GOGIBEDASHVILI, V.G., prof.; USHVERIDZE, G.A., kand.med.nauk

Incorrect planning. Vop. kur., fizioter. i lech. fiz. kul't. 27 no.1: 79-80 '62. (MIRA 15:5)

(HEALTH RESORTS, WATERING PLACES, ETC.)

USHVERIDZE, G.A.

Pathology of respiration in tuberculosis of the lungs in the climate of moderate altitudes. Sbor. trud. Gos. nauch.-issl. inst. kur. i fizioter. 26:11-28 '63.

Dosage of sun baths in ultraviolet units. Ibid.:63-67
(MIRA 17:5)

USHVERIDZE, G.A.; GOGIBEDASHVILI, R.K.; DZHIKIYA, L.P.; KAVKASIDZE, R.A.

Meteoropathological reactions in the clinic of internal diseases. Sbor. trud. Gos. nauch.-issl. inst. kur. i fizioter. 26:29-36 '63. (MIRA 17:5)

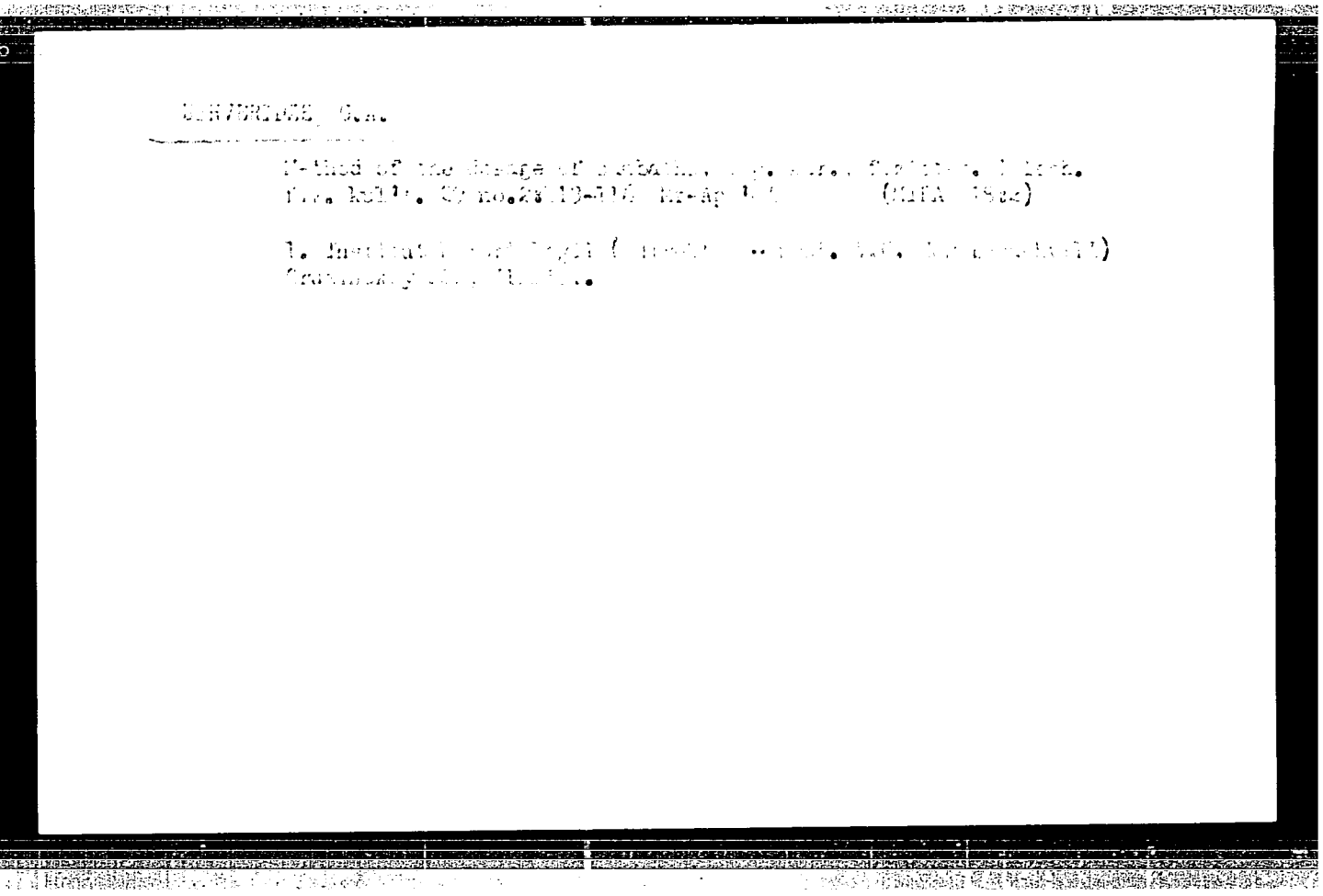
USHVERIDZE, G.A.; DGEBUADZE, M.N.; DZHIKIYA, L.P.

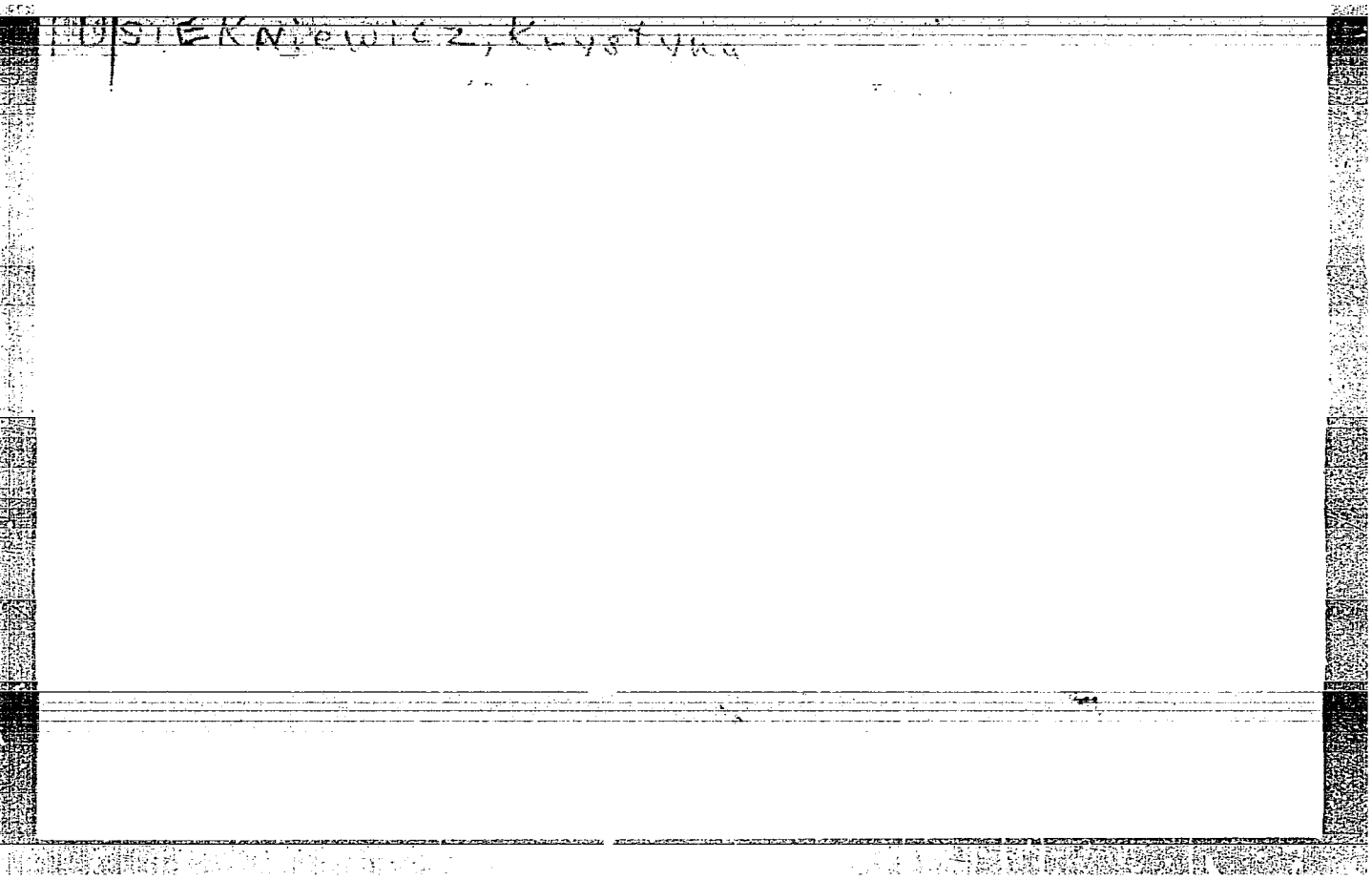
Comparative data on the basal metabolism and vacat oxygen in lung diseases at the sea health resort Gagra and moderate altitude health resort TSemi. Sbor. trud. Gos. nauch-issl. inst. kur. i fizioter. 26:79-82 '63. (MIRA 17:5)

USHVERIDZE, G.A.; [illegible]

Method of determining thermal comfort during [illegible].
Vop. kur. fizioter. i lech. fiz. kul't. 28 no.3 [illegible]
Je '63.

1. Iz Instituta kurortologii i fizicheskoy kul'tury [illegible]
prof. V.G. Gogibedashvili.





USLEVICH, I.
"Role of the meninx in connection with activities of the internal system of the organism. Tr. from the Russian". (p.62). PRIRODA
(Bulgarska Akademiia Na Naukite) Sofiya Vol 2 No 5 Sept/Oct 1953

SO: East European Accessions List Vol No 8 Aug 1954

CA

1, 11

A peculiar disturbance of higher nervous activity cured by bromide M. A. Usievich and M. G. Shmulevich. *J. Physiol. U. S. S. R.* 23, 697–701 (in English, 701) (1937). — A case of disturbed higher nervous activity in a dog, caused by the exptl. use of an excessive no. of inhibitory stimuli, was cured by daily administration of 0.5 g. of NaBr. S. A. Karjala

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001858130003-2"

B2

Section 1

Teaching of I. P. Pavlov on antagonism of higher nervous activity and perspectives in its development. M. A. Usevich. *J. Physiol. USSR*, 1951, 37, 539–548).—A review with 15 references with some additional results by the authors on the development of conditioned salivary secretion in puppies of various ages.

D. H. Smyth

USIEVICI, M.

"The plasticity of the activity of the brain hemispheres and their role in the adaptation of the organism to its surroundings. Tr. from the Russian", p. 32 (Analele Romano-Sovietice. Seria Medicina Generala, Series a III-a, v. 6, no. 1, Jan./Feb. 1953, Bucuresti)

SO: Monthly List of East European Accessions, Vol. 2, No 9 /Library of Congress, September 1953, Uncl.

USIK, A.A.; STOLOVICH, Z.B.

Re-examine the prevailing official standards for raw leather.
Kozh.-obuv.prom. no.6:8-10 Je '59. (MIRA 12:9)
(Leather industry--Standards)

LANDSMAN, S.U., kand. tekhn. nauk; USIK, A.F., inzh.

Effectiveness of using the heat of furnace gases. Prom. energ. 18 no.6:4-5 Je '63. (MIRA 16:7)

(Furnaces)

MARKOVSKIY, F.T., kand. tekhn. nauk; USIK, A.F., inzh.

Study of the economic efficiency of gas turbine systems with consideration of optimal parameters. Energ. i elektrotekh. prom. no.3:63-65 Jl-S '65. (MIRA 18:9)

KOLOBKOV, N.V.; USIK, A.I., inzhener-polkovnik, redaktor; STREL'NIKOVA, M.A., tekhnicheskiy redaktor.

[Meteorology; textbook for meteorologists of Air Force schools and institutions] Meteorologiia; uchebnik dlia meteorologov uchilishch i shkol VVS. Moskva, Voennoe izd-vo Ministerstva vooruzhennykh sil Soiuza SSR, 1949. 370 p. [Microfilm] (MLRA 8:1)
(Meteorology in aeronautics)

PAVSKIY, Andrey Georgiyevich; USIK, A.I., inzhener-polkovnik, red.; SLEPTSOVA, Ye.N., tekhn.red.

[Radio deviations; a manual for the navigators of combat units and for the training institutions of the Soviet Army Air Forces] Radiodeviatsiia; posobie dlia shturmanov stroevykh chastei i uchebnykh zavedenii VVS Sovetskoi Armii. Moskva, Voen.izd-vo M-va obor.SSSR, 1957. 73 p. (MIRA 10:12)

(Radio in aeronautics)

SHUMIKHIN, Yuriy Artem'yevich; USIK, A.I., inzh.-polkovnik, red.; SOLOMONIK, R.L., tekhn. red.

[Television in military science] Televidenie v voennom dele. Moskva, Voen. izd-vo M-va obor. SSSR, 1958. 77 p. (MIRA 11:9)
(Military television)

USIK, G. E.

Tomatoes

Cultivation of tomatoes without seedlings; Sad i go. no. 2, 1952.

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

USIK, G. E.

"The More Important Agrotechnical Problems of Raising Tomatoes in L'vovskaya Oblast." Cand Agr Sci, Fruit and Vegetable Inst imeni I. V. Michurin, Min Higher Education USSR, Michurinsk, 1955. (KL, No 15, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

USIK, G. [Usyk, H.], agronom; MIKHAYLICHENKO, B. [Mykhailychenko, B.], red.; NEDOVIZ, S., tekhn.red.

[Preservation of vegetables] Zberihannia ovochiv. K'viv, Knyzhkovo-zhurnal'ne vyd-vo, 1957. 11 p. (MIRA 13:2)
(Vegetables--Preservation)

USSR/Cultivated Plants - Potatoes, Vegetables, Melons, etc.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15626

Author : G.Ye. Usik
Inst :
Title : Raising Tomatoes Without Seedlings.
(O bezrassodnoy kul'ture pomidorov).

Orig Pub : Sad i ogorod, 1957, No 2, 15-16.

Abstract : At the training farm of the L'vovskiy Fruit and Vegetable Technical School a comparison was made between tomato crops with and without seedlings. It was established that for the cultures raised without seedlings the following varieties proved best: Gruntovyy gribovskiy, the Shtambovyy Alpat'yeva, the Mayak and Pervenets 190. The best yield with the culture coming from the non-seedlings was gotten by planting hardened seeds with an organic-mineral mixture placed in the holes. The overall fruit yield was the same for both

Card 1/2

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15626

the seedling and non-seedling tomato crops, although the seedling crop has a considerably higher commercial output.

USSR/Cultivated Plants - Potatoes, Vegetables, Melons. K-9

Abs Jour : Ref Zhur - Biol., No 9, 1958, 39318

Author : Dzik G.Ye.
Inst :
Title : The Increase in Tomato and Cucumber Productivity Under the Influence of Different Methods of Fertilizer Placement

Orig Pub : Udobreniye i urozhay, 1957, No 2, 23-25.

Abstract : It was found at the training farm of the L'vov fruit-vegetable technical school that the introduction of a mixture of organic and mineral fertilizers in small doses to the hole with the square-pocket planting of vegetable crops accelerates ripening, increases the yield and diminishes fertilizer expenses by 3-4 times in comparison with the broadcasting method. -- T.N. Nenchinova.

Card 1/1

USIK, G. [Usyk, H.], kand.sel'skokhoz.nauk; MIKHAYLICHENKO, B., red.; GRIFF, M. [Hriff, M.], tekhred.

[Growing onions and garlic] Vyroshchuvannia tsybuli ta chasnyku. L'viv, Knyzhkovo-zhurnal'ne vyd-vo, 1958. 9 p.
(MIRA 14:1)

(Onions) (Garlic)

Country : USSR
Cultivated Plants. Potatoes. Vegetables.
Cucurbits.

Jour: RZhBiol., No 22, 1958, No 100307

Author : Usik, G. Ye.
Inst :
Title : Raising the Cold-Hardiness in Tomato Seedlings.

Orig Pub: Sad i ogorod, 1958, No 2, 26-28

Abstract: In 1957, with the growing of tomato seedlings of Pervenets 190 variety by sowing dry seeds in a hotbed covered with frames, after conversion to 1 hectare, a yield of 266 centners was obtained on the farm of L'vov Agricultural and Technical School. The yield from seeds sub-

M-66

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Card : 1/3

toes. Vegetables.

58, No 100307

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ning with variable tempera-
ntners; the first gathering -
With the growing of seed-
tbeds without frames, sowing dry
r. centners/ha, the first picking -
8 centners/ha; with the sowing of har-
or July; with the first pick-
308 centners. Under the conditions
earlier. for large quantities, with
oblast', of frames, thick growing is
ency (up to 500 plants per frame) in
frames. In an open hotbed,

tu.
6 da
linge
seeds -
on the 30
dened seeds -
ing - 4 days
of L'vov
an insufficiency
recommended
hotbeds without

: 2/3

USIK, G., kand. sel'skokhoyaystvennykh nauk.

Soaking tomato seeds in salt solutions. Nauka i pered. op. v sel'-khoz. 8 no.3:54 Mr '58. (MIRA 11:3)
(Tomatoes) (Germination)

USIK, G.Ya., kand.sel'skokhozyaystvennykh nauk

Effect on yield of different levels of moisture and temperature during the hardening of seedlings. Dokl. Akad. sel'khoz. 23 no.10:16-20 '58. (MIRA 11:10)

1. L'vovskiy tekhnikum plodoovoshchevodstva.
(Tomatoes) (Plants--Hardiness)

USIK, Gavriil Yevtikhiyevich[Usyk, H.IE.], kand. sel'khoz. nauk; BUZANOV, I.F., akademik, red.; KATRENKO, K.A., red.; POTOTSKAYA, L.A.[Potots'ka, L.A.], tekhn. red.

[Biological principles underlying the cultivation practices for tomatoes in Podolia] Biologichni osnovy agrotekhniky pomidoriv na Podilli. Kyiv, Derzhsil'hospvydav URSR, 1962. 103 p. (MIRA 16:4)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im. V.I.Lenina (for Buzanov).

(Podolia--Tomatoes)

L 22363-66 EWT(1)/T JK

ACC NR: AP6005099 (A,N) SOURCE CODE: UR/0325/65/000/004/0159/0162

AUTHOR: Usik, G. Ye. 26

ORG: none B

TITLE: Effect of hybrid seeds and growth stimulators on the development and falling of tomato reproductive organs

SOURCE: Nauchnyye doklady vysshey shkoly. Biologicheskiye nauki, no. 4, 1965, 159-162

TOPIC TAGS: horticulture, plant growth, weed killer, plant reproduction

ABSTRACT: Experiments were conducted from 1960 to 1963 in the Kamenets-Podol'skiy Rayon of the Ukraine to increase tomato productivity by hybridization and growth stimulators. In 1960 tomato varieties were crossed according to A. V. Alpat'yev's method to produce hybrid seeds for 1961-62. Tomato plants grown in frames from March 15 to May 15th were transplanted May 16th with a feeding area of 70 x 50 cm. The number of fallen blossoms and fallen young fruits were counted in 50 to 80 plants for each of the varieties. Translocation of assimilators

Card 1/2

L 22363-66

ACC NR: AP6005099

during the night was determined by Sach's method. In 1963 tomato plants were treated twice with growth stimulators: trichlorophenoxyacetic acid, dichlorophenoxyacetic acid (2, 4-D), and petroleum growth stimulators. Use of hybrid plants and growth stimulators was found to increase tomato productivity, improve quality and reduce the maturation period. Orig. art. has: 3 tables.

SUB CODE: 06/ SUBM DATE: 05May64/ ORIG REF: 011

Card 2/2dda

USIK, G.Ye. [Usyk, H.E.]; SKRYNNIK, A.P. [Skrynnyk, O.P.]

Effect of moisture and temperature on the physiological processes in seedlings and on the yield of tomatoes. Ukr. bot. zhur. 22 no.2:24-27 '65. (MIRA 18:4)

1. Kamenets-Podol'skiy sel'skokhozyaystvennyy institut.

POTAPOV, A.I., gornyy inzh.; USIK, I.N., gornyy inzh.

Practive fo crushing rocks in blasting paired benches in the mine of the Southern Mining and Ore Dressing Combine. Vzryv. delo no.53/10:156-163 '63. (MIRA 16:8)

1. Yuzhnyy gornoobogatitel'nyy kombinat.
(Krivoy Rog Basin—Strip mining)
(Blasting)

POTAPOV, A.I.; USIK, I.N.

New technology of dressing drill bits. Gor. zhur. no.1:35-36 Ja '64. (MIRA 17:3)

1. Yuzhnyy gornoobogatitel'nyy kombinat, Krivoy Rog.

OKSANICH, I.F., inzh.; USIK, I.N., inzh.; SHKIPNIK, N.I., inzh.

Review of the book by V.I. Gushchin "Handbook for strip mine blasters." Gor. zhur. no.8:79 Ag '64. (MIRA 17:10)

1. Yuzhnyy gorno-obogatitel'nyy kombinat, Krivoy Rog.

USIK, I.Ya.

Self-locking control device. Metallurg 5 no.5:37 My '60.(MIRA 14:3)

1. Starshiy inzhener-konstruktor Kuznetskogo metallurgicheskogo kombinata.
(Metalworking machinery--Safety appliances)

USIK, I.Ya.

Device for the knurling of iron mill rolls. Metallurg 7 no.6:36 Je '62. (MIRA 15:7)

1. Rel'sobalochnyy tsekh Kuznetskogo metallurgicheskogo kombinata.

(Rolls (Iron mills))

USIK, I.Ya.; KHARITONOV, R.T., elektrik

Modernization of mechanical and electrical equipment.
Metallurg 7 no.7:31-32 Jl '62. (MIRA 15:7)

1. Rel'sobalochnyy tsekh Kuznetskogo metallurgicheskogo kombinata.
2. Pomoshchnik nachal'nika po mekhanicheskomu i elektricheskomu oborudovaniyu rel'sobalochnogo tsekha Kuznetskogo metallurgicheskogo kombinata (for Usik).
(Iron and steel plants--Equipment and supplies)

USSR/Soil Science - Soil Genesis and Geography. J

Abs Jour : Ref Zhur Biol., No 1, 1959, 1340

Author : Usik, L.Ye.

Inst : Chkalov State Pedagogical Institute

Title : Soil Cover at the Virgin Soil "Adamov" Grain Sovkhoz in Adamovskiy Rayon of Chkalovskaya Oblast'

Orig Pub : Uch. zap. Chkalovskiy gos. ped. in-t, 1957, vyp. 10, 147-176

Abstract : No abstract.

Card 1/1

USIK, P., mayor

Accelerate the processing and passage of telegrams. Voen.sviaz. 16 no.4:22-23 Ap '58. (MIRA 11:4)
(Military telegraph)

USIK, P A

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1981
AUTHOR TAKIBAEV,Ž.S., USIK,P.A., ANTONOVA,M.G.
TITLE On the Problem of the Production of Pions by High Energy Particles of Cosmic Radiation.
PERIODICAL Dokl.Akad.Nauk 111,fasc.2, 341-344 (1956)
Issued: 1 / 1957

The slight dependence of the number of thin traces in showers with s m a l l aperture angle on the nuclear charge number of the nuclear target does not suffice for the solution of the problem as to the correctness of any theory.

The authors investigated showers witn close and also with wide aperture angles of shower particles. These showers were produced on the occasion of the interaction between high-energy cosmic particles and the atomic nuclei of the photoemulsions (exposed in the stratosphere). The authors are of the opinion that most of the observed showers cannot possibly be explained by the mechanism of the multiple production of pions by a single collision between the impinging nucleon and one of the nucleons of the target nucleus. Also the hypothesis of the production of mesons by a collision between a particle and a whole "tube" of nucleons cannot serve as an explanation for the observed parameters of the showers.
The showers investigated were selected from among about 40.000 stars in photoplates. The energy of the primary particle is determined in accordance with the formula $E_o = 2Mc^2/tg^2v_{1/2}$. The value found in this manner is, of course,

the lowest limit of the energy of the primary particle. The experimental data derived from 36 showers are shown in a table. According to these data most showers are not produced by nucleon-nucleon collisions. Therefore the authors compared experimental results with the theory developed by LANDAU and selected a suitable length of the "tube" for each individual case.
In many cases showers can be treated as the result of a collision between an impinging nucleon and "nuclear tubes" of different lengths (according to the theory by LANDAU, which was further developed by S.Z.BELEN'KIJ and G.A. MILECHIN, Zurn.eksp.i teor.fis.29, 20 (1955)). However, the aperture angle $\vartheta_{1/2}$ is in the case of some showers considerably greater than the predicted value of $\vartheta_{1/2}$ which is predicted by the theory in the case of a given n_s (the significance of this shower parameter is not mentioned). Such an extension can be due to the forming of a cone instead of a cylinder in nuclear matter or by the scattering of shower particles by nucleons before leaving the nucleus. The showers with $\vartheta_{1/2} < 10^0$ are explained in a formally satisfactory manner by the hydrodynamic theory. In the case of broad showers ($\vartheta_{1/2} > 15^0$) the observed high value of $\vartheta_{1/2}$ cannot well be explained by the theory. The data obtained in the course of the present work rather point in the direction of the existence of a multiple production process of mesons.
INSTITUTION: Physical-Technical Institute of the Academy of Science of the SSR KAZAKSTAN.

USIK, P.A.

AUTHOR TAKIBAYEV, ZH. S., USIK, P.A. 56-4-35/52

TITLE Taking Account of the Primary α-Particles during the Development of a Nucleon Casade in the Stratosphere.
(Uchet pervichnykh α-chastits v razvitii nuklonnogo kaskada v stratosfere.- Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 32, Nr 4, pp 924 - 925 (USSR)

ABSTRACT According to the opinion of H.L.BRADT and B.PETERS, Phys. Rev. Vol 77,54 (1950), 45 % of the nucleons impinge upon the boundary of the atmosphere in form of protons, 45,3 % as part of the α-particles, and 9,7 % in form of heavy nuclei. These primary protons α-particles and heavy nuclei possess up to $4000\ Mc^2$ similarly formed energy spectra (with respect to the energy of a nucleons). The same exponents as for primary protons can therefore be selected when taking account of the influence exercised by the α-particles in the formula for their spectrum. For the case of the computations discussed here the average amount γ of the star-forming nucleons on the occasion of the fission an air nucleus by a primary α-particles is put equal to 2,5. On the basis of various experimental results the behavior of the nucleons of a primary α-particle in the target nucleus may even for the energies

CARD 1/3

Taking Account of the Primary α-Particles during the Development of a Nucleon Cascade in the Stratosphere.

investigated here be looked upon as independent of one another (i.e. the nucleons of the primary α-particle apparently react independently of one another). According to the opinion of the authors the model of the independent interaction of the impinging nucleons with the nucleons of the target nucleus may therefore be used. For the computations discussed here the mesons, secondary α-particles and the energy losses of the charged particles due to ionization are not taken into account. If the intensity of the primary protons is normalized to 1, the following formula is obtained for the differential spectrum of the α-particles:

$$S(E_e)dE_e = \begin{cases} 0{,}3\,\gamma\, E_c^{\gamma} E_o^{-\gamma-1} dE_e & \text{for } E_e \geqslant E_o = 740 \text{ MeV} \\ 0 & \text{for } E_e < E_o \end{cases}$$

Here E_e and E_o denote the energies per nucleon and $\gamma = 1{,}1$ is true. The authors computed the curves for the star-forming particles with energies of more than 100 MeV for various atmospheric depths. Computations were carried out with and

56-4-35/52

Taking Account of the Primary α-Particles during the Development of a Nucleon Cascade in the Stratosphere.

without taking account of the primary α-particles and results are shown in a diagram.
(1 Illustration)

ASSOCIATION: Physical-Technical Institute of the Academy of Science of the Kazakh S.S.R.
PRESENTED BY: -
SUBMITTED: 24.2. 1956.
AVAILABLE: Library of Congress.

CARD 3/3

USIK, P. A., Cand Phys-Math Sci (diss) -- "The repeated-plural process of forming mesons". Alma-Ata, 1959. 9 pp (Inst of Nuclear Phys of the Acad Sci Kazakh SSR), 150 copies (KL, No 14, 1960,127)

USIK, P. A.

INTERACTIONS OF HIGH-ENERGY NUCLEONS ($E > 10^{11}$ ev) WITH COMPLEX NUCLEI

P. A. USIK, T. P. LAZAREVA

Objections of a theoretical nature to the concept of a series of consecutive interactions of a high-energy nucleon with the nucleons of a complex nucleus are discussed.

From the mean characteristics of high-energy ($E \sim 10^{11}$-10^{14} ev) nucleon-nucleon interactions a conclusion is drawn concerning the possiblity of successive interactions. A semi-phenomenological consideration is proposed of the process of plural-multiple meson production by high-energy nucleons on complex nuclei. The mean coefficient of inelasticity of individual collisions is taken to be 0.2: for describing the multiplicity of mesons produced in separate collisions the statistical theory is used.

Calculation results together with the results of purely multiple theory, which considers the interaction of the primary nucleon with a "tube" that it cuts in the nucleus, are compared with the experimental integral distribution of showers (produced in photographic emulsion) with respect to the number of shower particles. In this work account is taken of the photographic emulsion and the energy spectrum of cosmic-radiation nucleons.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11 July 1959.

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SOV/31-59-10-7/21

~~24~~ 24.6900

AUTHOR: Usik, P.A.

TITLE: The Average Number of Particles in the Statistical Theory on the Formation of Mesons with the Interaction of Ultra-High Energy Nucleons

PERIODICAL: Vestnik Akademii nauk Kazakhskoy SSR, 1959, Nr 10, pp 48 - 51 (USSR)

ABSTRACT: The author states that Fermi [Ref 1_7, showed that the probability of the formation of charged and neutral mesons when two high-energy nucleons n collide is determined by the statistical weight of the state of particles. If the statistical weights for various n are known, it is easy to find the average number of particles formed in a system of a given power. In the case of interaction at very high energy, there must be a transition from the description of the average number of mesons formed in terms of statistical weights to a thermodynamic description. To

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SOV/31-59-10-7/21

The Average Number of Particles in the Statistical Theory on the Formation of Mesons with the Interaction of Ultra-High Energy Nucleons

prove the existence of this transition, we should take the expression for the statistical weight of a system consisting of n particles in an ultrarelativistic case [Ref 2].

[illegible]

[illegible]

Here E_0 is the full energy of the colliding nucleons in the system of their center of inertia,

[illegible]

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The Average Number of Particles in the Statistical Theory on the Formation of Mesons with the Interaction of Ultra-High Energy Nucleons

Lorentz's restricted effective volume, μ - the mass of the π-meson. The author arrives at the final equation

$$= \quad \left(\quad \right) \qquad (7)$$

There are 4 references, of which 2 are English, and 2 Soviet.

4

35162

S/707/60/003/000/001/013
B145/B102

24.6700

AUTHOR: Usik, P. A.

TITLE: "Repeated" multiple processes of meson formation

SOURCE: Akademiya nauk Kazakhskoy SSR. Institut yadernoy fiziki. Trudy. v. 3, 1960. Vzaimodeystviye vysokoenergichnykh chastits s atomnymi yadrami. 3-16

TEXT: A new theory of meson formation in collisions of high-energy nucleons with heavy nuclei has been investigated, as the mean number of gray and black tracks in nuclei fissioned by high-energy nucleons of a photographic emulsion was found to be higher than estimated by Heitler and Terreaux. The results are compared with experimental data. The "repeated" multiple process of meson formation is described in the phenomenological theory as follows: If a high-energy nucleon (10^{11}-10^{12} ev) hits a nucleus, a succession of individual independent collisions with the nuclear nucleons results, and mesons are formed every time owing to energy release. Both the transverse momentum of the shower particle and the longitudinal momentum of the recoil nucleon are of the order of μ (mass of the pion). In every

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interaction, the nucleon loses about 20% of its actual energy, and the dispersion of the particles formed starts from the resulting excited volumes after establishment of the statistical equilibrium, the multiplicity of the particles being described by the statistical theory. The recoil nucleons, for their part, collide with nuclear nucleons, causing the appearance of further recoil nucleons; the nuclear excitation finally leads to evaporation. The energy of the recoil nucleon in the laboratory system is some 10 - 100 Mev. The angle between the directions of the recoil nucleon and the primary nucleon is some ten degrees. The released nucleon cannot participate in the development of a cascade process within the nucleus with accompanying formation of mesons, though it may eject further nucleons from the nucleus. Objections to the assumption that the interaction of high-energy nucleons with heavy nuclei can be regarded as a succession of independent nucleon-nucleon interactions are overruled. The dependence of the integral distribution $N'(\geq n_s)$ of stars in photoemulsions on the number (n_s) of shower particles, as calculated according to the theory of "repeated" multiple processes, is compared with experimental data. A comparison with

the results obtained according to the "repeated" and the multiple theories shows that the theory developed here agrees more closely with the experimental data. The experiments were conducted at the Laboratoriya kosmicheskikh luchey Instituta yadernoy fiziki AN KazSSR (Cosmic Ray Laboratory of the Institute of Nuclear Physics AS Kazakhskaya SSR) and of the Fiziko-tekhnicheskiy institut AN KazSSR (Physicotechnical Institute AS Kazakhskaya SSR). Photographic emulsions (600 μ emulsion of the Ilford G5 type) were exposed in the stratosphere at the 1955 International Expedition in Italy. V. M. Maksimenko, I. L. Rozental', D. S. Chernavskiy, N. L. Grigorov, E. L. Feynberg, Zh. S. Takibayev, and M. G. Antonova are mentioned. There are 3 figures, 3 tables, and 26 references: 13 Soviet and 13 non-Soviet. The four most recent references to English- language publications read as follows: I. A. Ivanovskaya, D. S. Chernavskiy. Nuclear Phys. 4, 29, 1957; B. Edwards et al. Phil. Mag., 3, 347, 1958; I. Yeivin Phys. Rev., 97, 1084, 1955. G. Acconi. Phys. Rev. 93, 1107, 1954.

Card 3/3

21008

S/058/61/000/005/016/050
A001/A101

24.6900

AUTHORS: Lazareva, T.P., Usik, P.A.

TITLE: Interactions of high-energy nucleons with composite nuclei

PERIODICAL: Referativnyy zhurnal. Fizika, no 5, 1961, 82, abstract 5B280 ("Tr. Mezhdunar. konferentsii po kosmich. lucham, 1959, v 1", Moscow, AN SSSR, 1960, 71 - 75)

TEXT: Various models describing interactions of high-energy nucleons with composite nucleus are compared with experimental data. The best agreement is obtained by the model in which a consecutive cascade interaction of the primary nucleon with nucleons of the nucleus is assumed. The calculation of the intranuclear cascade is carried out on the assumption that the primary nucleon loses 20% its energy at each collisions in the nucleus; the average multiplicity of shower particles is calculated by the statistical theory of multiple production. The entire cascade is concentrated within a narrow tunnel cut out by the primary nucleon in the target nucleus.

V. Barashenkov

[Abstracter's note: Complete translation.]

Card 1/1

RUS'KIN, V.I.; USIK, P.A.

Calculating strange particles in the Fermi statistical theory.
Zhur.eksp.i teor.fiz. 38 no.3:929-933 Mr '60.
(MIRA 13:7)

1. Institut yadernoy fiziki Akademii nauk Kazakhskoy SSR.
(Particles(Nuclear physics))

S/056/60/039/006/040/063
B006/B063

24.6900

AUTHORS: Usik, P. A., Rus'kin, V. I.

TITLE: A Particular Case of Peripheral Interactions Between High-energy Nucleons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 6(12), pp. 1718 - 1720

TEXT: A perturbation-theoretical method devised by I. Ye. Tamm, D. S. Chernavskiy et al. for taking peripheral interactions of two nucleons into account has been used to study the peripheral interaction shown in the attached Feynman graph:

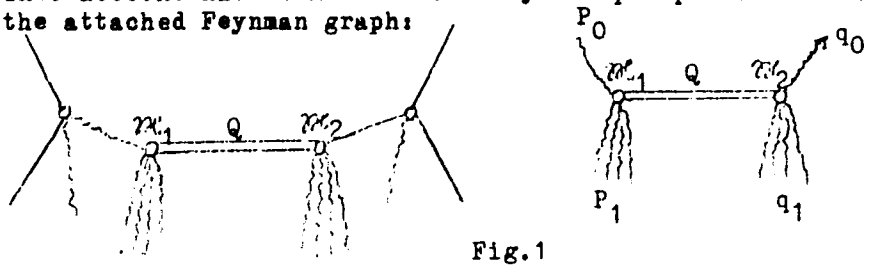

Fig.1

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A Particular Case of Peripheral Interactions Between High-energy Nucleons

S/056/60/039/006/040/063
B006/B063

This type of interaction may result in the formation of two emission centers of shower particles (a "two-peak" angular distribution as considered first by Zatsepin, Chernavskiy, and E. G. Bubelev). In the case of large pion scattering cross sections ($\sigma_{\pi\pi}$), this process possibly increases the contribution of peripheral collisions substantially. It is very difficult to estimate the total cross section of this process because $\sigma_{Q\pi}$ is neither experimentally nor theoretically known, and also the type of the Q-distribution function is unknown. First, the distribution function in the central part of the graph (Fig.2) is studied on the assumption that the pion-pion interaction takes place via exchange of a boson with the four-momentum Q and the mass M. m_1 and m_2 are the masses of the excited states which rapidly decay into secondary particles; $M \geq \mu$, μ - pion mass. The three cases $M = 2\mu$, $M = 2m$, and $M = 4m$ are studied (m - nucleon mass). Following the ideas of Yu. A. Romanov and Chernavskiy (Ref.2), the probability for the process graphically represented in Fig.2 is given as $dw \sim w^2_{Q\pi} \frac{p_1}{2E_0} \frac{d(\cos\theta)\, m_1\, dm_1\, m_2\, dm_2}{(Q^2+M^2)^2}$, where E_0 is

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A Particular Case of Peripheral Interactions Between High-energy Nucleons

S/056/60/039/006/040/063
B006/B063

the energy of the virtual pion, which is taken to be equal to $\mu\gamma_0$ (γ_0 is the Lorentz factor of the colliding nucleons). At high nucleon energies, $w_{Q\pi}$ can be assumed to be constant. After integrating from 0 to $(1 - \cos\theta) = M^2/2E_0^2$ one obtains $dw \sim w_{Q\pi}^2 \frac{P_1 \varkappa_1 \varkappa_2 d\varkappa_1 d\varkappa_2}{E_0^3 (M^2+\varkappa^2)(2M^2+\varkappa^2)}$. In the case of symmetric excitation ($\varkappa_1 \sim \varkappa_2$, $\varkappa^2 \sim M^2$, $Q^2 + M^2 \sim 2M^2$) one obtains $\varkappa_1 \sim \varkappa_2 \sim \sqrt{2E_0 M - M^2}$. With $\bar{E}_\pi \approx 0.4$ it is possible to calculate the mean multiplicities of the shower particles and to compare them with experimental values. A table gives numerical results for 13 showers; the data of 12 showers have been taken from an article of Cocconi, and in one case (No.5), from previous studies of the authors. The results indicate that the exchange boson has a mass that is equal to that of a nucleon - antinucleon pair. The authors thank D. S. Chernavskiy for suggesting the subject and his interest in the work, and also Professor Zh. S. Takibayev for discussions. There are 1 figure, 1 table, and 8 references: 4 Soviet, 1 US, and 3 Italian.

Card 3/4

88448

A Particular Case of Peripheral Interactions Between High-energy Nucleons

S/056/60/039/006/040/063
B006/B063

ASSOCIATION: Institut yadernoy fiziki Akademii nauk Kazakhskoy SSR (Institute of Nuclear Physics, Academy of Sciences Kazakhskaya SSR)

SUBMITTED: June 21, 1960

№	Тип случая	n_c	n_s		
			$M=2\mu$	$M=2$	$M=4$
1	0+ 4p	150(245)	11,4(14,5)	30,9(39,9)	42,7(55,6)
2	0+14p	450(218)	19,7(13,7)	54,4(37,5)	76,3(53,2)
3	1+15p	260(201)	15,0(13,2)	41,1(36,0)	57,3(50,0)
4	0+32p	71(81)	7,5(8,3)	20,7(22,3)	27,7(30,0)
5	0+20p	79(77)	8,2(8,1)	21,9(21,6)	29,6(29,4)
6	0+20p	34(69)	5,4(7,4)	13,5(20,4)	16,6(27,2)
7	0+22p	26(65)	4,7(7,4)	11,3(19,7)	12,8(29,2)
8	1+11p	55(53)	6,8(6,8)	17,9(17,7)	23,6(23,0)
9	0+21p	38(48)	5,7(6,4)	14,4(16,6)	18,1(21,5)
10	0+16p	50(45)	6,5(6,2)	17,0(16,0)	22,1(20,6)
11	0+13p	44(43)	6,1(6,1)	15,8(15,6)	20,3(19,9)
12	0+16p	20(43)	4,1(6,1)	9,4(15,6)	9,4(19,9)
13	0+16p	30(40)	5,0(6,0)	12,5(14,9)	14,9(18,9)

Card 4/4

3.2410 also 2412

24.6700

26415
S/056/61/041/001/010/021
B102/B214

AUTHORS: San'ko, L. A., Takibayev, Zh. S., Usik, P. A.

TITLE: Analysis of showers formed by high-energy cosmic-ray particles according to the model of excited nucleons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v.41, no. 1(7), 1961, 139-145

TEXT: High-energy interactions ($E > 10^{11}$ ev) of cosmic-ray nucleons in photographic emulsions are analyzed on the basis of the excited-nucleon model. A particular study is made of the angular distribution of the excited nucleons in the c.m.s. and its relationship to the angular distribution of the secondary shower particles in the lab system, as well as their multiplicity in the super-high energy range. Analysis is made of showers with $N_n \geq 2$ and $n_s \geq 6$ produced by single-charged or uncharged cosmic particles (nucleons) with $E > 10^{11}$ ev in the emulsion. 42 such showers were studied in all. The angular distribution of the excited nucleons in the c.m.s. was strongly anisotropic, small angles of emission

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Analysis of showers formed by ...

(25-30°) predominating; in many showers of smaller multiplicity, however, angles of emission of 70° were reached. The experimental results are compared with those obtained from the theory of peripheral interaction in single-meson pole approximation. Since the multiplicities were small, it was necessary to take the fluctuation of the particle numbers into account (cf. M. I. Podgoretskiy et al. ZhETF, 29, 296, 1955). Further, the dependence of the form of angular distribution of shower particles on their velocities of emission, and on the angle of emission of the excited nucleons in the c.m.s. is studied. The comparison of experimental and theoretical results has predominantly a qualitative character. The calculations made by other authors according to the theory of peripheric interaction (based on the perturbation theory) in single-meson pole approximation gave for nucleon-nucleon interaction at 9 Bev and 200-300 Bev good agreement with experiments, which shows that peripheric interaction at these energies plays an important role. In this approximation, the square of the four-momentum of the intermediate pion is given by

$$k^2 = -\left[1 - m_1^2 + \frac{4\gamma_c^2 + m_1^2 - m_2^2}{2} - 2\cos\vartheta' \sqrt{\gamma_c^2 - 1} \times \right. \\ \left. \times \left[\left(\frac{4\gamma_c^2 + m_1^2 - m_2^2}{4\gamma_c}\right)^2 - m_1^2\right]^{1/2}\right]. \qquad (5)$$

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from this one obtains for symmetric excitation of the nucleons ($m_1=m_2=m$):

$$k^2 = -1 - m^2 + 2\gamma_c^2 - 2\sqrt{(\gamma_c^2-1)(\gamma_c^2-m^2)}\cos\vartheta'. \quad (6)$$

The distribution $k^2(N)$ calculated according to this formula is shown in Fig. 6. This result is compared with the data of I. M. Dremin and D. S. Chernavskiy. These workers had found that the total single-meson interaction cross section $\sigma_{NN}(E)$ at $E \sim 200$ Bev agrees with experimental values only when $\sigma_{\pi N}(k^2)$ is a smooth function of k^2 for $k^2 \leq (7\mu)^2$ and decreases rapidly with further increase of k^2. In the case considered here k^2 is essentially larger than $(7\mu)^2$; so this approximation cannot be used. The results of the investigations described here may be summarized as follows: The mass of the excited nucleons and the multiplicity of the generated mesons depend on the direction of motion of the excited nucleons in the c.m.s. The form of the angular distribution of the shower particles in the laboratory system depends on the velocity and direction of motion of the excited nucleons in the c.m.s. The transfer of four-momentum on nucleon interaction is, in all cases, large compared to $(7\mu)^2$. Therefore,

26415
S/056/61/041/001/010/021
B102/B214

Analysis of showers formed by ...

if the really excited nucleons are centers of emission of the shower mesons, and if the direction of their motion coincides with the cone axis, the excitation mechanism of the nucleons must deviate strongly from the single-meson interaction. M. I. Podgoretskiy is mentioned. There are 6 figures and 12 references: 6 Soviet-bloc and 6 non-Soviet-bloc.

ASSOCIATION: Institut yadernoy fiziki Akademii nauk Kazakhskoy SSR (Institute of Nuclear Physics of the Academy of Sciences Kazakhskaya SSR)

SUBMITTED: December 26, 1960

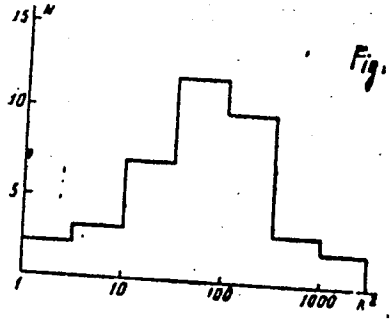

Fig. 6

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37544
S/048/62/026/005/008/022
B106/B104

AUTHORS: San'ko, L. A., Takibayev, Zh. S., and Usik, P. A.

TITLE: Study of showers produced by high-energy cosmic-ray particles according to the model of excited nucleons

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 5, 1962, 604-612

TEXT: The emission of pions takes place, not during, but some time after a nucleon-nucleon collision. This is due to excited nucleons emitting the pion. The angular distribution of such excited nucleons may give information on the nucleon interaction mechanism at very high energies. Experimental results indicate that the mass of the excited nucleons, and consequently, also the multiplicity of the resulting mesons depend on the direction of motion of the excited nucleons in the cms. The four-momentum transfer during nucleon interaction with consideration of the twist angle is always greater than $(7\mu)^2$. Therefore, if the emission centers of shower mesons are really excited nucleons, and if they move along the axis

Card 1/2

Study of showers produced...

S/046/62/026/005/008/022
B108/B104

of the shower cones, the nucleon excitation mechanism must be different from single-meson interaction. The longitudinal component of the transferred momentum makes a greater contribution to the excitation of the nucleons than does its transverse component. The latter essentially determines the twist angle of the excited nucleons. There are 8 figures.

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43359

S/056/62/043/005/001/058
B163/B186

AUTHORS: Kuchin, I. A., Usik, P. A.

TITLE: Inelastic nucleon-nucleon interactions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 5(11), 1962, 1569-1574

TEXT: The asymmetry in the angular distribution of secondary protons in the center-of-mass system as found in 9 Bev pn-interaction experiments (V. A. Botvin et al., ZhETF 41, 993, 1961; T. Vishki et al., ZhETF 41, 1069, 1961) is studied theoretically in a one-meson approximation. The two cases are treated: (a) where only one of the nucleons is excited, and (b) where neither of the nucleons is excited. In case (b) the process occurs via $\pi - \pi$ - interaction. Expressions for the corresponding cross sections and for their asymptotic behavior in the limiting case of high energies are derived. Table 1 shows the calculated cross sections for various energies in the laboratory system. In Table 2 the asymmetries calculated for the two cases (a) and (b), and for various numbers of secondary particles in the reaction, are compared with the experimental results by Botvin et al. It is concluded that the one-meson NN-interaction

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S/056/62/043/005/001/058
B163/B186

Inelastic nucleon-nucleon interactions

with only one nucleon excited is an important contribution to the inelastic NN-interaction cross section. The experimental data can be explained in this way, as well as under the assumption that one-meson interactions in which both nucleons are excited play the most important role. In order to specify theoretical assumptions from a single aspect further experimental research is proposed. There are 2 figures and 2 tables.

ASSOCIATION: Institut yadernoy fiziki Akademii nauk Kazakhskoy SSR (Institute of Nuclear Physics of the Academy of Sciences of the Kazakhskaya SSR)

SUBMITTED: February 28, 1962

Table 1: Nucleon-nucleon interaction cross section (in mbarn) for various energies E_1 in the laboratory system. First column: Type of reaction.

Table 2: Asymmetry η in the angular distribution of protons in the three-ray-cases of p-n interaction at an energy of E_1 = 9 Bev.

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Inelastic nucleon-nucleon interactions

S/056/62/043/005/001/058
B163/B186

Legend to the tables: (1) Type of reaction. (2) Total number of secondary particles in the reaction. (3) Proton asymmetry in three-ray-cases. (4) Experiment; (5) over all reactions.

Table 1

Тип реакции (1)	Δ^*_{max}	$E_д$, BeV 9	18	200	800	5000
а	0,83	37	38	38	38	38
	0,67	32	30	30	30	30
б	0,83	8,5	10,5	13	13	13
	0,67	7,3	7,8	8,1	8,1	8,1

Table 2

Тип реакции (1)	Полное число вторичных частиц в реакции (2)	Асимметрия протонов в трехлучевых случаях (3)
а	3	0
	4	—0,20
	5	—0,30
	6	—0,28
б	4	—0,35
	6	—0,47
эксперимент (4)	по всем реакциям (5)	—0,32±0,11

Card 3/3

BOTVIN, V.A.; TAKIVAYEV, Zh.S., akademik; USIK, P.A.

Inelastic pn-interactions at an energy of 9 Bev.
Dokl. AN SSSR 146 no.4:785-788 O '62. (MIRA 15:11)

1. Institut yadernoy fiziki AN KazSSR. 2. AN KazSSR (for Takibayev).

(Nuclear reactions)
(Mesons) (Protons)

... ... SANKO, Zh. S. TAKIBAYEV, P. A. USIK

Investigation of the Jets above 10^{11} ev

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

SAN'KO, L.A.; USIK, P.A.

Analyzing the asymmetry of the angular distribution of shower particles. Izv. AN Kazakh. SSR. Ser. fiz.-mat.nauk no. 2:82-93 '63. (MIRA 17:6)

L 40706-65 EWG(j)/EWT(m)/FCC/T IJP(c)

ACCESSION NR: AP5012315 UR/0048/64/028/011/1767/1769

AUTHOR: Takibayev, Zh. S.; San'ko, L. A.; Usik, P. A.

TITLE: Curves for 10^{11}-10^{14} eV shower [Report of All-Union Meeting on Cosmic Rays Physics, held in Moscow from October 4 to 10, 1963]

SOURCE: AN SSSR. Izvestiya fizicheskaya, v.28, no. 11, 1964, 1767-1769

TOPIC TAGS: cosmic ray shower, nuclear particle, particle interaction

ABSTRACT: Analysis of contradictions arising from a model for excited nucleons and a fire-ball model with experimental data on jets resulted in a model for intermediate resononsic and baryon pairs. Certain characteristics of jets are discussed from the aspect of the formation of shower particles principally from intermediate pi-pi-interaction with single pion exchange. The experimental data considered covers a wide range of primary energies.

Orig.art. has: 6 formulas and 3 graphs.

ASSOCIATION: Institut yadernoy fiziki Akademii nauk KazSSR (Institute of Nuclear Physics, Academy of Sciences KazSSR)

SUBMITTED: 00 ENCL: 00 SUB CODE: AA, NP

NO REF SOV: 006 OTHER: 001 JPRS

Card 1/1 mfs

KUCHIN, I.A.; USIK, P.A.

Interpretation of experimental data on nucleon-nucleon interaction at an energy of 300 Bev. Izv. AN SSSR, Ser. fiz. 28 no.11:1821-1823 N '64. (MIRA 17:12)

1. Institut yadernoy fiziki AN KazSSR.

RUS'KIN, Valeriy Ivanovich; USIK, P.A., kand. fiz.-matem. nauk, otv. red.; KOVALEVA, I.F., red.

[Isotopic spin; isospin analysis of strong interactions] Izotopicheskii spin; izospinovyi analiz sil'nykh vzaimodeistvii. Alma-Ata, Izd-vo AN Kaz.SSR, 1964. 83 p. (MIRA 17:9)

ACCESSION NR: AP4031147 S/0056/64/046/004/1257/1265

AUTHORS: Kuchin, I. A.; Usik, P. A.

TITLE: One meson exchange and asymptotics of scattering of nucleons and pions by nucleons

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1257-1265

TOPIC TAGS: one meson exchange, nucleon nucleon scattering, pion nucleon scattering, vertex function

ABSTRACT: The properties of the vertex functions in one-meson exchange graphs for NN and πN interactions are investigated for the purpose of ascertaining the conditions which the vertex (cutoff) functions must satisfy in order that the one-meson approximation be applicable to interactions at very high energies. It is found that the one-meson interactions must be described by one generalized graph and not by two, as previously assumed, and that the one-meson ex-

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ACCESSION NR: AP4031147

change approximation is valid at very high energies with the head-on NN and πN collisions not contributing significantly. It is concluded that the one-meson approximation gives a correct description of the basic features of inelastic interactions of nucleons and pions with nucleons for a wide range of energies (from several BeV upwards). The one-meson interactions play a predominant role because of the existence of one-meson states in the structure of the nucleon. However, the agreement between theory and experiment is bought at the price of giving up the locality of the pion-nucleon interaction. "In conclusion we express our deep gratitude to Professor Zh. S. Takibayev and D. S. Chernavskiy for discussions and advice, to V. I. Rus'kin for useful comments, and to M. P. Zhetbayeva and K. I. Khomenko for their great help in the computations." Orig. art. has: 2 figures and 18 formulas.

ASSOCIATION: Institut yadernoy fiziki Akademii nauk Kazakhskoy SSR (Institute of Nuclear Physics, Academy of Sciences, Kazakh SSR)

ACCESSION NR: AP4031147

SUBMITTED: 15Jul63 DATE ACQ: 07May64 ENCL: 00

SUB CODE: GE, NP NR REF SOV: 009 OTHER: 007

Card 3/3

L 2085-65 EWT(m) DIAAP

ACCESSION NR: AP4042204 S/0020/64/157/002/0328/0330

AUTHORS: Takibayev, Zh.S. (Academician AN KazSSR); Usik, P.A.; San'ko, L.A.

TITLE: Generation of heavy particles and their role in the explanation of the experimental results in the region of ultrahigh energies

SOURCE: AN SSSR. Doklady*, v. 157, no. 2, 1964, 328-330

TOPIC TAGS: heavy particle generation, ultrahigh energy, two maxima, nucleon nucleon collision, nucleon nucleus collision

ABSTRACT: In the nucleon-nucleon, or nucleon-nucleus collisions at ultrahigh energy (10^{12}ev) recorded in nuclear photoemulsions which were exposed to cosmic rays at high altitudes, sometimes two maxima are observed in the angular distribution of the showers. The present paper points out the shortcomings of the fire-ball model (the formation of two centers of generation.(See G.Coconi, Phys, Rev. 111, 1699 (1958)). This opinion is supported by the analysis of a large number of showers. It is suggested that as a result of nucleon-nucleon collision, an excited system is produced which disintegrates

Card 1/2

L 2085-65

ACCESSION NR: AP4042204

into pions, K-mesons, resonance particles, and Caryon pairs. Orig. art. has: 4 figures

ASSOCIATION: Institut idernoy fiziki Akademii nauk, SSSR (Institute of Theoretical Physics, Academy of Sciences SSSR)

SUBMITTED: 22Oct63

SUB CODE: NP

NR REF SOV: 008

ENCL: 00

OTHER: 009

Card 2/2

KUCHIN, L.A.; USIK, P.A.

Hyperon production in πN and NN-collisions. [Ad. fiz. 1 no.3: 547-550 Mr '65. (MIRA 18:5)

1. Institut yadernoy fiziki AN Kazakhskoy SSR.

USIK, P.V., red. ; FEDOTOVA, T.D., red.; POSAZHENNIKOVA, Ye.F., red.

[Increasing the economic efficiency of capital investments in the industry of the Moldavian S.S.R.] K voprosu povysheniia ekonomicheskoi effektivnosti kapital'nykh vlozhenii v promyshlennosti MSSR, Kishinev, Izd-vo "Shtiintsa" AN Moldavskoi SSR, 1962. 99 p. (MIRA 18:5)

[illegible], G. F.; PUDCHIK, A. T.; USIK, V. A.

"Investigations of Low-Lying States of Silicon-28 Excited in the Reaction $Al^{27}(\alpha,t)Si^{28}$."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

IF, AN UkSSR (Inst Physics, AS UkSSR)

USIK, V.T.

New technology for manufacturing precision cylindrical springs.
Mashinostroitel' no.1:32-33 Ja '65. (MIRA 18:3)

ACCESSION NR: AP4042960 S/0048/64/028/007/1164/1168

AUTHOR: Nemets, O.F.; Rudchik, A.T.; Usik, V.A.

TITLE: Investigation of the low lying states of silicon 28 obtained in the (α,t) reaction on aluminum 27 /Report, 14th Annual Conference on Nuclear Spectroscopy held in Tibilisi 14-21 Feb 1964/

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v.28, no.7, 1964, 1164-1168

TOPIC TAGS: nuclear reaction, alpha reaction, nuclear spectroscopy, silicon, aluminum

ABSTRACT: The $Al^{27}(\alpha,t)Si^{28}$ reaction was investigated with the purpose of exploring the suitability of (α,t) reactions for nuclear spectroscopy investigations. For this purpose, (α,t) reactions would have the advantage over (d,n) reactions that the energies of the tritons could be more accurately measured than those of the neutrons. A beam of 27.2 MeV α-particles was employed, and two groups of tritons were distinguished, corresponding to the ground state of Si^{28} and its first excited state at 1.78 MeV. The cross sections were measured with an accuracy of 15%. The angular distributions of the two triton groups were sharply peaked in the forward

direction; this indicates that the reaction was predominantly direct. It is estimated that compound nucleus formation contributed only 1% to the formation of the ground state, and 3% to the formation of the excited state. The reaction is discussed briefly in terms of the dispersion theory of direct reactions. It is concluded that the stripping mechanism should predominate, but that direct knock-out of the triton with capture of the α-particle, as well as other more complex mechanisms may contribute appreciably. The angular distributions are compared with the stripping reaction theory of M.El Nadi (Phys.Rev.120,1360,1960). The principal (forward) peak in the distribution of each of the triton groups is well represented by the theory with a value of the the interaction radius (5.1 fermi) that is consistent with other measurements on Al^{27}. A secondary maximum at about 30° cannot be explained by simple stripping. The position of this maximum can be obtained from Butler's theory of direct reactions with knock-out processes included, but only by assuming a large value for the interaction radius. It is concluded that (α,t) reactions are suitable for nuclear spectroscopy investigations, but that the angular distributions can be explained only by considering the contributions of various reaction mechanisms and the distortion of the wave functions by the Coulomb field. Orig.art.has: 3 formulas, 3 figures and 3 tables.

ACCESSION NR: AP4042960

ASSOCIATION: Institut fiziki Akademii nauk USSR (Institute of Physics, Academy of Sciences, SSSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: NP NR REF SOV: 002 OTHER: 006

3/3

USIK, V.D. (Simferopol')

So-called isolated allergic myocarditis in bronchial asthma.
Vrach.delo no.3:279-281 Mr'58 (MIRA 11:5)

1. Patologoanatomicheskoye otdeleniye (zav. - kand.med.nauk Yu.G. TSellarius) oblastnoy klinichskoy bol'nitsy.
(HEART--DISEASES)
(ASTHMA)

USIK, V.D.

Clinical and pathological aspects of pheochromocytoma. Probl.endok. i gorm 4 no.3:99-102 My-Je '58 (MIRA 11:8)

1. Iz patologoanatomicheskogo otdeleniya (zav. - dotsent Yu.G. TSellarius) Krymskoy oblastnoy klinicheskoy bol'nitsy (glavnyy vrach N.I. Markova).
(PHEOCHROMOCYTOMA, case reports (Rus))

KARPUKHINA, T.Ye.; USIK, V.D. (Simferopol')

Clinical and anatomical features of tuberculous meningitis in adolescents and adults. Vrach.delo no.5:535-537 My '59.

(MIRA 12:12)

1. Klinika tuberkuleza (zav. - prof. N.I. Kornetov) i patologoanatomicheskoye otdeleniye (zav. - dotsent Yu.G. TSellarius) Oblastnoy klinicheskoy bol'nitsy.

(MENINGES--TUBERCULOSIS)

TSARENKO, P.P.; BIRKUN, A.A.; PASHKOVA, V.S.; USIK, V.D.

Clinical aspects and pathological anatomy of unusual forms of goiter. Probl. endck. i gorm. 6 no.6:80-86 '60. (MIRA 14:2)
(GOITER)

SRABONYAN, M.Kh.; USIK, V.I.

Stages of the formation of granitoids in the Greater Caucasus.
Sov.geol. 7 no.2:134-138 F '64. (MIRA 17:3)

1. Severo-Kavkazskoye geologicheskoye upravleniye.

[illegible], K.V., prof., [illegible] tekhn. nauk; [illegible], V.[illegible], kand. [illegible] nauk;
[illegible], V.[illegible], kand. tekhn. nauk

Testing of ele[illegible] filters. Bor'ba [illegible] sil. [illegible]164-167 '64.
(MIRA 18:2)

USIK, V. S.

Glass reinforced plastics are the material of the future. Mashinostroitel' no.10:33 O '62. (MIRA 15:10)

(Glass reinforced plastics)

USIK, V.S.

Seminar on wear-resistant chromium plating and alloys.
Mashinostroitel' no. 5:41 My '64. (MIRA 17:7)

USIK, V.T.

Cutting grooves in cylinders. Stan.i instr. 24 no.10:38-39 O '53.
(MLRA 6:11)
(Metal cutting)

Usik, Yu. F.

S/147/59/000/04/020/020
E031/E413

AUTHOR: Zolotukhin, V.K.

TITLE: The Scientific-Technical Conference at Khar'kov Aviation Institute

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1959, Nr 4, pp 161-165 (USSR)

ABSTRACT: In May 1959, the 16th Conference of Professorial and Teaching Staff took place.

Strength of Aircraft Section.

"On the Theory of Bending of Thin-Walled Columns" by Docent, Candidate of Technical Sciences L.P.Vinokurov; "The Simulation of Static Experiments on Thin-Walled

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Structures" by Candidate of Technical Sciences L.A.Kolesnikov and Senior Instructor V.K.Zolotukhin; "The Bending of Beams Framing an Opening" by Candidate of Technical Sciences L.A.Kolesnikov; "The Influence of the Rigidity of Ribs and Beams on their Bending" by Assistant N.A.Snelomov; "The Calculation of the Bending of Rectangular Plates by the Discrete Method" by Assistant Yu.P.Patrov; "The Calculation of Cylindrical Shells" by the Method of Discrete Variables" by Aspirant N.I.Gur'yev.

Engine Construction Technology Section.

"The Choice of a Scheme for a Hydraulic Servo-System for the Automation of Welding Processes" by Assistant V.V.Balatskiy; "An Investigation of the Process of Polishing by an Abrasive Belt" by Senior Instructor, Candidate of Technical Sciences V.N.Verezub; "The Investigation of the Operation of a Pneumatic-Hydraulic Plant" by Assistant V.I.Basteyev;

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"A Static Analysis and Calculation of the Accuracy of the Technological Processes of Machining" by O.M.Parkhomenko; "The Automatic Welding of Long Panels" by Candidate of Technical Sciences L.P.Kasakov; "Prospects in the Use of Specialised Computers for the Determination of the Optimum Geometry of Cutting Tools" by Docent, Candidate of Technical Sciences V.P.Kosharnovskiy; "The Spreading of the Experience of Innovators and the Classification of Organizational-Technical Measures in Machine Construction" by Senior Instructor M.M.Apanovich; "Features of Measurable Abrasion of a Cutting Tool in Fine Sharpening" by Assistant V.N.Malikov; "An Investigation of the Process of Compression at High Velocities of Deformation" by Docent, Candidate of Technical Sciences A.K.Bayev; "The Standardization of Vibration Effects on the Human Organism in Aircraft Production" by Senior Instructor V.D.Ivanov.

Theory and Construction of Aircraft Engines and Propellor-Driven Machines Section. "The Investigation

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of the Flow Between the Inlet and Outlet Valves of a Turbine" by Instructor, Candidate of Technical Sciences V.N.Yershov; "The Variation in the Stage Parameters of an Axial Compressor in Accordance with the Size of the Radial Clearance" by Assistant A.N.Anyutin; "On the Problem of Non-Stationary Heat Transfer" by Assistant S.D.Frolov; "The Influence of an Electric Field on the Flame of a Burner" by Senior Engineer P.P.Kostenko; "Calculation of the Temperature Compensation of Capacitance Pressure Pick-Ups" by Assistant L.Ya.Astaf'yev.

Aerohydrodynamics Section.

"Ideal Hypersonic Flow Round a Body" by Assistant V.I.Kholyavko; "The Control of the Boundary Layer of a Wing by Perforation of the Leading Edge" by Assistant Ye.P.Vachasov; "The Gas-Hydraulic Analogy and its Application" by Senior Instructor D.A.Munshtukov; "The Aerodynamic Investigation of Wing Profiles for Small Reynolds Numbers" by Engineer Yu.F.Usik.

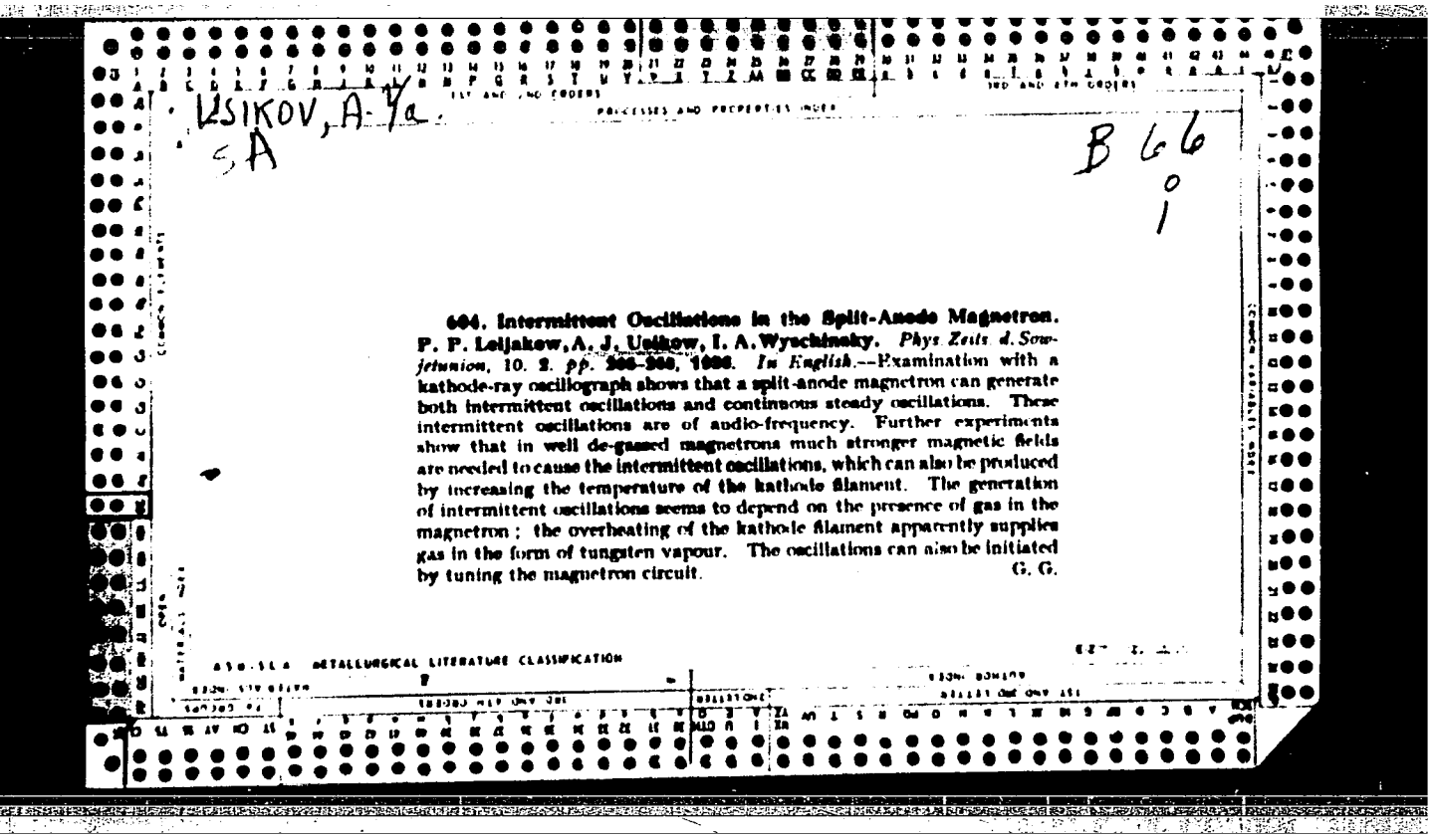
MIKHAYLOV, I.; USIKOV, A.

Answering questions. Okhr. truda i sots. strakh. no.3:75-77 S '58. (MIRA 12:1)

1.Tekhnicheskiy inspektor TSentral'nogo Komiteta profsoyuza rabotnikov kul'tury (ror Mikhaylov).
(Theaters--Employees) (Insurance, Social)

VAKSER, I.Kh. (Khar'kov); USIKOV, A.Ya. [Usykov, O.IA.] (Khar'kov)

Use of radar techniques in the automation of the operation of electric railroads. Avtomatyka 9 no.5:75-79 '64. (MIRA 18:2)



USIKOV, A. Ya.
SA

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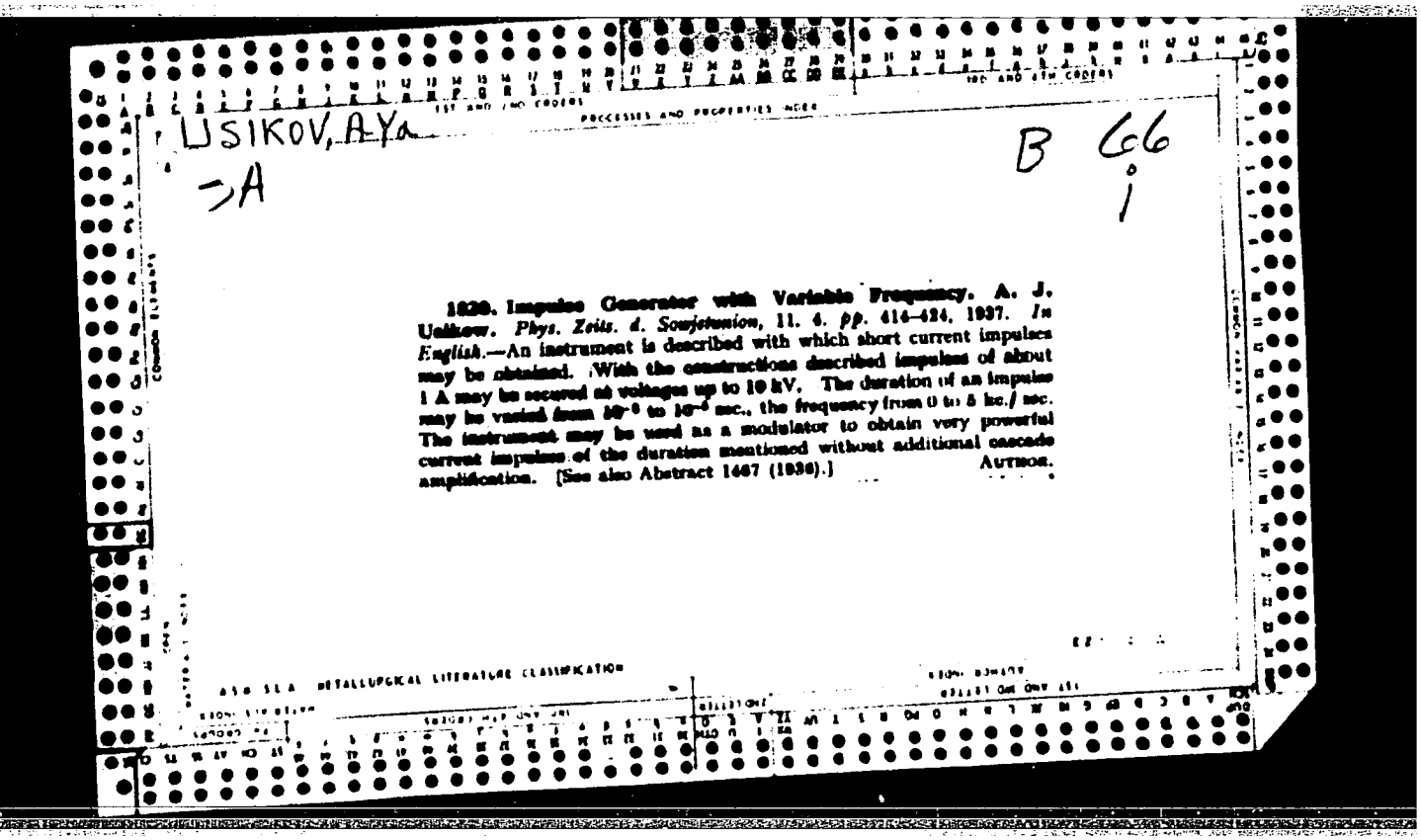
604. Intermittent Oscillations in the Split-Anode Magnetron. P. P. Leljakow, A. J. Usikow, I. A. Wyschinsky. *Phys. Zeits. d. Sowjetunion*, 10. 2. pp. 366-380, 1936. *In English.*—Examination with a kathode-ray oscillograph shows that a split-anode magnetron can generate both intermittent oscillations and continuous steady oscillations. These intermittent oscillations are of audio-frequency. Further experiments show that in well de-gassed magnetrons much stronger magnetic fields are needed to cause the intermittent oscillations, which can also be produced by increasing the temperature of the kathode filament. The generation of intermittent oscillations seems to depend on the presence of gas in the magnetron; the overheating of the kathode filament apparently supplies gas in the form of tungsten vapour. The oscillations can also be initiated by tuning the magnetron circuit. G. G.



USIKOV, A.Ya.
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1220. Impulse Generator with Variable Frequency. A. J. Usikow. *Phys. Zeits. d. Sowjetunion*, 11. 4. *pp.* 414–424, 1937. *In English.*—An instrument is described with which short current impulses may be obtained. With the constructions described impulses of about 1 A may be secured at voltages up to 10 kV. The duration of an impulse may be varied from 10^{-6} to 10^{-4} sec., the frequency from 0 to 5 kc./sec. The instrument may be used as a modulator to obtain very powerful current impulses of the duration mentioned without additional cascade amplification. [See also Abstract 1467 (1936).] AUTHOR.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

USIKOV, A. Ya.

TA 12T88

USSR/Transmission Lines Mar 194
Testing equipment, Electrical

"Location of the Breakdown of Electrical Transmission Lines," A. I. Usikov, 6 pp

"Zhur Tekh Fiz" Vol XVI, No 3

Connection diagram of apparatus. Photographs of apparatus with examples of interpretations of signals.

12T88