.red.;
YERMAKOV, M.S., tekhn.red.

[Morphological catalog of galaxies. Part 1. Catalog of 7,200
galaxies with declinations from 90 to 45] Morfologicheskii
katalog galaktik. Chast' 1. Katalog 7200 galaktik ot
90 do 45 sklonenii. Moskva, Izd-vo Mosk.univv., 1962.
205 p. (Moscow. Universitet. Gosudarstvennyi astronomicheskii
institut. Trudy, vol.32). (MIRA 16:2)
(Galaxies--Catalogs)

KRASNOGORSKAYA, M. N.

LYKHINA, E. T., ERENBURG, G. S., KRASNOGORSKAIA, M. N., LIFSCHITZ, I. I.

Gravimetric and quantitative methods of determination of dust in industry. Gig. sanit., Moskva No. 7, July 50. p. 3-5

1. Of the Aerosol Laboratory, State Scientific-Research Institute of Labor Hygiene and Occupational Diseases in Leningrad.

GLML 19, 5, Nov., 1950

C. A. KRASNOGORSKAYA, M. N.

13

Silicosis from melting bauxite. M. N. Krasnogorskaya...
(Ind. Hyg. Inst., Leningrad). *Gigiena i Sanit.* 1951, No. 10,
20-24. Examn. of working conditions at the sites of bauxite
melting and production of SiC revealed rather heavy dust
formation during the operation proper. In several cases
silicosis in various stages was detected, but no severe cases
were found. Better ventilation is suggested. G. M. K.

Experimental and plant-performance data for hydro-
cyclones (liquid cyclones). C. Krijgaman (Centraal Proef-
sta. Staatsmijnen Nederland, Heerlen). *Chem.-Ing.-Tech.*

23, 640-2(1951) - Data are presented on hydrocyclones
used as thickeners in starch processing, as classifiers for
highly viscous and non-Newtonian liquids and as washers in
ore prepn. Karl Kammermeyer

KRASNOGORSKAYA, N. V.

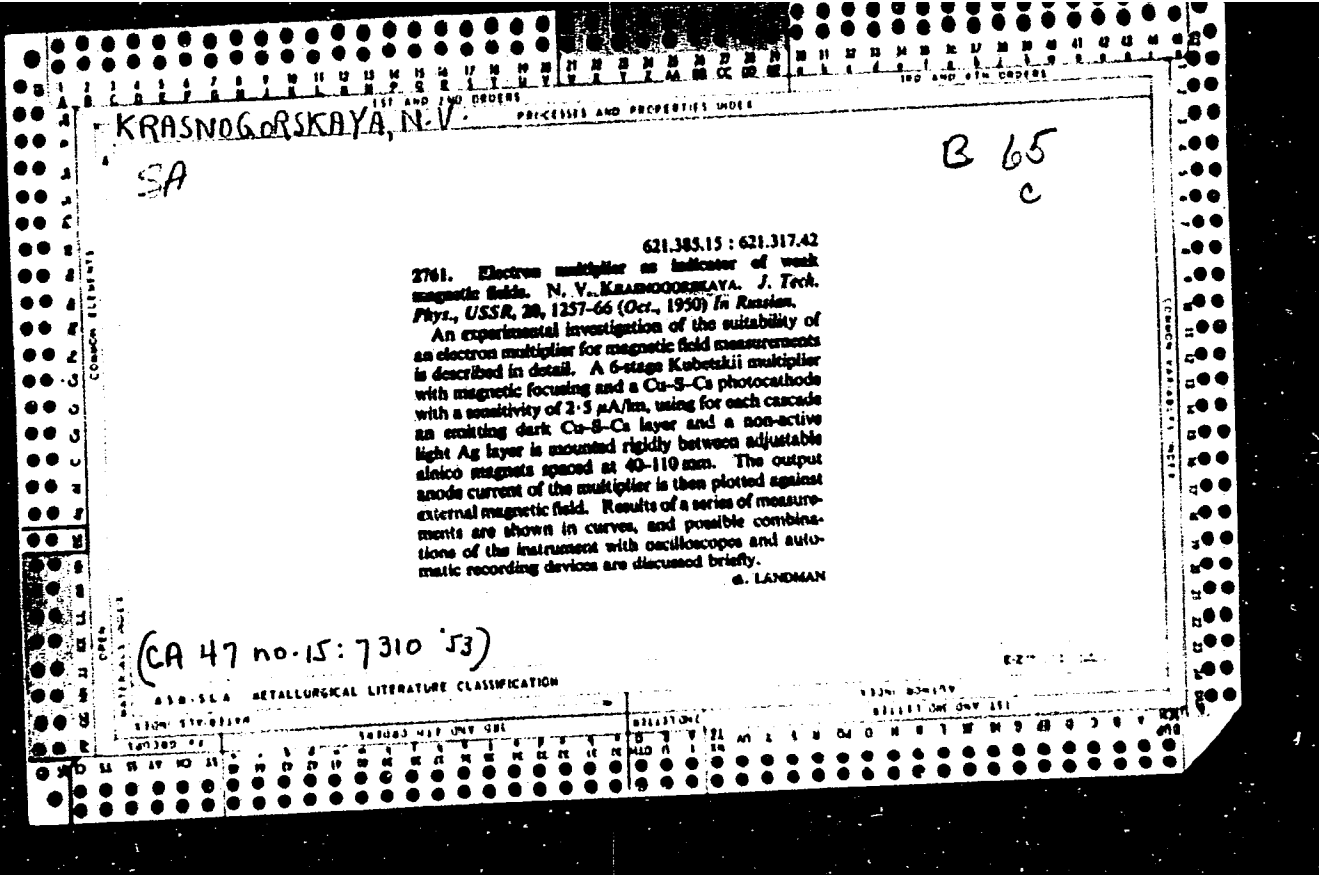
SA

RS 64
0

Investigation of the Kubetski "magnetic" tube as a magnetic field indicator. KALASHNIKOV, A. G., AND KRASNOGORSKAYA, N. V. C.R. Acad. Sci. URSS, 56 (No. 7) 703-5 (1947) In Russian.—The Kubetski multiplier tube with a CuS-Cs cathode and 6 cascades with a photo-sensitivity of $1.3\text{-}\mu\text{A/lumen}$ is investigated as an indicator of an external magnetic disturbance. The anode current is plotted against the magnetic field of the focusing current. A resonance effect is shown, the operational point being then chosen on a steep linear portion of the curve. A sensitivity of $14\text{ }\mu\text{A/oersted}$ is obtainable. A. L.

10

Inst. Theoretical Geophysics, AS USSR



176T45

KRASNOGORSKAYA, N. V.

USSR/Geophysics - Geomagnetism
Magnetometer Jan/Feb 51

"Study of Conditions Governing Application of
Kubetskiy's Mosaic Multiplier as Indicator of
Magnetic Field," N. V. Krasnogorskaya, Geophys
Inst, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geog i Geofiz" Vol XV,
No 1, pp 43-50

Investigates possible const of inertialless
magnetometer based on Kubetskiy's secondary-
electron multiplier with magnetic focusing.
Analyzes conditions governing stability of

176T45

USSR/Geophysics - Geomagnetism Jan/Feb 51
(Contd)

feeding multiplier for given accuracy of read-
ings of magnetic field intensity and limits of
possible measurements.

176T45

KRASNOGORSKAYA, N.V.

5.6-218 /531.378.11:531.504.05
 Krasnogorskaya, N.V. Elektronnyi umnozhitel' kakh pribor dlia izmereniia razmerov
 chastykh zhidkikh [Electronic amplifier as an instrument for measuring the size of precipi-
 tation particles.] *Akademiya Nauk SSSR, Izvestiya Ser. Geofizicheskaya*, No. 5:60-61, 1952.
 2 figs., 7 refs., 6 eqs. DLC—Photoelectric method for the measurement of the dimension of
 moving and resting particles tested under laboratory conditions. Sizes of drops can be
 measured with an accuracy up to 1%. If the accuracy of the heating current is 0.1% and of the
 amplifier current 0.1%. Relationship between the size of the drop (d) and the impulse
 amplitude (V) is $V = Ad^2 + Bd$. A and B depend on experimental conditions. *Subject*
 headings: 1. Raindrop size measurement. 2. Electronic amplifiers. — A.A.

Geophys

HW

Geophysics Inst, AS USSR

KRASNOGORSKAYA, N.V.

USSR/Geophysics - Precipitation particle size distribution

FD-2894

~~Card 1/2~~ Pub. 45 - 5/11

Author : Krasnogorskaya, N. V.

Title : Photoelectric method for investigating the distribution of sizes of particles in precipitations

Periodical : Izv. AN SSSR, Ser. geofiz., Nov-Dec 1955, 529-537

Abstract : The author expounds the results of a test under field conditions of a method and apparatus for the simultaneous measurement of electric charges and dimensions of rain drops. The developed apparatus can successfully be used to study the characteristics of individual rain drops with disruption of their shape and state. She finds the results of the simultaneous measurements of drop sizes by means of the photoelectric method and by the familiar method of impressions on filter paper to be in satisfactory agreement. She thanks L. R. Tsvang and V. P. Voronov, who designed and tested the apparatus, and also A. Ye. Mikirov and S. I. Krechmer, who worked out the optical system of the drop-guage. Five references: e.g. N. V. Krasnogorskaya, "Electron multiplier as a device for the measurement of size of precipitation particles," *ibid.*, No 5, 1952.

Geophysics Inst. AS USSR

KRASNOGORSKAYA, N.V.

Results of measuring electric charges of particles of precipitation
in the free atmosphere. Izv.AN SSSR.Ser.geofiz.no.7:844-852 J1 '56.
(MIRA 9:9)

1.Akademiya nauk SSSR, Geofizicheskiy institut.
(Atmospheric electricity) (Precipitation (Meteorology))

49-58-4-9/18

AUTHOR: Krasnogorskaya, N. V.

TITLE: Changes in the Electrical Conductivity of Air in Different Meteorological Conditions (Izmeneniye elektricheskoy provodimosti vozdukh v razlichnykh meteorologicheskikh usloviyakh)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 4, pp 527-535 (USSR)

ABSTRACT: Changes in the electrical conductivity of air, which are connected with spatial and time oscillations in the density of positive and negative ions, determine the electrical processes which take place in the atmosphere. In the present work an estimate is made of some meteorological and electrical factors in the changes of the electrical conductivity of air near the earth's surface. Measurements of the conductivity of air and the electrical field were carried out between April and September 1956 at heights of 2140 metres (Azau) and 3080 metres (Terskol Peak) above sea level. Horizontally, stations were located at distances of about 2000 metres. The conductivity was measured by the aspirator method suggested by Gerdien in 1905 (Ref.1). The instrument used is shown in Fig.1 and is in the form of a cylindrical condenser the outer electrode of which is connected to a source

Card 1/3

49-58-4-9/18

Changes in the Electrical Conductivity of Air in Different Meteorological Conditions.

of positive or negative potential as required. The air is drawn through the instrument with a speed of 7 m/sec by means of a ventilator attached to it. The potential appearing on the inner electrode, due to the accumulation of charged ions of given sign in a time t , is measured and recorded automatically by torsion electrometers working in conjunction with photoelectric recorders. A protecting hood is placed above the measuring cylinder to prevent the entry of undesirable matter into the measuring region. Simultaneously with the measurement of conductivity the electric field in the atmosphere was measured by means of dynamic field-meters or radioactive collectors. At the same time the humidity, pressure, temperature, etc., were measured. It was established that in the presence of large potential gradients in the electric field the conductivity of the air at the earth's surface decreases independently of weather conditions, and as the intensity of the electric fields increases the ion density opposite in sign to the vertical component of the potential gradient of the field decreases rapidly. In stratus-cumulus clouds the conductivity of air is considerably reduced due to the interaction of the cloud drops with both positive and

Card 2/3

49-58-4-9/18

Changes in the Electrical Conductivity of Air in Different Meteorological Conditions,

negative ions. Preferential adsorption of negative ions by cloud drops in stratus-cumulus clouds does not occur near the Earth's surface. This is in complete disagreement with Frenkel's theory (Ref.15). The following persons are thanked for their collaboration: G. G. Belov, V. I. Solodovnikov and A. N. Belova. There are 7 figures, 3 tables and 15 references, of which 2 are German and the rest are Soviet.

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

SUBMITTED: February 26, 1957.

1. Atmospherics--USSR 2. Air--Electrical properties 3. Air--
Meteorological factors 4. Electric fields--Measurement

Card 3/3

3,5000

S/049/60/000/01/010/027

E201/E191

82246

AUTHOR: Krasnogorskaya, N.V.

TITLE: Investigation of the Processes of Electrification of
Cloud Particles and Precipitates

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,
1960, No 1, pp 89-97

TEXT: A quantitative analysis is given of the possible mechanisms of charging of the cloud particles and precipitates based on the experimental data obtained at the high-altitude "Terskol" observatory in El'bruss mountains (Tables 2-5) and by measurements using an IL-14 aircraft (Fig 2). Comparison of the experimental data with theoretical calculations showed that none of the known mechanisms of ion deposition on droplets (Table 1) explains the large observed charges of raindrops. These large charges may be acquired by raindrops by gravitational coagulation in clouds (Table 1, Fig 1). As these clouds fall towards the earth some of their charges are lost by conduction through the air. Acknowledgements are made to Yu.F. Ivanov for development of the Card 1/2

S/049/60/000/01/010/027

E201/E191 82246

Investigation of the Processes of Electrification of Cloud
Particles and Precipitates

measuring apparatus, and to Yu.S. Sedunov and O.K. Timofeyeva
for their help in experiments.

There are 2 figures, 5 tables and 28 references: 15 Soviet,
11 English and 2 German.

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

SUBMITTED: May 23, 1959

Card 2/2

X

37326

S/169/62/000/004/034/103
D228/D302

3,5130

AUTHOR: Krasnogorskaya, N. V.

TITLE: Atmospheric-electrical changes in the vicinity of
El'brus

PERIODICAL: Referativnyy zhurnal Geofizika, no. 4, 1962, 25-26,
abstract 4B169 (V sb. Fiz. oblakov i osadkov, v.2 (5),
M., AN SSSR, 1961, 108-126)

TEXT: The author discusses the results of complex measurements of the elements of atmospheric electricity in clouds and precipitation according to data obtained at alpine stations in the El'brus area in 1953-1954. The measurements of the overall and the free charges of precipitation particles, the electrical field, and the air's conductivity were fulfilled simultaneously at two stations: in the "Terskol" observatory, situated in the Azau Valley at a height of 2140 m above sea-level; and at the station "Pik Terskol", situated at an altitude of 3050 m above sea-level. The rain drop sizes and the precipitation intensity were measured at the "Terskol"

Card 1/5

Atmospheric-electrical changes ...

S/169/62/000/004/034/103
D228/D302

observatory in addition to the enumerated characteristics. The charge and the size of rain drops were simultaneously measured for each drop by the induction and the photoelectric methods respectively. The results of the measurements of the air's conductivity and the gradient of the electrical field's potential in clouds and in precipitation are given. It follows from the cited material that in the presence of cloud at a station the air's conductivity decreases as compared with cloudless weather; the relative decrease of both the positive and the negative conductivity in clouds is thereby approximately the same. Consequently, the preferential absorption of negative ions by water drops in the cloud development stage under investigation is absent according to the data. The fine-drop fraction prevails in the precipitation studied in the El'brus area; the particles bear positive and negative charges of about several units $\times 10^{-3}$ e.s.u. On the increase in precipitation intensity the size and charge distribution of drops grows to the side of higher values for the drop dimensions and charges. The temporal variation in the flow density of the precipitation (snow

Card 2/5

Atmospheric-electrical changes ...

S/169/62/000/004/034/103
D228/D302

and rain) is, as a rule, opposite in sign to the gradient of the electrical field's potential. It is theoretically estimated how the charge q_0 on a rain drop of radius r , situated in an electrical field E in an ionized medium with an air conductivity λ_+ , λ_- , changes with the time t . The solution of the corresponding differential equation has the form:

$$q = \frac{\alpha(q_0 - \beta) - \beta(q_0 - \alpha) \cdot e^{-2\pi\lambda t}}{q_0 - \beta - (q_0 - \alpha) \cdot e^{-2\pi\lambda t}} \quad (1)$$

where

$$\alpha = \frac{3}{2} \frac{Er^2}{k}, \quad \beta = 6Er^2k, \quad k = \frac{\lambda_+ + \lambda_-}{\lambda_+ - \lambda_-}$$

Card 3/5

Atmospheric-electrical changes ...

S/169/62/000/004/034/103
D228/D302

When $t \rightarrow \infty$ an equilibrium charge value of

X

$$q_{\infty} = \frac{3}{2} \text{Er}^2 \frac{\lambda_+ - \lambda_-}{\lambda_+ + \lambda_-} \quad (2)$$

is obtained from correlation (1). The expected charge values, acquired by rain drops on their fall through an ionized medium in a homogeneous electrical field, are estimated on the grounds of the obtained correlations and experimental data. The calculation shows that the decrease in the absolute magnitude of the charge on the drops, occurring in an ionized medium in an electric field, may be guaranteed by a surplus of ions, opposite in sign to the initial charge on the drops. The considered charging mechanism only causes the overcharging of small particles ($d = 0.1 \text{ mm}$); large particles ($d = 4 \text{ mm}$) at the level of the "Terskol" observatory ($\sim 2000 \text{ m}$) do not change the sign of the initial charge. Consequently, there must be a critical size, below which all drops are charged by

Card 4/5

Atmospheric-electrical changes ... S/169/62/000/004/034/103
D228/D302

one sign, and above which by another. This conclusion, however, is not confirmed by the experimental data. The actual processes of drop charging appear to be considerably more complex than the scheme under consideration. The cited experimental data provide grounds for constructing a hypothesis for the genesis and the development of electrical activity in clouds. 15 references. [Abstracter's note: Complete translation.]

4

Card 5/5

S/169/62/000/005/052/093
D228/D307

AUTHOR: Krasnogorskaya, N. V.

TITLE: Electric state of the atmosphere in the vicinity of
El'brus

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 5, 1962, 28-29,
abstract 5B196 (V sb. Fiz. oblakov i osadkov, v. 2
(5), M., AN SSSR, 1961, 127-133)

TEXT: The electric field intensity, both the polar conductivities
of the air, and the radioactivity of the air were measured during
1957 at two stations in the vicinity of El'brus: in the Azau Valley
at a height of 2140 m and on Terskol Peak at an altitude of 3100 m.
An attempt is made to construct the diurnal and the annual variations
of the field intensity and the polar air-conductivities from
the data of an average of 13-14 hrs of observation during one
month; the diurnal variation was plotted from the data of an average
of 20 hrs of observation for each interval of time. The mean
field intensity value on Terskol Peak is 50 V/m; in the Azau Valley

Card 1/2

S/169/62/000/005/052/093
D228/D307

Electric state of ...

it is about 24 V/m. A large part of the field alterations in both the diurnal and the annual variations is caused by the influence of conductivity changes. The air's radioactivity in the valley amounts on an average to $0.74 \times 10^{-16} \text{ c/cm}^3$, being 0.48×10^{-16} on the peak; the changes in the air's radioactivity reach $0.53 \times 10^{-16} \text{ c/cm}^3$ (damp ground) and $1.36 \times 10^{-16} \text{ c/cm}^3$ (on snow-covered slopes) in the valley, and on the peak they reach $0.3 \times 10^{-13} \text{ c/cm}^3$ and $0.59 \times 10^{-16} \text{ c/cm}^3$. For the valley the calculation from the data on the air's conductivity gives on clear days a positive ion concentration of 1500 cm^{-3} and a negative concentration of 1060 I/cm^3 ; on the peak these concentrations respectively equal 960 and 460. The unipolarity coefficients for these stations comprise 1.5 and 2.1. When the field's sign changes, the unipolarity coefficients at both stations become smaller than unity; in the author's opinion this is connected with the action of the electrode effect. [Abstracter's note: Complete translation.]

Card 2/2

3,5800
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

X

29578

S/049/61/000/005/013/013

D216/D306

The induction method of ...

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

$$Q = -q \varphi(z, r) \quad (1)$$

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

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

Card 2/8

X

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

The induction method of ...

where h is the height of the ring, I_0 is a modified Bessel function, and the boundary conditions $r = r_0$, $\varphi = \varphi_0$ $|z| < h/2$ are

$$\varphi = 0 \quad |z| > h/2$$

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

Card 3/8

X

29578

S/C49/61/000/005/013/013

D216/D306

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

Card 4/8

X

The induction method of ...

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

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

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

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

Card 5/8

29578

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

The induction method of ...

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 probability of finding only 1 particle in the volume of the ring cavity is much larger than that of

Card 6/ 8

X

The induction method of ...

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

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

$$k_1 \approx \frac{nV}{2} = \frac{1}{2} \pi n r_1^2 (r_0 + h) \quad (13)$$

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 $\frac{r_0+h}{u}$ 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

Card 7/8

29578

S/049/61/000/005/013/013
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 26, 1959

Card 8/8

X

S/049/61/000/009/003/004
D214/D304

AUHTOR: Krasnogorskaya, N.V.

TITLE: Electric field of cumulus clouds

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya,
no. 9, 1961, 1426 - 1436

TEXT: The author proposes mathematical models for charged cumulus clouds and compares these models with ground and aircraft measurements of atmospheric electric fields. Cumulus clouds are represented by uniformly charged ellipsoids. If there is a spatial separation of droplet charges, a cumulus cloud is represented by two adjacent uniformly charged ellipsoids, e.g. a positive ellipsoid immediately above a negative one (clouds which are negative in their lower part and positive above are called polarized clouds). Electric fields are calculated by the method of images with the ground assumed to be a conducting plane. Theoretical expressions are obtained and plotted for electric fields (potential gradients

Card 1/3

Electric field of cumulus clouds

S/049/61/000/009/003/004
D214/D304

in volts/meter) above a cumulus cloud, immediately below it and on the ground. Theoretical curves are also derived for the variation of electric fields with height for polarized and unpolarized cumulus clouds. These curves are compared with aircraft measurements of electric fields at various heights below a particular cumulus cloud (extending from 1300 to 1900 m in height) and in the cloud itself. The agreement between theory and experiment is reasonable, confirming the validity of uniformly charged ellipsoid models. It is found that the volume charge density in the cloud, calculated from ground measurements directly below the cloud, is somewhat higher than the real density (the charge densities were of the order of 10^{-8} - 10^{-6} e.s.u./cm³). It is always necessary to allow for electric fields present even on cloudless days, because such fields are of the same order as those due to cumulus clouds. Acknowledgement is made to O.K. Timofeyeva who carried out numerous calculations used by the author. There are 9 figures and 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-

Card 2/3

Electric field of cumulus clouds

S/049/61/000/009/003/004
D214/D304

language publications read as follows: O.D. Kellogg, Foundations of Potential Theory, Berlin, 1929; B. Vonnegut and C.B. Moore, Preliminary Attempts to Influence Convective Electrification in Cumulus Clouds by the Introduction of Space Charge into the Lower Atmosphere, Recent Advances in Atmospheric Electricity, Pergamon Press, 1958.

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

SUBMITTED: July 14, 1960

Card 3/3

32703
S/049/61/000/012/007/009
D207/D303

3,5130

AUTHOR: Krasnogorskaya, N.V.

TITLE: Investigating atmospheric electricity in the El'brus region

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 12, 1961, 1862 - 1874

TEXT: The author reports on measurements of the electric field, conductivity of air, charge and dimensions of precipitated particles, all carried out at stations on the slopes of the El'brus mountain; the results of measurements are analyzed and some general conclusions drawn from them. Measurements were carried out at the Terskol Observatory in the Azau Valley (2142 m above sea level), at the following stations on one side of the Valley: Terskol Peak (3120 m), Ledovaya Baza (3900 m), Shelter 11 (4200 m), Shelter 9 (4250 m), as well as at Cheget Peak (3100 m) on the opposite side of the Valley. The observations were obtained mainly in 1956-59, but earlier work (1930-33) is also cited in the ana-

Card 1/4

32703

S/049/61/000/012/007/009

D207/D303

Investigating atmospheric ...

lysis of the results. The following conclusions were drawn from the analysis: (1) In the El'brus region the air was ionized more strongly than in the plains. The distribution of light ions along the slopes was governed primarily by the magnitude and direction of the electric field and by the turbulent mixing of the atmosphere. Increase of the field intensity reduced the density of ions opposite in sign to the field. The total density of light ions depend on the state of the ground. (2) In cumulostratus clouds formed in the Valley the positive conductivity of air decreased more rapidly with time than the negative conductivity due to the predominantly negative charge of cloud drops. This negative charge, especially the charge in the lower portions of the clouds, produced negative fields below the clouds. The assumption of uniform charge distribution in the clouds gave a mean charge density value of the order of 10^{-9} - 10^{-7} e.s.u./cm³. (3) The mean charge on particles in various types of precipitation varied from 2×10^{-4} e.s.u. (wet snow) to 7×10^{-3} e.s.u. (rain with hail). The time dependence of the electric field in precipitation was opposite to the time dependence

Card 2/4

32703

S/049/61/000/012/007/009
D207/D303

Investigating atmospheric ...

of the sign of the total precipitation charge. Variation of the electric field in precipitation was governed primarily by spatial displacement of charges on precipitation particles and by the volume charge remaining in the cloud. The distribution charges on rain or snow particles was close to the normal frequency curve. (4) The charge of raindrops decayed exponentially with time and the rate of disappearance depended on the polar conductivities of air, but not on the electric field. Discharge from sharp points of rocks appeared in strong electric fields and this ionized the air charging raindrops oppositely to the sign of electric field. Acknowledgments are made to Ye.K. Fedorov for his advice and to V.I. Solodovnikov and G.G. Belov for their help. There are 7 figures, 7 tables and 24 references: 21 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: G.C. Simpson, Geophys. Mem. (Met. Office, London) 4, no. 84 (1949); C.T.R. Wilson, Proc. Roy. Soc., A236, no. 1206 (1956); R. Gunn and G.D. Kinzer, J. Meteorol., 6, (1949)

Card 3/4

Investigating atmospheric ...

32703
S/049/61/000/012/007/009
D207/D303

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

SUBMITTED: April 4, 1961

+

Card 4/4

KRASNOGORSKAYA, N.V.

"Atmospheric electricity research in the USSR."

Report submitted to the Third Intl. Conf. on Atmospheric and Space
Electricity, Montreaux, Switzerland May 1963

L 41761-02 (ENG)/INT(1)/REC(1)/SEC 04-5/Pac-2 GM
ACCESSION NRC APL03023

8/0019/61/000/001/0587/0595

31
E

AUTHORS: Krasnoperovskaya, N. V.; Seredkin, A. A.

TITLE: On space charge in lower atmospheric layers

SOURCE: AN SSSR. Izvestiya, Seriya fiziko-matematicheskaya, no. 4, 1964, 587-595

TOPIC TAGS: air ionization, atmosphere, cloud, space charge density, electric potential, negative ion

ABSTRACT: Experimental investigations were made to determine space charge distributions in the free atmosphere, and the results of direct measurements were compared with some theoretical calculations. In the theoretical model, the equations of motion of light ions in an electric field were studied at a charged cloud-ionized atmosphere boundary. The analysis leads to the equation for space charge

$$\phi(x) = \phi_0 - (U_0 - U_1) = \text{erf} \left\{ \text{erf} \left[\frac{x}{\sqrt{2} \tau (n_+ - n_-)} \right] \right\} \\ - \text{erf} \left\{ \frac{x - 1/2 \tau (n_+ - n_-)}{\sqrt{2} \tau (n_+ - n_-)} \right\}$$

where τ = ion lifetime, n_+ , n_- = positive and negative ion densities, and x = vertical coordinate

L 41761-65

ACCESSION NR: AP6033023

tional coordinate. The principal method used for determining the space charge distribution was a filtering technique by W. N. Ohlensky (Über elektrische Ladungen in der Atmosphäre, Ann. Phys., 17, 1925). The device was carried on an airplane and consisted of (see Fig. 1 on the Enclosure) a metallic cylinder (1) to which teflon pieces were attached as insulators and placed in a metallic container (3). The filters (4) and the air inlet (6) complete the device. The measurements of positive and negative ions in the space charged air were made during summer and fall seasons of 1961-1962 in an Be-10 airplane and at an altitude range of 25 to 6000 m. The flights were made over dry land—RSFR, UkrSSR, and Kirgizia SSR—as well as on the Black Sea (Odessa District). The results are given graphically, depicting curves for space charge distribution, electric field gradients, and ion densities over dry land and sea, and cloudless conditions. In cloudless weather conditions the space charge distribution over dry land has positive and negative magnitudes and varies in the limits 0 to 9×10^{-8} esu/cm³. On the average, the space charge density is lower over the sea than over dry land. Furthermore, the average positive space charge density at the bottom of cumulus clouds exceeds the density of cloudless air. Under weak cumulus clouds and 100-500 volt/m gradients no secondary charge formation could be observed. Orig. art. has: 10 equations, 9 tables, and 2 figures.

ASSOCIATION: none

Card 2/11

ACCESSION NR: AP4012085

S/0020/64/154/002/0325/0328

AUTHOR: Krasnogorskaya, N. V.

TITLE: Calculating the collision effectiveness of comparable size particles

SOURCE: AN SSSR. Doklady*, v. 154, no. 2, 1964, 325-328

TOPIC TAGS: droplet collisions, effective trajectory, effective collisions, inertial force, hydrodynamic force, electrical force, charged particles, electric field, droplet blending, precipitation, uncharged particles

ABSTRACT: A theoretical estimate has been made of the collision effectiveness of similar size drops in the presence of inertial, hydrodynamic and electrical forces. A comparison of the collision effectiveness of uncharged drops in the presence and absence of an electric field reveals that fairly large electric fields can substantially increase the collision effectiveness of the size of particles whose collisions are much less effective or even nonexistent under the effect of hydrodynamic forces alone. The slower the relative

Card 1/2

ACCESSION NR: AP4012085

movement of the drops, the greater the impuls of the electrical forces. The closer the uncharged particles are in size, the greater the effect of the electric field on their collisions. The effect of the electric field on the collision effectiveness of charged drops depends on the magnitude and sign of the charge as well as the relative position of the drops. Depending on the combination of the mentioned parameters, the electric field can accelerate or retard the blending process of the charged drops as compared to the uncharged ones.

"In conclusion, the author expresses his gratitude to V. N. Lebedev, L. I. Ponomarev, I. V. Yegorov, A. M. Volkov and V. A. Zav'yalova for their participation in programming the electronic computers and making the calculations."

Orig. art. has: 2 Figures, 14 Formulas and 1 Table.

ASSOCIATION: Institut prikladnoy reofiziki Akademii Nauk SSSR
(Institute of applied geophysics of the SSSR Academy
of Sciences)

SUBMITTED: 22May63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: PH
Card 2/2

NR REF SOV: 003

OTHER: 012

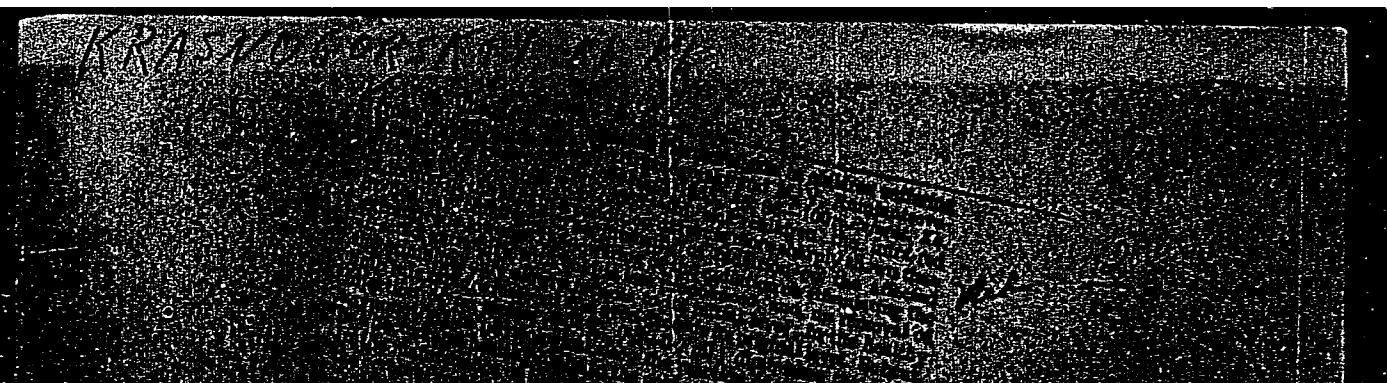
KRASNOGOREKAYA, N.V.

Effect of electrical forces on the coagulation of particles of comparable sizes. Izv. AN SSSR. Fiz. atn. i okeana 1 no.3:339-345 Mr '65. (MIRA 18:5)

1. Institut prikladnoy geofiziki AN SSSR.

"APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000826120

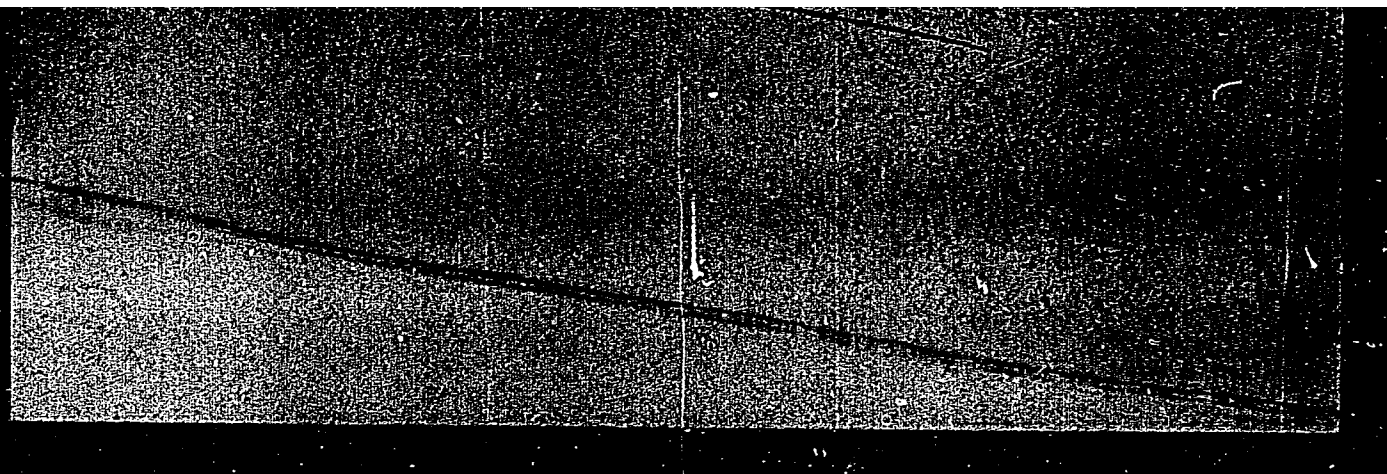


APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000826120C

"APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000826120



APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000826120C

KRASNOGORSKIY, N. I.

Krasnogorskiy, N. I. "Change in the physiological activity of the sensor in children in feeding disruptions," Trudy VI Vsesoyuz. s'yezda det. vrachev, posvyashch. pamyati prof. Filatova, Moscow, 1949, p. 47-52

SO: U-326h, 18 April 1953, (Istopyis 'Zhurnal 'nykh Stary, No. 3, 1949)

КРАСНОГОРСКИЙ, И.И.

34134. O bliyanii pitaniya, rosta i nekotorykh endokrinnykh faktorov na fiziologicheskuyu deyatel'nost' golovnoy mozga u detey. V sb: Problemy kortiko-vistseral'noy patologii. M., 1947, s. 376-84.

SO: Znishnaya Letopis' No 6, 1955

KRAVCHENKO, N.I.

36470

Akademik I. P. Pavlov i ego Ucheniye V Pediatrii. Voprosy Pediatrii i Okhrany Materi-nstva i Detstva, 1949, Vyp. 5, S. 12-15.

SO: Letopis' Zhurnal'nykh Statey, Vol. 49, Moskva, 1949

KRASNOGORSKIY, N. I.

32730. Znachyeniye dlya pediatrii uchyeniya I. P. Pavlova o vysshey nervnoy deyatel'nosti. *Pediatriya*, 1949, No. 5, s. 13-19, s. Portr.

SO: *Letopis' Zhurnal'nykh Statey*, Vol. 44, Moskva, 1949

KRASNOGORSKIY, N.I.

Phase functional modifications of large hemisphere in children.

Zh. vysshei nerv. deiat., Pavlova 1 no. 1:36-46 Jan-Feb 1951.

(CJML 22:5)

1. Conditioned reflexes; signal systems.

KRASNOGORSKIY, N.I.

Certain aspects in application and development of the Pavlovian theory on the higher nervous function in clinical pediatrics. Zh. vysshei nerv. deiat. 1 no. 6:793-806 Nov-Dec 1951. (CJML 23:3)

1. Leningrad.

KRASNOGORSKI, N. I.

Significance of Pavlov's theory on the higher nervous system function in pediatrics. *Pediat. listy* 6 no.3:130-133
May-June 1951. (CJML 20:11)

1. Member of the Academy of Medical Sciences USSR.

KRASNOGORSKIY, N. I.

Growth

Fiftieth anniversary of Pavlov's theory of conditioned reflexes. Vop.pediat.i ckh.mat.i
det. 19 no. 6, 1951.

Monthly List of Russian Accessions, Library of Congress, April 1952. Unclassified.

KRASNOGORSKIY, N.I.

50th Anniversary of Pavlov's conditioned reflexes. *Pediatria, Moskva*
No.1:3-9 Jan-Feb 52. (CJML 21:4)

1. Honored Worker in Science, Active Member of the Academy of Medical
Sciences USSR.

ALYAKRINSKIY, V.V.; KRASNOGORSKIY, N.I., zaveduyushchiy.

Inhibitory conditioned responses to different intensities of one and the same stimulus in children. Trudy Inst.fiziol. 1:272-289 '52. (MLRA 6:8)

1. Laboratoriya fiziologii vysshey nervnoy deyatel'nosti rebenka.
(Conditioned response)

KRASNOGORSKIY, N. I.

Conditioned Response

Fifty years of Pavlov's theory of higher nervous function; conclusion *Pediatriia* no. 2, 19-52

Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

KRASNOGORSKIY, N.I.

Physiologic development of speech in children. Zh. vysshei nerv.
deiat. 2 no. 4:474-480 Jul-Aug 1952. (CML 23:3)

KRASNOGORSKIY, N. I.

Nervous System

Higher nervous activity in children. Nauka i zhizn' 19 No. 9, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

KRASHGOBSKIY, N.I.

Typical characteristics of the higher nervous system in children. Zh.
vyssei nerv. deiat. 3 no.2:169-183 Mar-Apr 1953. (CML 24:4)

1. Leningrad.

KRASNOGORSKIY, N.I.

[Studies on higher nervous functions in man and in animals] Trudy
po izucheniiu vysshei nervnoi deiatel'nosti cheloveka i zivotnykh.
Moskva, Gos. izd-vo meditsinskoi lit-ry. Vol. 1. 1954. 485 p.
(NERVOUS SYSTEM) (MLRA 7:7)

KHASNOGORSKIY, N.I. (Leningrad)

New data on physiology of speech activity. Zhur.vys.nerv.deiat. 6
no.4:513-524 J1-Ag '56. (MLBA 9:11)
(SPEECH, physiology,
(Rus))

KRASNOGORSKIY, N. F.
KRASNOGORSKIY, N. I., prof.

Development of the concept of the higher nervous activity in children;
on the 40th anniversary of Soviet health protection. *Pediatria*
no.10:51-59 0 '57. (MIRA 11:2)

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR.
(PEDIATRICS) (NERVOUS SYSTEM)

EXCERPTA MEDICA Sec 8 Vol 12/8 Neurology Aug 59

3842. DEVELOPMENT OF THE DOCTRINE ON THE HIGHEST NERVOUS ACTIVITY OF CHILDREN (TO THE 40TH ANNIVERSARY OF THE SOVIET PUBLIC HEALTH) (Russian text) - Krasnogorsky N. I. - PEDIATRYA 1957, 10 (51-59)

The conditioned reflex in childhood is typified by its quick formation, running through 4 stages (orientation-constitution-organization-automation), the duration of which varies individually. In each period of growth the physiological activity of the brain has its peculiarities. The neonatal brain is also capable of forming conditioned reflexes, reacting both to extero- and interoceptive stimuli. During the first 4 weeks of life, however, this is fairly limited because of quick exhaustibility, decrease of perceptiveness of the cortex with accelerated onset of physiological sleep (which is distinguished by the author from pharmacological and hypnotic sleep). Later on this capability quickly increases. Due to weak preponderance and insufficient differentiation of the cerebral cortex in newborns and babies there is an increased excitability of 'extracortical' innervation with a proneness to generalized discharge of irritation and/or suppression acting on lower levels. In fact, this age in particular is inclined to generalized fits. Studies on physiological sleep revealed the site of the strongest cortical cellular fatigue, i.e. within the motor and motor speech ('analysators'), as the true origin of somniferous inhibition. During sleep the salvatory reflexes are markedly diminished and there appears, originating in temporal areas, an inhibition of subthalamic and thalamic centres. In this way the patency of subcortical relay-stations for corticopetal input is reduced and the cerebral cortex is thus fractionally isolated, which state corresponds to sleep. The therapeutic importance of physiological sleep is stressed and the factors favouring it are reviewed, such as rhythmic contact, warmth, acoustic stimuli, verbal impressions (lullaby, fairy tale) and even fresh air acting on the child's skin as a gentle massage. In pediatrics, pharmacological sleep has little or no importance since it requires administration of the drug in toxic doses. Human speech, representing the highest form of conditioned development, has been studied by means of electro-oscillographic recordings and its speed has been measured by elaborate methods. In alimentary dystrophy the higher nervous activity undergoes a regress to extinction, whereas in cretinism any gains of conditioned reflexes are impossible or highly retarded. In both conditions infra-red studies demonstrate a decrease of vasomotor and thermo-adaptive reactions. In hypothyroidism, substitution with thyroxine is the therapy of choice, resulting in improvement of cortical excitability, increase in conditioned activity and normalisation of the

KRASHOGORSKIY, N.I., prof.

Abstractions and generalizations as basic physiological functions
of the child's brain. Vest.AMN SSSR 13 no.4:3-12 '58.
(MIRA 11:4)

1. Deystvitel'nyy chlen AMN SSSR
(CEREBRAL CORTEX, physiology,
abstraction & generalization in child (Rus))

KRASNOGORSKIY, Nikolay Ivanovich

[Higher nervous activity in a child] Vysshaya nervnaya deiatel'nost'
rebenka. Mediz. 1958. 319 p. (MIRA 12:3)
(CONDITIONED RESPONSE)

WMS WOODRUFF, W. L.

"New Investigations in the study of speech activity and their
importance to the hygiene of higher nervous activity."

report submitted at the 11th All-Union Congress of Hygienists, Epidemiologists
and Infectionists, 1949.

KRASNOGORSKIY, N.I., prof.

Peculiarities of the nervous system of the child. Zdorove' e 5
no.4:6-8 Ap '59. (MIRA 12:4)

1. Deystvitel'nyy chlen AMN SSSR.
(NERVOUS SYSTEM--HYGIENE)
(CHILDREN--MANAGEMENT)