"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N.A., dotsent (Kazan')

"Lateral curvature of the spine in children" by L.I.Shulutko. Reviewed by N.A. Gerasimova. Kaz. med. zhur. no.5:105-106 S-O'63 (MIRA 16:12)

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

ACC NR: AP7003722 SOURCE CODE: UR/0237/66/000/012/0017/0020

AUTHOR: Artamonov, O. M.; Gerasimova, N. B.; Komolov, S. A.

ORG: none

TITLE: Experimental study of the operation of a mirror electron optical system

SOURCE: Optiko-mekhanicheskaya promyshlennost', no. 12, 1966, 17-20

TOPIC TAGS: electron optics, electron mirror, mirror electron optics, surface potential distribution, retarding field

ABSTRACT: A description is given of a mirror electron optical system which makes it possible to obtain an image of the surface distribution of the potential. An experimental investigation was made of the dependence of the arising contrast on the system's parameters in the case of a periodic distribution of the potential on the surface of the object. The results showed that the contrast reaches a maximum value at a specific magnitude of intensity in the system's retarding field. The authors express their appreciation to Academician A. A. Lebedev for his constant interest to the study. Orig. art. has: 5 figs and 5 equations. [Translation of abstract]

SUB CODE: 20/SUBM DATE: 22May66/ORIG REF: 003/ [SP]
OTH REF: 007/ UDC: 621.384

Card 1/1

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

TATARSKIY, N.V.; GERASIMOVA, N.F.

Effect of aerosol penicillin therapy on changes of microflora in the sputum. Klin. med., Moskva 30 no. 6:64-66 June 1952. (CLML 22:5)

1. Of the Department of Pulmonary Tuberculosis (Head -- Prof. A. Ya. Tsigel'nik) and of the Department of Microbiology (Head -- Prof. V. N. Kosmodamianskiy), First Leningrad Medical Institute imeni Academician I. P. Pavlov.

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N.F.

Effect of iodine on the working capacity of the muscles as a pharmaco-toxicological agent and as a trace element. Farm. i toks. 24 no.5: 614-617 S-O '61. (MIRA 14:10)

1. Kafedra normal'noy fiziologii (zav. - prof. A.I.Venchikov) Turkmenskogo gosudarstvennogo meditsinskogo instituta.
(MUSCLES) (IODINE—PHYSIOLOGICAL EFFECT)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

SOMOVA, N.M. (Leningrad); GERASIMOVA, N.F. (Leningrad).

Practical application of the bacteriologic method in the diagnosis of tuberculosis. Klin.med. 31 no.12:19-23 D '53. (MLRA 7:1)

1. Iz kafedry mikrobiologii (zaveduyushchiy - professor V.N. Kosmodamianskiy) I Leningradskogo meditsinskogo instituta im. akad. I.P.Pavlova i bakteriologicheskoy laboratorii (zaveduyushchiy N.F.Gerasimova) Klinicheskoy bol'nitsy im. F.F.Eresmana.
(Tuberculosis--Diagnosis)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N.F.

Effect of potassium iodide on muscular work. Trudy Vses. ob-va fiziol., biokhim. i farm. 3:103-106 '56 (MLRA 10:4)

1. Kafedra fiziologii Turkmenskogo meditsinskogo instituta; zaveduyushchiy kafedroy professor A.I. Venchikov.
(POTASSIUM IODIDE) (MUSCLE)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

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LOGINOVA, L.G.; GERASIMOVA, N.F.; SEREGINA, L.M.

Requirement in thermotolerant yeasts of supplementary growth factors. Mikrobiologiia 31 no.1:29-34 Ja-F '62. (MIRA 15:3)

1. Institut mikrobiologii AN SSSR, Moskva.
(YEAST) (FERMENTATION)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N.G.; IVANOVA, T.F.; SVENTITSKIY, N.S.; STARTSEV, G.P.; TAGANOV, K.I.; TREMTOVIUS, M.E.

Spectral determination of hydrogen in metals. Izv.AN SSSR.Ser fiz. 19 no.2:147-148 Mr-Ap '55. (MIRA 9:1)
(Tartu--Spectrum analysis--Congresses)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N.G.; YAKOVLEVA, A.V.

High-illuminance spectographs with diffraction gratings. Prib. i tekh. eksp. no.1:83-86 Jl-Ag '56. (MLRA 10:2)

1. Gosudarstvennyy opticheskiy institut.
(Spectrograph)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N.G.; IVANOVA, M.K.; KULIKOV, S.A.; LOMONOSOVA, T.N.; YAKOVLEVA, A.V.

Investigating the reflection and transmission of various materials in the vacuum ultraviolet. Fiz.sbor. no.4:146-148 '58. (MIRA 12:5)

(Ultraviolet rays) (Reflection (Optics))

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N.G.; KULIKOV, S.A.

Vacuum monochromators and some measurements in the ultraviolet range of the spectrum. Opt.-mekh.prom. 25 no.1:17-24 Ja '58. (MIRA 11:7)

(Monochromators) (Spectrum, Ultraviolet--Measurement)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

FRIDRIKHSBERG, D.A.; GERASIMOVA, N.G.; POPKOVA, L.P.

Surface conductivity study in the region of the isoelectric state. Koll. zhur. 22 no.4:489-496 Jl-Ag '60. (MIRA 13:9)

1. Leningradskiy universitet im. A.A.Zhdanova, Kafedra kolloidnoy khimii.
(Ions--Migration and velocity) (Isoelectric point)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

KADENATSIY, A. N. (Professor), LUGOVIK, B. A. , GERASIMOVA, N. G. and BURIKOVA, Yu. N. (Assistants, Omsk Veterinary Institute)

"New repellent RV-5"

Veterinariya, vol. 39, no. 8, August 1962, p. 61

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

KADENATSII, A.N., prof.; LUGOVIK, B.A., assistent; GERASIMOVA, N.S., assistent; BURIKOVA, Yu.N., assistent

The new repellent RV-5. Veterinariia 39 no.8:61-63 Ag '62. (MIRA 17:12)

1. Omskiy veterinarnyy institut.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

NIKANDROVA, L. I.; GERASIMOVA, N. I.; IVANOVA, L. V.; KONDRATOVICH, G. A.; KRUGLOVA, Ye. G., red.; ERLIKH, Ye. Ya., tekhn. red.

[Analysis of electrolytes and solutions for electroplates and chemical coatings] Analiz elektrolitov i rastvorov; dlia gal'vanicheskikh i khimicheskikh pokrytii. Leningrad, Goskhimizdat, 1963. 310 p. (MIRA 16:3)

(Electrolytes—Analysis) (Electroplating)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

G[illegible]SIMOVA, [illegible], Cand Biol Sci --(diss)" ~~Characteristics~~ Peculiarities of the carbohydrate metabolism of ~~yeast~~ Pichia and Hansenula yeast varieties." Mos, 1959. 20 pp with graphs (Inst of Microbiology of the Acad ~~of~~ Sci USSR), 150 copies. Printed by duplicating ~~apparatus~~ machine (KL,30-59, 119)

-12-

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

PATEYEVA, M.V.; GERASIMOVA, N.M.

Conference on the microbiology of fermentative processes. Izv. AN SSSR. Ser.biol. no.5:644-646 S-O '57. (MIRA 10:10)
(FERMENTATION)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N.M.

USSR/Nuclear Physics - Energy distribution FD-2975

Card 1/1 Pub. 146 - 16/28

Author : Gerasimova, N. M.; Chernavskiy, D. S.

Title : Energy distribution of particles during instantaneous formation

Periodical : Zhur. eksp. i teor. fiz., 29, September 1955, 372-374

Abstract : L. D. Landau (Izv. AN SSSR, Ser. fiz., 17, 1, 1953) developed the hydrodynamic theory of formation of particles during collision of high-energy nucleons; the solution of the given hydrodynamic problem of expansion into vacuum consists of two parts: traveling wave and nontrivial solution (L. D. Landau, Ye. M. Lifshits, Mekhanika sploshnykh sred [Mechanics of continuous media], GITTL, p. 434, 1953). Here the nontrivial solution plays the main role in the angular distribution of particles in the problems of instantaneous generation, since the principal part of the entropy of the system is located in this solution. In this article the present writer clarifies the problem of to what extent the disregard of the traveling wave is correct in the calculation of the angular and energy distribution of particles, as was done by Landau. The writer thanks S. Z. Belen'kiy. Four references: e.g. S. Z. Belen'kiy, DAN SSSR, 99, 523, 1954 and ZhETF, 82,111, 1955.

Institution : Physical Institute im. P. N. Lebedev, Academy of Sciences USSR

Submitted : May 12, 1955

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

AUTHOR BELEN'KIY, S.Z., GERASIMOVA, N.E., PA - 2969

TITLE On the Absorption of Nuclear-Active Particles with High Energies. (O pogloshchenii yaderno aktivnykh chastits bol'shikh energiy - Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 3, pp 547-551, (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT Neither nucleons nor the influnce of heavy mesons and hyperons are taken into account by the present paper, for influence exercised by nucleons is not essential in the case of very high energies($>10^{14}$eV). The present paper is intended to derive an analytical expression for the dependence of the number of nuclear-active particles upon energy and depth. By means of ansatz $P(y,t) = e^{-t}\varphi(y,t)$ the following kinetic equation for the determination of propagation of nuclear-active particles is obtained, $\partial\varphi(y,t)/\partial t = \int_y^\infty \varphi(y_0,t)(\partial N/\partial y)dy_0$. Here $P(y,t)$ denotes the number of particles within the interval dy, $y = \ln E$, t - the amount of matter through which particles pass. This equation may also be written down in the form, $\partial\varphi(y,t)/\partial t = \mathcal{L}[\varphi(y,t)]$, where $\mathcal{L}$ denotes a linear integral operator. The authors study some properties of the operator $\mathcal{L}$. This operator $\mathcal{L}$ is supposed to act on a function of the type $\varphi(y,t) = Be^{\gamma y}$. The equation thus resulting is written down and discussed. When computing the integral expression contained therein, exponential accuracy is considered to be sufficient. The function in the exponent of this integral expression in near

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PA - 2969

On the Absorption of Nuclear-Active Particles with High Energies.

the maximum is developed in a series up to those terms which contain a second derivation. The factor before the exponent is put equal to its value in the maximum. The voluminous equation thus resulting is written down explicitly. The action of the operator $\mathcal{L}$ upon the function depending experimentally on energy furnishes an exponential spectrum, which, however, is somewhat softer than the primary one. Therefore the solution of the equation $\partial \mathcal{f}(y,t)/\partial t = \mathcal{L}[\mathcal{f}(y,t)]$ in the form of $\mathcal{f}(y,t) = Be^{-\gamma y} f(y,t)$ where $f(y,t)$ is considered to be a function depending slightly upon y. The solution of this rquation is discussed step by step and the results are shown in a table. (2 tables).

ASSOCIATION Physical Institue "P.N.LEBEDEV" of the Academy of Science of the USSR
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SUBMITTED 29.12.1955.
AVAILABLE Library of Congress.
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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N. M.

AUTHOR: Gerasimova, N.M. 56-3-15/59

TITLE: The Solution of Kinetic Equations for a High Energy Nuclear-Cascade Process. (Resheniye kineticheskikh uravneniyedlya yaderno-kaskadnogo protsessa pri bol'shikh energiyakh)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 3, pp. 637-644 (USSR)

ABSTRACT: With the aid of the given solutions of kinetic equations for a nuclear-cascade process in an atmosphere at high energies ($\sim 10^{12}$ eV) the absorption coefficient of the nuclear-active particles and the spectrum of the μ-mesotrons formed by the disintegration of π-mesotrons is calculated or given. On the occasion of the solution of the kinetic equations it is assumed that the elementary act is hydrodynamically describable, where the Landau function is used as energy-distribution function for the forming particles. It was improved in its hydrodynamic solution with the taking into account of the progressing waves. For the height dependence of the nuclear-active particles the calculated values are compared with experimental data (Moscow, Pamir) and found to be in good agreement. There are 1 figure, 2 tables, and 14 Slavic references.

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

The Solution of Kinetic Equations for High Energy Nuclear-Cascade Processes. 56-3-15/59

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

SUBMITTED: February 4, 1957.

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N.M.

AUTHOR: Gerasimova, N.M. 56-6-21/47

TITLE: Electromagnetic Radiation in High Energy Nuclear Interactions (Elektromagnitnoye izlucheniye pri yadernykh vzaimodeystviyakh bol'shikh energiy)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1957, Vol. 33, Nr 6(12), pp. 1457-1460 (USSR)

ABSTRACT: The present paper investigates the electromagnetic radiation occurring in nuclear collisions by the slowing down of superfast charged particles on the basis of the hydrodynamic model of nuclear interactions. The authoress for reasons of simplicity studies the collisions of 2 nuclei of the same kind with high energy. After contact has been established, a symmetry compression of matter takes place in the center of mass system by the shock wave, and thereby the hydrodynamic system is formed. After the passing of the shock wave and after total slowing down of the nuclei, symmetric flying apart begins, which is at first described by a traveling wave and later by a general onedimensional solution. The new particles are produced in the last threedimensional stage. The electromagnetic radiation produced on this occasion can also be estimated in the classical manner by assuming the charge to be homogeneously distributed over the entire mass. A formula is given for the energy of radiation.

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Electromagnetic Radiation in High Energy Nuclear Interactions 56-6-21/47

The main part of the radiated energy belongs to the high frequencies. The characteristic frequency of the first stage (slowing down) is determined by the time taken by the wave in passing on the nucleus. Behind the front of the shock wave the liquid is at rest, and the current intensity is equal to zero. An expression is then given for the current intensity in the traveling wave, the individual terms of this expression are discussed. Taking the traveling wave into account leads to terms of the order of $(1- \ ^2)$ in the expression for the energy. The total radiation is determined by the stage of irradiation. The expression herefore is explicitly written down. The here computed value of the radiated energy is considerably lower than the value following from the estimations for punctiform particles. In the center of mass system the particles are disk-shaped because of Lorentz contraction. At high frequencies the radiations of the various elements of the slowed-down disk interfere with one another and give a sharp maximum in the direction of motion. The hydrodynamic process developed here is not applicable to electrons and muons because of the weak interaction. In this case the usual formulae with logarithmic factor must be used. There are 2 figures and 4 references, 3 of which are Slavic.

Card 2/3

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Electromagnetic Radiation in High Energy Nuclear Interactions

56-6-21/47

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

SUBMITTED: June 20, 1957

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

(diss)

GERASIMOVA, N. M., Cand Phys-Math Sci -- "Multiple formation of particles of great energy and their passage through the ~~atoms~~ atmosphere." Mos, 1958. 8 pp. (Acad Sci USSR, Phys Inst im P. N. Lebedev), 125 copies. Bibliogr at end of book (17 titles). (KL, 9-58, 112)

- 3 -

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

ZHDANOV, G.B., glav. red.; IVANENKO, I.P., pom. glav. red.; SYROVATSKIY, S.I., red. toma; GERASIMOVA, N.M., red.; NIKISHOV, A.I., red.p ZATSEPIN, V.I., red.; KHRENOV, V.A., red.; DORMAN, L.I., red.; TULINOV, V.F., red.; FEDOROV, V.M., red.; VAVILOV, Yu.N., red.; ABROSIMOV, A.T., red.

Proceedings of the Moscow Cosmic Ray Conference, July 6-11, 1959. Moscow. Vol.3. 1960. 253 p.

(No subject heading)

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[Radiation belts of the earth. Primary cosmic radiation and its properties and origin] Radiatsionnyi poias Zemli. Pervichnoe kosmicheskoe izluchenie, ego svoistva i proiskhozhdenie. Moskva, Izd-vo Akad.nauk SSSR, 1960. 258 p. (Trudy Mezhdunarodnoi konferentsii po kosmicheskim lucham, no.3)

(MIRA 14:2)

1. International Conference of Cosmic Radiation. (Cosmic rays)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

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Proceedings of the Moscow Cosmic Ray Conference. July 6-11, 1959. Moscow. Vol.1. 1960. 333 p.
(No subject heading)

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GERASIMOVA, N.M., otv.red.toma; NIKISHOV, A.I., zamestitel' red.toma; ZHDANOV, G.B., glavnyy red.; IVANENKO, I.P., zamestitel' glavnogo red.; ZATSEPIN, V.I., red.; KHRENOV, B.A., red.; DORMAN, L.I., red.; TULINOV, V.F., red.; SYROVATSKIY, S.I., red.; FEDOROV, V.M., red.; VAVILOV, Yu.N., red.; ABROSIMOV, A.T., red.; GUROV, K.P., red.izd-va; BRUZGUL', V.V., tekhn.red.

[Transactions of the International Conference on Cosmic Rays] Trudy Mezhdunarodnoi konferentsii po kosmicheskim lucham. Moskva, Izd-vo Akad.nauk SSSR. Vol.1. [Nuclear interactions at energies of 10^{11}-10^{14} ev.] IAdernye vzaimodeistviia pri energiiakh 10^{11}-10^{14} ev. 1960. 335 p. (MIRA 13:9)

1. Mezhdunarodnaya konferentsiya po kosmicheskim lucham. Moscow, 1959. (Nuclear reactions)

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ZHDANOV, G.B., glav. red.; IVANENKO, I.P., pom. glav. red.; ZATSEPIN, V.I., red. toma; KHRENOV, V.A., pom. red. toma; GERASIMOVA, N.M., red.; NIKISHOV, A.I., red.; DORMAN, L.I., red.; TULINOV, V.F., red.; SYROVATSKIY, S.I., red.; FEDOROV, V.M., red.; VAVILOV, Yu.N., red.; ABROSIMOV, A.T., red.

Proceedings of the Moscow Cosmic Ray Conference, July 6-11, 1959. Moscow. Vol.2. Extensive air showers and cascades process. 1960. 331 p.
(No subject heading)

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[Extensive air showers and cascade processes] Shirokie atmosfernye livni i kaskadnye protsessy. Moskva, Izd-vo Akad.nauk SSSR, 1960. 351 p. (Trudy mezhdunarodnoy konferentsii po kosmicheskim lucham, no.2). (MIRA 13:12)

1. International Conference of Cosmic Radiation.
(Cosmic rays)

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

ZHDANOV, G.B., glavnyy red.; IVANENKO, I.P., zam.glavnogo red.; DORMAN, L.I., otv.red.toma; TULINOV, V.F., zam. redaktora toma; GERASIMOVA, N.M., red.; NIKISHEV, A.I., red.; ZATSEPIN, V.I., red.; KHRENOV, B.A., red.; SYROVATSKIY, S.I., red.; FEDOROV, V.M., red.; VAVILOV, Yu.N., red.; ABROSIMOV, A.T., red.; GUS'KOV, G.G., red.izd-va; BRUZGUL', V.V., tekhn.red.

[Transactions of the International Conference on Cosmic Rays] Trudy Mezhdunarodnoi konferentsii po kosmicheskim lucham. Moskva, Izd-vo Akad.nauk SSSR. Vol.4. [Variations in the intensity of cosmic rays] Variatsii intensivnosti kosmicheskikh luchei. 1960. 362 p. (MIRA 13:10)

1. Mezhdunarodnaya konferentsiya po kosmicheskim lucham. Moscow, 1959. 2. Magnitnaya laboratoriya AN SSSR, Moskva (for Dorman).
(Cosmic rays)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

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ZHDANOV, G.B., glav. red.; IVANENKO, I.P., pom. glav. red.; DORMAN, L.I., red. toma; TULINOV, V.F., pom. red. toma; GERASIMOVA, N.M., red.; NIKISHOV, A.I., red.; ZATSEPIN, V.I., red.; KHRENOV, V.A., red.; SYROVATSKIY, S.I., red.; FEDOROV, V.M., red.; VAVILOV, Yu.N., red.; ABROSIMOV, A.T., red.

Proceedings of the Moscow Cosmic Ray Conference, July 6-11, 1959. Moscow. Vol.14. Variations of cosmic-ray intensity. 1960. 365 p.

(No subject heading)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

S/056/60/038/004/027/048
B006/B056

17 2400
24.5700

AUTHORS: Gerasimova, N. M., Zatsepin, G. T.

TITLE: Disintegration of Cosmic Ray Nuclei by Solar Photons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 4, pp. 1245 - 1252

TEXT: The solar photons are able, thanks to the Doppler effect, to attain an energy which is sufficient for the spallation of cosmic ray nuclei, provided the latters' energy is high enough. If such a nucleus has the mass M, its energy is $E = Mc^2$, and the energy of the photon, which equals ε_0 in the solar system, in the rest system of this nucleus is $\varepsilon = \varepsilon_0 (+ {}^2 - 1 \cos \alpha) 2 \varepsilon_0 \cos^2(\alpha/2)$, where α is the angle between the trajectories of nucleus and photon in the solar system (cf. Fig. 1). The energy of a solar photon is about 1 ev, and the energy necessary for photo disintegration of a nucleus is of the order of 10^7 ev, so that the nucleus is bound to have an energy of E 10^{16} ev per nucleon (which

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corresponds to 10^7). The fragments formed in such a disintegration depend upon the nature of the reaction, but they incide practically simultaneously into the terrestrial atmosphere and cause correlated extensive air showers; the distance between the shower cores may approximately attain the order of magnitude of 1 km. The authors at first consider the number of photo disintegrations, and assume the solar energy spectrum to be a blackbody spectrum, and the energy spectrum of the various nuclei to be equal. These considerations lead to the result that the number of photo-disintegrations to be expected is of the order of 10^{-4} hour^{-1} km^{-2} steradian^{-1} and is only slightly dependent on the atomic weight of the nucleus. In the following, the energy distribution of the spallated nuclei is briefly discussed. The respective numerical data are given in Table 2. In the last part of the paper the observation probability of such correlated showers is estimated as a function of the distance between the shower cores. The probability distribution is shown in Fig. 3. L. Kh. Eydus et al. (Ref. 14) are mentioned. There are 3 figures, 2 tables, and 14 references: 6 Soviet, 7 US, and 1 British.

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Disintegration of Cosmic Ray Nuclei by Solar Photons

S/056/60/038/004/027/048
B006/B056

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

SUBMITTED: August 16, 1959 (initially) and October 30, 1959 (after revision)

Card 3/3

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

S/056/60/039/004/039/040
B006/B056

24.6900

AUTHOR: Gerasimova, N. M.

TITLE: Energy Fluctuations in the Interaction Between High-energy Particles 79

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 4(10), pp. 1087 - 1090

TEXT: In experiments on the multiple production of particles much attention is at present being paid to the fluctuation phenomena of the characteristic parameters in high-energy interactions. As a contribution to this problem, the present paper deals with energy fluctuations basing upon the hydrodynamic theory by L. D. Landau (Ref. 1). The determination of the fluctuation quantities meets with certain difficulties in this theory, which are discussed in the introduction; the present calculations are merely an estimate, as the energy range investigated is on the border of the applicability of the theory. M. I. Podgoretskiy, I. L. Rozental', and D. S. Chernavskiy have already calculated (Ref. 2) the fluctuations of the total energy and the [illegible]

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Energy Fluctuations in the Interaction Between High-energy Particles

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investigates the fluctuations of the energy transferred by a certain kind of particle which was produced in a high-energy interaction. For simplicity's sake it is assumed that in such interactions only pions or nucleons are produced. At the instant of the decay of a fluid element (if the temperature of the characteristic system becomes equal to T_c), pions and nucleons are in equilibrium distribution (Bose and Fermi distribution, respectively). The motion of the expanding fluid is isentropic, the investigated fluid element is considered to be heat-insulated; as two kinds of particles exist, there are two subsystems within each element, between which heat exchange occurs. Thus, the fluctuations of the particle number N_i and of the energy E_i' may be determined for each kind of particle by the ordinary isothermal equations:

$$\overline{(\Delta N_i)^2} = T_c \partial N_i / \partial \mu_i ; \quad \overline{(\Delta E_i')^2} = T_c \int_{m_i}^{\infty} \varepsilon_i'^2 \frac{\partial}{\partial \mu_i} dN_i$$

(μ_i - chemical potential, m_i - particle mass; $\hbar = c = k = 1$). The expression for $\overline{(\Delta E_i')^2}$ is further transformed by using the distribution

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function $\varrho(\varepsilon) = dN(\varepsilon)/2\pi d\varepsilon$, and the formula obtained for the mean square of energy fluctuations in the laboratory system, is further studied on the basis of the fact that the entropy of each element is conserved during a departure process, and that for dS an approximate formula by G. A. Milekhin holds. For $(\Delta E')^2_{min}$ an approximate formula is obtained. A comparison of the numerical computation of $\overline{(\Delta E')^2}/E'^2$ carried out according to this formula with experimental data by V. S. Murzin (π^0-mesons produced in cosmic-ray interactions at $\sim 10^{12}$ ev) shows good agreement. The author thanks I. L. Rozental', G. A. Milekhin, and V. S. Murzin for discussions. N. L. Grigorov and I. D. Rapoport are mentioned. There are 7 Soviet references.

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

SUBMITTED: May 28, 1960

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N. M., NIKISHOV, A. I., and ROZENTAL, I. L.

"Interaction of Nuclei and Photons of High Energies with a Thermal Radiation in the Universe"

Report presented at the International Conference on Cosmic Rays and Earth Storm, 4-15 September 1961, Kyoto, Japan.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

27194

3,2410

S/056/61/041/002/016/028
B111/B112

AUTHORS: Gerasimova, N. M., Rozental', I. L.

TITLE: Influence of the nuclear photoelectric effect on the spectrum of primary cosmic radiation

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 2, 1961, 488 - 490

TEXT: It was demonstrated in earlier papers that the photoelectric effect in heavy nuclei changes the spectrum of cosmic radiation only in a range of high energies. The authors assume that in high-energy cosmic radiation heavy nuclei occur and that if the photoelectric effect is neglected the cosmic radiation spectrum can be represented by an exponential function $T_{nucl}Q(E) = K.E^{-}$. Q(E) - term of source. When taking account of the nuclear photoelectric effect the author obtains the following form of the spectrum: $N(E)dE = K.E^{-}\,dE(1 + T_{nucl}/T_{photo}(E))^{-1}$.

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B111/B112

Influence of the nuclear ...

$$\frac{T_{\text{я}}}{T_{\Phi}(E)} \approx \frac{cT_{\text{я}}c_g\bar{n}_r}{1,2}\left(\frac{\varepsilon_g}{2\gamma kT}\right)^2 \frac{\exp(-\varepsilon_g/2\gamma kT)}{(a_g+\varepsilon_g/2\gamma kT)^2}\left[1+\frac{2}{a_g+\varepsilon_g/2\gamma kT}\right].$$

holds for T_{nucl}/T_{photo}, where T_{nucl}, $T_{\Phi}(E) = T_{photo}(E)$, c_g, a_g, $_g$ are parameters, $\bar{n}$ the mean photon density in the galaxy, $\gamma \sim 10^7$. 0.8 is the maximum value of T_{nucl}/T_{photo} for iron atoms which is attained at $E \sim 6.10^{17}$ ev. The mean free time in the galaxy is $\sim 10^{10}$ years. Since the galaxy exists only since $\sim 10^{10}$ years, the authors conclude that the nuclei practically do not collide in the metagalactic space. Finally, it is said that the existence of 10^{18} ev nuclei of intergalactic origin is very improbable and that cosmic radiation from the intergalactic space does not contribute to the corresponding part of the spectrum which is observed on the earth. Ye. L. Feynberg, V. L. Ginzburg, S. I. Syrovatskiy (Ref. 3: UFN, 71, 411, 1960), A. A. Korchak, S. B. Pikel'ner and I. S. Shkovskiy are mentioned. There are 1 figure and 5 references: 3 Soviet and 2

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Influence of the nuclear... S/056/61/041/002/016/028
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non-Soviet. The reference to English-language publication reads as follows: Ref. 5: C. W. Allen, Astrophysical Quantities, University of London, The Athlene Press, 1955.

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

SUBMITTED: February 25, 1961

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APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

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B104/B108

24.6700

AUTHOR: Gerasimova, N. M.

TITLE: Fluctuations of the number of particles in an electron-photon shower

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 2(8), 1962, 500-508

TEXT: By ignoring the ionization losses in an electron-photon shower the kinetic equation for the shower is obtained in a form which makes it particularly suitable for investigating the number of shower particles. An electron of energy E_0 is assumed to hit a substance. The probability that the electron passes through a layer of thickness dt without interaction is $1 - dt \int_0^{E_0} W_e(E_0, E')dE'$, and $W_e(E_0, E')dE'$ is the probability that an electron of energy E_0 emits a γ-quantum with an energy of between E' and E' + dE'. Farther on (layer thickness t) a shower is observed which produces $N_e(E_0, E, t)$ electrons with an energy > E at a depth

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t + dt. If the electron produces a γ-quantum in the layer dt, two showers will develop, one released by the photon of energy E' and the other by the electron of energy (E_0-E'). The probability of this event is determined by $W_e(E_0, E')dE'$. A shower produced by an electron after its passage through a layer of thickness t contains $N_e(E_0-E', E, t)$ electrons with an energy greater than E, and $N_\gamma(E', E, t)$ electrons produced by photons. The total number of electrons at the depth t + dt, produced by an electron, is given by

$$N_e(E_0, E, t+dt) = N_e(E_0, E, t)\left(1 - dt\int_0^{E_0} W_e(E_0, E')\,dE'\right) + \tag{1}$$
$$+ dt\int_0^{E_0} [N_e(E_0-E', E, t) + N_\gamma(E', E, t)]\, W_e(E_0, E')\,dE'.$$

and the total number of electrons at the depth t + dt, produced by a photon, is given by

$$N_\gamma(E_0, E, t+dt) = N_\gamma(E_0, E, t)\left(1 - dt\int_0^{E_0} W_p(E_0, E')\,dE'\right) + dt\int_0^{E_0} [N_e(E_0-E', E, t) + \tag{2}$$
$$+ N_\gamma(E', E, t)]\, W_p(E_0, E')\,dE'.$$

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Averaging over many showers when $dt \to 0$ gives

$$\frac{\partial \overline{N_e(E_0, E, t)}}{\partial t} = -\overline{N_e(E_0, E, t)} \int_0^{E_0} W_e(E_0, E')\, dE' + \int_0^{E_0} [\overline{N_e(E_0 - E', E, t)} + \overline{N_\gamma(E', E, t)}]\, W_e(E_0, E')\, dE'; \quad (3)$$

$$\frac{\partial \overline{N_\gamma(E_0, E, t)}}{\partial t} = -\overline{N_\gamma(E_0, E, t)} \int_0^{E_0} W_p(E_0, E')\, dE' + \int_0^{E_0} [\overline{N_e(E_0 - E', E, t)} + \overline{N_e(E', E, t)}]\, W_p(E_0, E')\, dE'.$$

Unlike ordinary kinetic equations, the unknown quantities in (3) are $\overline{N_e(E_0, E, t)}$ and $\overline{N_\gamma(E_0, E, t)}$. From these equations one obtains analytic expressions for the mean square number of particles with an energy greater than E, which are produced by a single electron or photon hitting the upper boundary of the atmosphere. These formulas make it possible to study the fluctuation pattern in an electron-photon shower. There are 3 figures.

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B104/B186

Fluctuations of the number of ...

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

SUBMITTED: February 4, 1962

Card 4/4

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

N. M. GERASIMOVA

Fluctuations of Number of Particles in an Electron-Photon Shower and Investigation of the Spectrum of Bursts producted by High Energy-mu-mesons under thick filters.

report submitted for the 8th Intl. Conf. on Cosmic Rays (IUPAP), Jaipur, Inida, 2-14 Dec 1963

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

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B141/B102

3.5920

AUTHOR: Gerasimova, N. M.

TITLE: Particle fluctuations in an electron photon shower when ionization losses are taken into account

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 1, 1963, 240 - 243

TEXT: The function $\Psi = [E_0, E, t, N]$ is determined, which characterizes the probability that particles of an energy E_0, when travelling through a depth t may produce N particles of an energy higher than E. The probability that the particle produces N particles in the layer t+dt depends on the probability that dt is passed through without interaction and on the probability of [illegible] emission in dt. The mean numbers of particles produced are given by:

$$[illegible] = \frac{H_1(s) D(s) G(s, \varepsilon)}{\varepsilon \sqrt{2\pi\lambda_1(s)}\, t} \exp[y_0 s + \lambda_1(s) t], \quad (4)$$

$$[illegible] \exp[y_0 s + \lambda_1(s) t], \quad (5)$$

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$$t = -\frac{y_0}{\lambda_1'(s)}, \quad y_0 = \ln\frac{E_0}{\beta}, \quad s = \frac{E}{\beta} f[\lambda_1(s)]. \tag{6}$$

where $\beta/E_0 \ll 1$ and $E \lesssim \beta$. $D(s)G(s,\varepsilon)$ depends only slightly on s and ε,

$$\overline{R_e} = 2\overline{N_e}(E_0, E, t)\,\overline{N_\gamma}(E_0, E, t)\,\gamma_1(s) \sim (E_0/\beta)^{2s} \exp\{2\lambda_1(s)\,t\}, \tag{7}$$

$$R_\gamma = 2\overline{N_e^2}(E_0, E, t)\,\gamma_2(s) \sim (E_0/\beta)^{2s} \exp\{2\lambda_1(s)\,t\}. \tag{8}$$

is obtained for the relationship between N_e and N_γ. After some transformations the final equations

$$\overline{N_e^2}(E_0, E, t) = \frac{[s_0 + \lambda_1(2s_0)]\,[H_1(s_0)\,M(s_0)\,\gamma_1(s_0) + C(2s_0)\,H_1^2(s_0)\,\gamma_2(s_0)\,s_0^{-1/2}}{2\sqrt{\pi\lambda_1''(s_0)\,t_0}\,[\lambda_1(2s_0) - \lambda_2(2s_0)]\,[\lambda_1'(2s_0) - \lambda_1'(s_0)]\,s^{1/2}} \times$$

$$\times D(s_0)G(s_0, \varepsilon)\exp[2ys_0 + 2\lambda_1(s_0)\,t]\left\{1 + \operatorname{ert}\left(-\frac{(t - t_0)\,\lambda_1'(s_0)}{\sqrt{\lambda_1''(s_0)\,t_0}}\right)\right\} -$$

$$-2\,\frac{[s_0 + \lambda_2(2s)]\,\overline{N_e}(E_0, E, t)\,N_\gamma(E_0, E, t)\,\gamma_1(s) + C(2s)\,\overline{N_e^2}(E_0, E, t)\,\gamma_2(s)}{[2\lambda_1(s) - \lambda_2(2s)]\,[\lambda_1(2s) - \lambda_2(2s)]}, \tag{15}$$

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$$\overline{N_\gamma^2}(E_0, E, t) = \frac{B(2s_0) H_1(s_0) M(s_0) \gamma_1(s_0) + [\lambda_1(2s_0) + A(2s_0)] H_1^2(s_0) \gamma_2(s_0) s^{-1/2}}{2\sqrt{\pi \lambda_1''(s_0) t_0} [\lambda_1(2s_0) - \lambda_4(2s_0)] [\lambda_1'(2s_0) - \lambda_1'(s_0)] s_0^{1/2}} \times$$

$$\times D(s_0) G(s_0, s) \exp[2ys_0 + 2\lambda_1(s_0)] \left\{1 + \operatorname{erf}\left[-\frac{(t - t_0)\lambda_1'(s_0)}{\sqrt{\lambda_1''(s_0) t_0}}\right]\right\} -$$

$$- \frac{2\{B(2s) \overline{N}_e(E_0, E, t) \overline{N}_\gamma(E_0, E, t) \gamma_1(s) + [\lambda_4(2s) + A(2s)] \overline{N}_e^2(E_0, E, t) \gamma_2(s)\}}{[\lambda_1(2s) - \lambda_4(2s)][2\lambda_1(s) - \lambda_4(2s)]} \quad (16)$$

are obtained. $t_0 = -y_0/\lambda'_1(s_0)$. $\delta_e = \overline{N_e^2}/\overline{N_e}^2$ and $\delta_\gamma = \overline{N_\gamma^2}/\overline{N_\gamma}^2$ are studied as dependent on t for various E_0 and E. δ_e and δ_γ depend on E only slightly if $s > 1.5$. The fluctuation is stronger for particles of higher energies. There are 3 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute imeni P. N. Lebedev AS USSR)

SUBMITTED: July 13, 1962

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

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L 19626-63 EWT(m)/BDS AFFTC/ASD

ACCESSION NR: AP3007077 S/0056/63/045/003/0565/0575

AUTHORS: Gedalin, E. V.; Gerasimova, N. M.

TITLE: Fluctuation of the number of particles in electron-photon showers produced by high-energy muons

SOURCE: Zh. eksper. i teoret. fiziki, v. 45, no. 3, 1963, 565-575

TOPIC TAGS: cosmic ray, electron-photon shower, particle-number fluctuation, muons of high energy

ABSTRACT: In order to remove the ambiguity in the determination of the muon spectrum from the burst spectrum, simple expressions are obtained for the mean square number of particles in electron-photon showers produced by high-energy muons, using the cross sections of the real processes that participate in the production of the cascade. A solution independent of the radiation thickness unit is obtained under certain limitations. "The authors are grateful to I. L.

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L 19626-63

ACCESSION NR: AP3007077

Rozental' and to G. Ye. Chikovani for discussions." Orig. art. has 5 figures and 22 formulas.

ASSOCIATION: Institut fiziki Akademii nauk Gruzinskoy SSR (Phys. Inst. Acad. Sci. Georgian SSR); Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (P. N. Lebedev Inst. Acad. Sci. SSSR)

SUBMITTED: 19Feb63 DATE ACQ: 08Oct63 ENCL: 00

SUB CODE: PH NO REF SOV: 011 OTHER: 004

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APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

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[illegible]

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L 2332-66 EWT(m)/T/EWA(m)-2
ACCESSION NR: AP5016283 UR/0386/65/001/005/0036/0042

29
26
B

AUTHOR: Gerasimova, N. M. 44,55

TITLE: Concerning one singularity of high-energy jets in nuclear emulsions 19,44,55

SOURCE: Zhurnal eksperimental'noy i tekhnicheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 1, no. 5, 1965, 36-42

TOPIC TAGS: nuclear collision, particle collision, nuclear emulsion

ABSTRACT: This is a continuation of an earlier study (ZhETF v. 29, 372, 1955) dealing with the particles that carry away a large fraction of the energy in the case of collisions occurring in nuclear emulsions (jets). Whereas the earlier study was devoted to nucleon collisions, the present article deals with interactions between identical nuclei and interactions between nucleons and nuclei. It is shown by means of energy-balance calculations that in this case a relativistic pion can be produced and emitted backwards in the laboratory frame, thus serving as a criterion for the selection of the jets generated in the nuclear emulsions. "The author is grateful to I. P. Ivanenko 44,55 and A. E. Chudakov 42,55 for valuable remarks." Orig. art. has: 9 formulas and 1 table.

Card 1/2

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

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ACCESSION NR: AP5016283

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ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Scientific Research Institute of Nuclear Physics of the Moscow State University) 44,55

SUBMITTED: 27Apr65 ENCL: 00 SUB CODE: NP

NO REF SOV: 003 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

L 4485-66 EWT(m)/FCC/T IJP(c)

ACC NR: AP5024853 SOURCE CODE: UR/0048/65/029/009/1754/1756

AUTHOR: Gerasimova, N.M.

ORG: Scientific Research Institute of Nuclear Physics, Moscow State University im. M.V.Lomonosov (Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Concerning the distribution of "small" ionization bursts produced under a thick absorber by high-energy muons. /Report, All-Union Conference on Cosmic Ray Physics held at Apatity 24-31 August 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 9, 1965, 1754-1756

TOPIC TAGS: secondary cosmic ray, muon, spectral energy distribution, ionization phenomenon, cosmic ray shower, electron positron pair, mathematic method

ABSTRACT: In determining the muon energy spectrum by the method of I.S.Alekseyev and G.T.Zatsepin (Tr. Mezhdunarodnoy konferentsii po fizi ke kosmicheskikh luchey, t. I, str. 326, M., 1960) with selection of small ionization bursts due only to direct pair production by muons, it is necessary to know the probability P(E, n, t) that n particles will arise at depth t as a result of cascade multiplication of pairs produced by a muon of energy E. The approximate calculation of P is discussed on the basis of an integrodifferential equation previously given by the author and E.V.Gedalin (Zh. eks-

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2

perim. i teor. fiz., 45, 565 (1959)). With certain assumptions concerning P (including the assumption that it is independent of t) an asymptotic expression is derived which is valid for $N/n \ll 1$, where N is the number of particles at the maximum development of a shower initiated by an electron of energy E. It is shown, however, that this expression is accurate only at inaccessible energies. Two asymptotic expressions for P, valid for $n \lesssim N/m$ and $n \gg N/m$, respectively (E/m is the most probable energy of the electron or positron of a pair produced by a muon of energy E), were derived on the assumption that the particles at the depth of observation are all due to a single muon interaction. These expressions are presented and their validity is briefly discussed. The asymptotic formula is not valid for $n \ll N/m$, and in this region P is best calculated numerically, using Monte Carlo techniques. The numerical calculations become more lengthy with increasing value of n, however, and for $n \gtrsim N/m$ the asymptotic formula gives a better result than any feasible Monte Carlo calculation. The author thanks G.B.Khristiansen and I.L.Rozental for discussions. Orig. art. has: 6 formulas.

SUB CODE: NP/ SUBM DATE: 00/ ORIG REF: 006/ OTH REF: 002

PC

Card 2/2

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GE'SIMOVA, N. U.

Testing abrasive discs in finshing operations. Podshipnik, No 2, 1952.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

BAYKOV, S.P., kand. tekhn. nauk; BELENKO, I.S., kand. tekhn. nauk; BELKOV, S.F., inzh.; BELYANCHIKOV, M.P., inzh.; BERNSHTEYN, I.L., inzh.; BOGORODITSKIY, D.D., inzh.; BOLONOVA, Ye.V., kand. tekhn. nauk; BROZGOL', I.M., kand. tekhn.nauk; VLADIMIROV, V.B., inzh.; VOLKOV, P.D., kand. tekhn. nauk; GERASIMOVA, N.N., inzh.; ZHUKHOVITSKIY, A.F., inzh.; KABANOV, M.F., inzh.; KAMEVTSOV, V.M., kand. tekhn. nauk; KOLOTINKOV, I.V., inzh.; KONDRAT'YEV, I.M., inzh.; KUZNETSOV, I.P., kand. tekhn. nauk; L'VOV, D.S., kand. tekhn. nauk; LYSENKO, I.Ya., kand. tekhn. nauk; MAKAROV, L.M., inzh.; OLEYNIK, N.D., inzh.; RABINER, Ye.G., inzh.; ROZHDESTVENSKIY, Yu.L., kand. tekhn. nauk; SAKHON'KO, I.M., kand. tekhn. nauk; SIDOROV, P.N., inzh.; SPITSYN, N.A., prof., doktor tekhn. nauk; SPRISHEVSKIY, A.I., kand. tekhn. nauk; CHIRIKOV, V.T., kand. tekhn.nauk; SHEYN, A.S., kand. tekhn. nauk; NIBERG, N.Ya., nauchnyy red.; BLAGOSKLONOVA, N.Yu., inzh., red. izd-va; SOKOLOVA, T.F., tekhn. red.

[Antifriction bearings; manual] Podshipniki kacheniia; spravochnoe posobie. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 828 p. (MIRA 15:2)
(Bearings (Machinery))

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

(A) L 12912-66 EWT(m)/EWP(j) RM

ACC NR: AP6000955 SOURCE CODE: UR/0286/65/000/022/0041/0041

AUTHORS: Sergeyeva, Z. I.; Vashchun, T. T.; Gerasimova, N. N.; Forer, Ye. R.

ORG: none

TITLE: A method for obtaining pigments in dischargeable form for dyeing rubber and plastics. Class 22, No. 176342 [announced by Scientific Research Institute for Organic Semi-Products and Pigments (Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 41

TOPIC TAGS: pigment, rubber, plastic, polypropylene, polymer, dye chemical

ABSTRACT: This Author Certificate presents a method for obtaining pigments in a dischargeable form for dyeing rubber and plastics by mixing the pigments with atactic polypropylene on rollers in the course of heating. To simplify the technique and to improve the quality of the pigments, the latter are applied in the form of water pastes.

SUB CODE: 11/ SUBM DATE: 19May64

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

BASKIN, N.L., inzh.; PODGORNAYA, N.I., inzh.; GRIGOR'YEVA, A.A., master
GERASIMOVA, N.S., tekhnik-khimik

Simplified method of dyeing wool. Tekst.prom. 21 no.2:70
Ja '61. (MIRA 14:3)
(Dyes and dyeing—Wool)

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

S/032/62/028/004/006/026
B101/B113

AUTHORS: Kotel'nikov, B. P., Prokhorova, Z. A., and Gerasimova, N. T.

TITLE: Rapid spectrophotometric method for controlling the oxidation of paraffin hydrocarbons to alcohols

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 4, 1962, 441-442

TEXT: To control the oxidation of liquid paraffin hydrocarbons to aliphatic alcohols by boric acid, a photometric method has been developed which, owing to its short duration, permits a continuous control of the oxidation process. Boric acid and borates are washed out of the oxidation product; the alcohols are converted to alkyl nitrites by $NaNO_2$ + HCl, and absorption is measured at 392.5 mμ. To eliminate the absorption caused by other oxidation products, the "oxidate" treated with $NaNO_2$ is dissolved in untreated "oxidate". A linear calibration curve was obtained for the dependence of the hydroxyl number on the optical density. By the method suggested, the hydroxyl number can be determined within 12-15 min with an accuracy of ±2.2

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mg of KOH/g (relative error ± 3.3%). Photometric determination at 357, 370, 344, or 334 mμ is also possible, but results are less accurate. There are 1 table and 5 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut po sinteticheskim zhirozamenitelyam i moyushchim sredstvam (Scientific Research Institute of Synthetic Fat Substitutes and Detergents)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

VASIL'YEV, L.I.; [illegible]; [illegible]; [illegible], N.T.

γ-Lactones in paraffin oxidation products. Neftekhimiya 5 no.6: 887-891 N-D '65. (MIRA 19:2)

1. Institut khimicheskoy fiziki AN SSSR. Submitted March 27, 1965.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, N.V.; SHULYAT'YEVA, V.I. (Sverdlovsk)

Promeran as a diuretic. Klin.med. 39 no.1:134-136 Ja '61. (MIRA 14:1)

1. Iz kafedry gospital'noy terapii (zav. - doktor med.nauk prof. V.M. Karatygin) Sverdlovskogo meditsinskogo instituta (dir. - prof. A.F. Zverev).
(DIURETICS AND DIURESIS)

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

ACCESSION NR: AR4023356 S/0284/64/000/002/0013/0013

SOURCE: RZh. Voprosy* tekhnicheskogo progressa i organizatsii proizvodstva v mashinostroyenii, Abs. 2.35.69

AUTHOR: Gerasimova, N. V.; Yermolayeva, L. I.; Matyayeva, L. K.; Filippova, T. N.; Pervin, Yu. A.

TITLE: Programming methods for the automation of technological planning

CITED SOURCE: Tr. proyektn., tekhnol., i n.-i. in-ta. Volgo-Vyatsk. sovnarkhoz, vyp. 2, 1963, 94-111

TOPIC TAGS: automatic programming, technological process, computer-controlled machine tools

TRANSLATION: An algorithm for the automatic planning of technological processes may be divided into two parts. The first incorporates the processing of the geometric information (blueprint data) to determine such features of a part as its shape and design characteristics essential for the technological process. The second part, the actual planning, reflects the production conditions. A program

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ACCESSION NR: AR4023356

for the automatic planning of turning operations during piece-produced and small-series production has been investigated. Data about the surfaces of the part are fed into the memory of an URAL-2 electronic computer. A relatively small proportion of these data, needed in most subroutines, is stored in the operational memory. Data about the special features of the part are coded on magnetic tape (MT); they are retrieved into the operational memory only once during the compilation of the technological charts for the given part. The program for scanning the technological characteristics occupies 306 locations. The program for automatic planning includes the compilation of the following subroutines: the subroutine for path control in the processing of the given part; the auxiliary subroutine for branching to each operation; and subroutines specifying the tool, its geometry and cutting conditions. All these subroutines are recorded and stored on the MT. The subroutines for branching are retrieved from the MT in accordance with the operation code. Each subroutine determining the path control of the tool on the part requires 704 positions. The combined total volume of the program is about 10,000 positions. Using the first part of the algorithm one obtains the path control chart for the given part, and supplementary information for position changes and their parameters. On the basis of retrievals of the subroutines that determine the position changes in accordance with the operation

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ACCESSION NR: AR4023356

code, the operational chart is compiled and recorded on the MT. For parts of average complexity the overall time for compiling the program, including access to the MT, is about 3 minutes. A general block diagram of the program and block diagrams of the individual subroutines are given, together with the structure of the language for the characteristics of the part, and the storage layout. A. Proskuryakov.

DATE ACQ: 06Mar64 SUB CODE: IE, CP ENCL: 00

Card 3/3

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

"A Survey of the Experience with the Use of the Radiolocation Method in the Sphere of Cartographic and Geodetic Problems", Collection of Papers on Science, Technology and Practice by the Main Administration of Geodesy and Cartography", No. 20, 1948.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GURASIMOVA, O. A.

25507

Izmeritel'nye Marki Stereoskopicheskikh Priborov. Sbornik Nauch. - Tekhn. i Proizvod. Statey Po Geodezii, Kartografii, Topografii, Aeros"yemke i GraviMetrii, VYP. 23, 1949, s. 81 - 88

SO: LETOPIS' No. 34

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, O.A.; GORDON, G.G.; KONOVALOVA, A.V.

Operating conditions for the Drobyshev SM-Zbis precision stereometer. Sbor.st.po geod. no.6:39-44 '54. (MLRA 9:6)
(Aerial photogrammetry)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, O.A.

Sharpness of aerial photographs. Trudy TSNIIGAIK no.105: 57-64 '55. (MLRA 9:6)
(Photography, Aerial)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, O.A.

Photographic quality and surveying characteristics of aerial photographs. Trudy TSNIIGAIK no.107:95-136 '55. (MLRA 9:6)
(Photography, Aerial)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, O.A., kandidat tekhnicheskikh nauk.

Light flashes in aerial photographs. Geod.i kart. no.4:71-75 Je '56. (Photography, Aerial) (MLRA 9:10)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, O.A., kandidat tekhnicheskikh nauk.

Combating shrinkage of photographic paper. Geod. i kart.no.8:28-30 O '56. (MIRA 10:1)
(Photography--Printing papers)
(Aerial photogrammetry)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, O.A.

Reports on photography at the Eighth International Photogrammetric Congress. Zhur. nauch. i prikl. fot. i kin. 2 no.1:68-71 Ja-F '57. (MLRA 10:3)

(Stockholm--Photographic surveying--Congresses)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

AUTHOR: ~~Gerasimova, O. A.,~~ Candidate of Technical Sciences 6-58-2-17/21

TITLE: A Modernized Blinker Method (Modernizirovannyy sposob miganiy)

PERIODICAL: Geodeziya i Kartografiya, 1958, Nr 2, pp. 68-71 (USSR)

ABSTRACT: Here the instrument constructed by H. Inerman, Switzerland, and produced by the Kern Company (New Method for Stereoscopic Measurement and Plotting) is described. It is not yet known how useful in practice the new instrument will prove. But the increase of accuracy by the elimination of errors caused by nonuniform lighting, the compensation of the observational error in adjusting the mark, and the increase of the measured parallax differences at double observations demand great interest for the new instrument. It is suggested that a similar instrument be produced and tested in Russia (USSR). There are 3 figures and 4 references.

1. Mapping 2. Stereoscopic range finders—Design

Card 1/1

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

AUTHOR: Gerasimova, O. A., Candidate of Technical Sciences SOV/6-58-8-13/15

TITLE: Objectives for Aerial Photography and the Methods Employed for Its Analysis in Foreign Countries (Aerofotos" yemochnyye ob"yektivy i metody ikh ispytaniy za rubezhom)

PERIODICAL: Geodeziya i kartografiya, 1958, Nr 8, pp. 68-74 (USSR)

ABSTRACT: The author gives a survey of a large number of objectives for aerial photography which are being produced and sold by French, West-German, Swiss, Italian, English, and American firms. Data are given of the most important among these objectives. The material published has partly been obtained from lectures delivered at the International Congress for Photogrammetry (Stockholm 1956), and partly from articles published in German and English periodicals. There are 7 references.

1. Aerial photography---Applications 2. Aerial photographs---Analysis

Card 1/1

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21193

S/006/61/000/003/002/003
B116/B203

3.2100 (2305,2605,2705)

AUTHOR: Gerasimova, O. A.

TITLE: Determination of the quality of aeronegatives for photogrammetric plotting

PERIODICAL: Geodeziya i kartografiya, no. 3, 1961, 24-28

TEXT: The author describes a method of determining the quality of aeronegative pictures. The method requires no targets, and is based on a study of the limiting curve of an outline with linear boundary, e. g., of a house. The limiting curve is obtained on the microphotometer. To express the test results in figures, the cosine curve

$$y = A \cos 2\pi Nx \qquad (1)$$

is taken to be nearly equal to the limiting curve. A is the maximum fluctuation amplitude, i. e., the greatest ordinate of the limiting curve; x is the abscissa of the limiting curve; N is the number of lines per mm. As the resolution is the numerical value of the threshold, y must be set equal to zero, and N must be found for arc cos $y = \pi/2$:

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$$N = \frac{\gamma}{2 \cdot 2\pi x} = 1/4x \qquad (2).$$

The curve chosen is less exact than the real one; the N value calculated from (2) constitutes therefore the lower limit. In practice, resolution will be higher. To determine the minimum size of the house, the picture of which can be obtained, the limiting curve for the house in the aeronegative must be rectified. It is assumed that the houses show in their surroundings the same contrast. Formula (2) is used to determine the ratio between N and $l = 2x$ (Fig.). Then, the rectified curve is plotted by means of N and l. The points lying on this curve are obtained in the following way: l is assumed (e. g., $l_1 = 0.04$ mm), and from this point the ordinate is plotted to the intersection with the limiting curve. From this point of intersection, a straight line parallel to the x-axis is plotted to the intersection with the ordinate drawn from the N value (here, N = 12.5 lines/mm). The intersection thus obtained lies on the requested curve. After having obtained the equalized curve in this manner, the threshold for the possible representation has to be found. According to Frizer, this threshold is 10% of A, where $A = (D_{max} - D_{min})$. Therefore, a parallel to the x-axis is drawn from this

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point on the y-axis (see Fig.) to the intersection with the rectified curve. The limiting value of N (here, 19 lines/mm) is obtained by drawing the ordinate from this point. This is the resolution of the aeronegative in the respective section of the picture. Hence, it follows that an object of the size 1/38 = 0.026 mm can be represented in this place of the aeronegative (if the object shows the same contrast as the house for which the limiting curve was plotted). The choice of the threshold is based on the criterion showing in how far the shape of the limiting curve deviates from the sine form (taken by the limiting curve at the end of the first degeneration stage of the photographic representation). This criterion was adopted from radio engineering (distortion factor) in 1957, and called degeneration factor. This factor ν is determined as follows: (1) The x-axis of the limiting curve is shifted in parallel by A/2; (2) the section between the beginning of the limiting curve and the point of intersection with the x-axis is divided into eight parts; (3) in each of the resulting points, the ordinates are measured (in mm), and ν calculated from the following formula:

$$\nu = \sqrt{\frac{A_3^2 + A_5^2 + A_7^2}{A_1}} \qquad (3),$$

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where A_1, A_3, A_5, A_7 are the amplitudes found from the formula $A_k = \sum y_k / 4$, k being the number of the harmonic. By the quantity of ν it can be judged whether the limiting curve studied is still in the first degeneration stage, or has already entered the second stage. The opinion saying that the picture degenerates in two stages was expressed by Sel'vin whose paper "Theory of resolution" was published in a Russian translation by the Geodezizdat in the collection "Otsenka kachestva opticheskogo izobrazheniya" (Determination of the quality of optical pictures) in 1959. There are 1 figure and 3 tables.

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21193

Determination of ...

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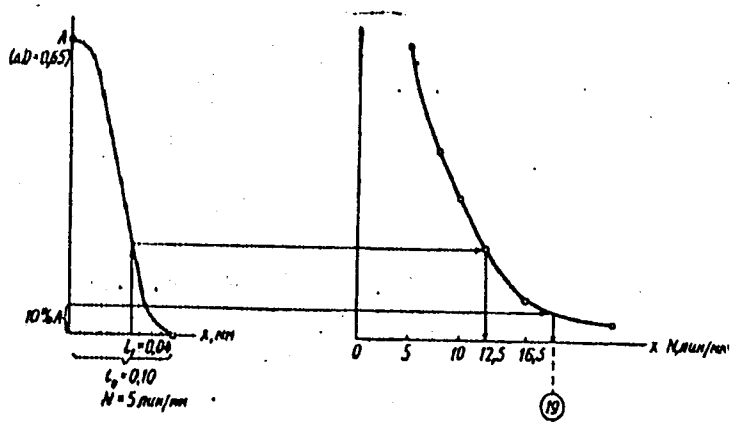
B116/B203



Card 5/5

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, O.A.

Equalizing the illumination in the field of view of "Russar" objectives. Geod. i kart. no.7:43-44 Jl '61. (MIRA 14:7)
(Photography, Aerial)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, O.A.

Study of aerial surveying photographic lenses intended for use in topographic surveying. Trudy TSNIIGAIK no.142:5-31 '61. (MIRA 15:8)

(Lenses, Photographic—Testing)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

S/035/62/000/004/037/056
A001/A101

AUTHOR: Gerasimova, O. A.

TITLE: Investigation of image quality on aerial photographs from the viewpoint of photogeodesist

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 4, 1962, 13, abstract 4G91 ("Tr. Tsentr. n.-i. in-ta geod., aeros"yemki i kartogr." 1961, no. 142, 137-164)

TEXT: The author presents general considerations on various criteria used in estimating the image quality (resolving power, definition, boundary curve) and on factors affecting these criteria. The analytical expression of the boundary curve is considered in detail and a method of quality estimate is proposed which is based on the degree of deviation of the boundary curve from the ideal shape. The following factors affecting the image quality are considered: 1) The effect of objective. It is shown that the shape of the boundary curve deteriorates and the accuracy of stereoobservations decreases with decreasing focal length and increasing the wide-angle. 2) The effect of objective focusing. Non-coincidence

Card 1/2

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of the plane of maximum definition with the plane of maximum resolving power is noted. 3) The exposure effect. 4) The effect of emulsion layer and photographic development.

V. Mikhaylov

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, O.A.

[redacted]

Using the function of contrast transfer to evaluate the image quality in photogrammetry. Geod. i kart. no.4:58-65 Ap '63. (MIRA 16:6)

(Aerial photogrammetry)

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000514820007-4

GERASIMOVA, [illegible]

Sinusoidal focus targets. Trudy TsNIIGAIK no.149:4-16 '64.
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GERASIMOVA, R. I.

USSR/Nuclear Physics - Varitrons
Nuclear Physics - Cosmic Rays

Jul 49

"Observation of Varitrons of Various Masses in Photographic Plates," A. I. Alikhanyan, D. M. Samoylovich, I. I. Gurevich, Kh. P. Babayan, R. I. Gerasimova, Inst of Phys Problems, Acad Sci USSR, Phys Inst, Acad Sci Armenian SSR, 3 pp

"Zhur Eksper i Teoret Fiz" Vol XIX, No 7

Introduces results of studying separate traces of charged cosmic particles. Traces used were at least 200 microns long. Ends of traces lay in the emulsion film. These tests again confirmed existence of varitrons with masses up to 10,000 times the mass of an electron. Submitted 9 Apr 49.

PA 51/49T56

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GERASIMOVA, R. I.

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2849

OBSERVATION OF FORMATION AND DECAY OF UNSTABLE PARTICLES IN EMULSION CHAMBERS. V. V. Alpers, R. I. Gerasimova, I. I. Gurevich, A. P. Mishakova and L. B. Sufrova. Doklady Akad. Nauk S.S.S.R. 105, 236-9(1955) Nov. 11. (In Russian)

Track tracings of unstable particles were recorded on emulsion film. Gases of associated stars were studied to find K^- mesons associated with A^0 and other particles. Investigations of 4-prong stars to find τ mesons and 2-prong stars to find hyperons were made. 398 tracks of τ mesons were measured, 214 of which were formed inside of the emulsion chambers. An area of emulsion of 20cm^2 was analyzed. (R.V.J.)

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GERASIMOVA, R.I.

Category : USSR/Nuclear Physics - Elementary Particles C-3

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3130

Author : Alpers, V.V. Barkov, L.M., Gerasimova, R.I., Gurevich, I.I., Muskhin, K.N., Nikol'skiy, B.A., Toporkova, E.P.

Title : Production of Slow $\pi^{\pm}$-mesons in the Nuclei of Photographic Emulsion by 460 Mev Protons and Neutrons of 400 Mev Effective Energy.

Orig Pub : Zh. eksperim. i teor fiziki, 1956, 30, No 6, 1025-1033

Abstract : The emulsion-camera procedure was used to study the production of charged π-mesons by 460 Mev protons and by neutrons of 400 Mev effective energy.

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GERASIMOVA, R. I.

Category : USSR/Nuclear Physics - Elementary particles C-3

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3129

Author : Alpers, V.V., Barkov, L.M., Gerasimova, R.I., Gurevich, I.I., Mishakova, A.P., Mukhin, K.N.

Title : Production of Slow $\pi^{\pm}$ Mesons in Photographic Emulsion Nuclei by 660 Mev Protons.

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 30, No 6, 1034-1039

Abstract : The emulsion camera procedure was used to study the production of slow $\pi^{\pm}$ mesons in the nuclei of the emulsion by the action of 660 Mev protons. The procedure used made possible an effective study of the stars with the production of slow π mesons, and also the energy and angular spectra of the slow π mesons produced in the nuclei.

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