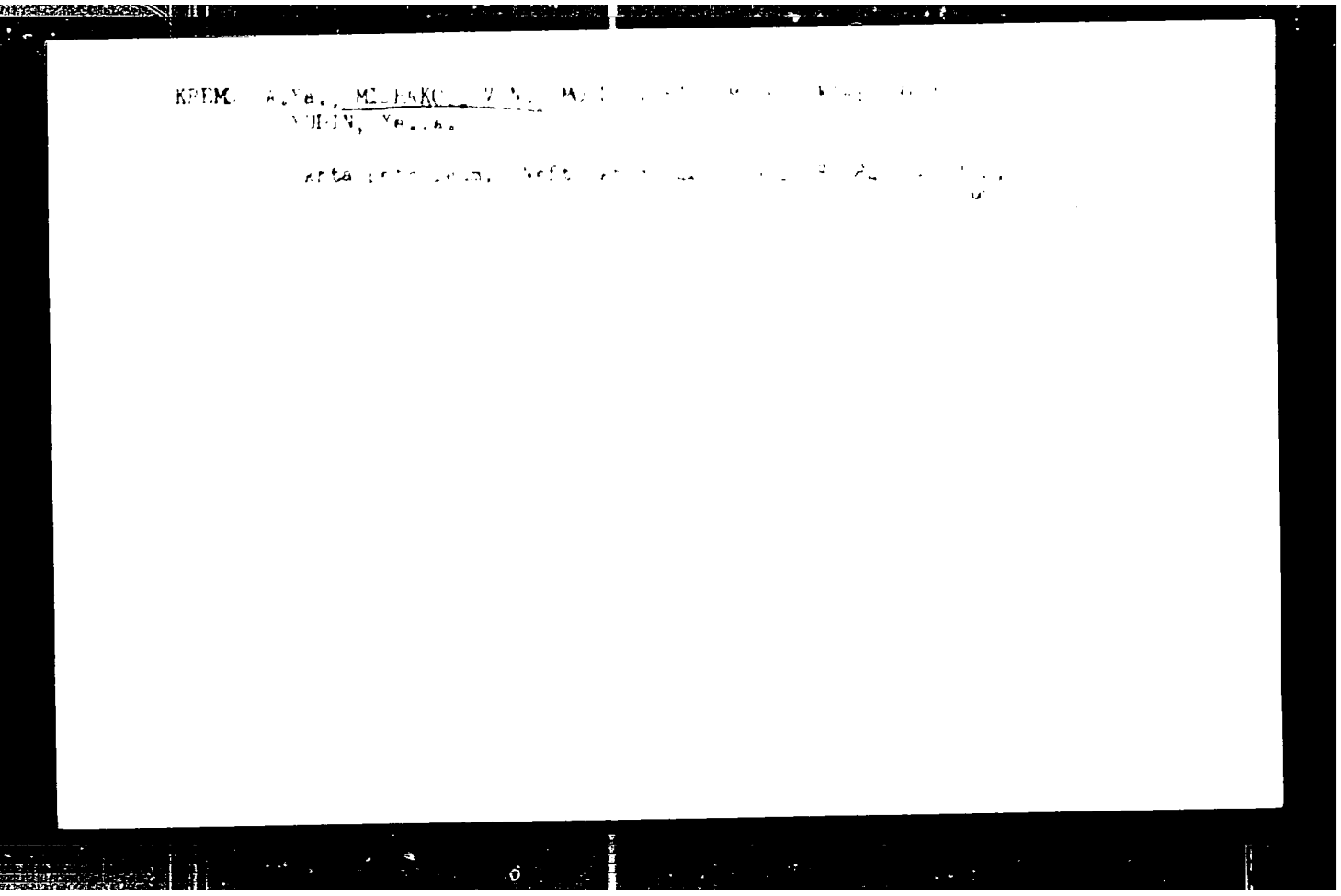

KONSTANTINOV, Ye.A.; LEVANDOVSKIY, Ye.A., MISHAKOV, Ye.S.; PEKARSKIY, S.Ya.; KOVALEV, N.I., otvetstvennyy redaktor; SESLAVSKAYA, T.V., redaktor; MOZHZHEVELOVA, G.B., redaktor IVANYAN, K.N., tekhnicheskiy redaktor

[Measuring instruments; reference catalog] Izmeritel'nye pribory; katalog spravochnik. Moskva, Bi.r. tekhn. inf rmatsii, 1956. 157 p. (MLRA 10:3)

1. Russia (1...: ...S.S.R.) Ministerstvo rail tekhnicheskoy promyshlennosti.
(Measuring instruments)

ASTAF'YEV, A.V.; KONSTANTINOV, Ye.A.; MISHAKOV, Ye.S.; PEKARSKIY, S.Ya.; DOROFEYEV, V.A., tekhn. red.

[Reference catalog on measuring instruments] Katalog-spravochnik izmeritel'nykh priborov. Moskva, Biuro tekhn. informatsii, 1952. 163 p. (MIRA 16:8)

1. Russia (1923- U.S.S.R.) Ministerstvo promyshlennosti sredstv sviazi. (Electric measurements)
(Telecommunication--Equipment and supplies)

25833

11500 (2508, 2808, 1555)

S/536/61/000/049/001/003
E111/E435

AUTHORS: Khramov, V.D., Engineer and Mishakov, Ye.V., Engineer

TITLE: Casting large thin-walled parts by the method of directed-successive crystallization

PERIODICAL: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy. No.49, 1961, pp.5-23. Voprosy tekhnologii liteynogo proizvodstva

TEXT: When large, thin-walled castings are being produced the following types of common defect are particularly liable to occur: incomplete filling; non-metallic inclusions formed through turbulent flow of the metal; shrinkage cavities due to breakdown in the order of crystallization. In the present article, the authors discuss different methods of feeding the metal and consider how their adoption influences the development of defects in large thin-walled castings. They discuss first methods based on the introduction of the metal into the mould using an overflow gate system. When metal enters the mould near the top, shrinkage cavities are avoided but non-metallic inclusions, air bubbles and possibly violent oxidation can occur. This technique is unsuitable for magnesium alloys but can be used for aluminium alloys

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Casting large thin-walled ...

for moulds under 150 mm in height. When metal enters the mould at the bottom, non-metallic inclusions are less prevalent but oxidation occurs and shrinkage cavities can arise and it is generally unsuitable for the applications being considered. The advantages of these two techniques are combined when the mould is filled from an auxiliary cylindrical reservoir large enough in diameter to prevent freezing of metal, connected to the mould by a vertical slot and supplied by metal near its base; with large parts, however, control difficulties arise which lead to defects. The drawing of metal directly into the mould under vacuum has many advantages but can not be used for large castings of magnesium alloys if the casting height reaches 3 m; the same considerations apply to castings under pressure. The method recommended, that of directed-successive crystallization, is based on the technique of supplying the metal to the mould through standpipes which remain stationary while the mould is lowered in such a way that the ends of the pipes are 50 to 100 mm below the metal surface in the slot feeders. The mould can be earth or metal and the slots which connect the feeder reservoirs to the mould proper are 4 to 7 mm wide and extend over its whole height. In some arrangements the

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Casting large thin-walled ...

standpipes discharge directly into the mould proper. The reservoirs can be on the inside or outside. The tundish nozzles are closed by spherical stoppers and are aligned exactly over the feeder reservoirs. The tundish and standpipes are heated. Ideally, the rate of lowering of the mould should coincide with the rate of crystallization. The first portions of metal are isolated in a well which should not be rigidly attached to the base since this would create additional stresses. The standpipes are either preheated by gas outside the mould immediately (usually 3 to 5 min) before use, when the mould is relatively low and the pipes are large enough to retain their temperature. Freezing of metal in the pipes can also be avoided by inserting nipples into their lower ends so as to keep a good height of metal in the pipes. Alternatively, the pipes of any type of steel are heated by feeding directly an electric current (24 to 30 V and 200 to 400 A). As a basis for the design of the new type of casting systems, the authors discuss its theory and draw some practical conclusions. The flow coefficient for the pipes was determined in numerous experiments with type МЛ5 (ML5) alloy using a special model.

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Casting large thin-walled ...

Pipe lengths of 0.1 to 3.5 m and 8 to 18 mm diameter were investigated, showing that the coefficient falls smoothly with pipe length. The correct selection of flow conditions was shown to be of paramount importance in casting quality, especially with aluminium and magnesium alloys. This is mainly due to oxidation (producing secondary slag) which occurs above the critical velocity of rise of liquid in the mould corresponding to turbulence. This is governed by the Reynolds number; thus, for a given alloy the critical velocity depends on the hydraulic radius (i.e. wall thickness of the casting). The value (mm/sec) falls from 60 to 3 if the wall thickness is increased from 3 to 10 mm. To find the number of pipes required the filling time is calculated from the height of the casting and the critical velocity. The total flow of the metal is next calculated from the weight of the casting and the filling time. The number of pipes is then decided on constructional grounds and the flow per pipe calculated, from this and the height of pipe required, the pipe diameter is found using experimental flow rate - height diameter data. The new method enables part of uniform wall thickness (4 mm) to be obtained with heights greater than was possible hitherto the mechanical

Card 4/5

Casting large thin-walled ... 25833 S/536/61/000/049/001/003 E111/E435

properties being superior and not anisotropic. Examples of values for an ML5 alloy casting specified and obtained are, respectively: tensile strength, 16.5, 18.0 - 21.5 kg/mm^2; compressive strength, 16.5 30 - 39; relative elongation, 3.0, 5.0 - 7.0%; yield point in tension, 9.0, 10.0 - 12.5 kg/mm^2; yield point in compression, 8.0, 10.0 - 13.5 kg/mm^2. The extension of cast constructions made possible by the new method represents a substantial gain. There are 15 figures, 3 tables and 2 Soviet references.

Card 5/5

MISHAKOVA, A.P.

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OBSERVATION OF FORMATION AND DECAY OF UNSTABLE PARTICLES IN EMULSION CHAMBERS. V. V. Alpers, B. I. Gerasimova, L. I. Gurevich, A. P. Mishakova and L. B. Sorkova. Doklady Akad. Nauk S.S.S.R. 109, 2365-8(1956) Nov. 11. (In Russian)

Track tracings of unstable particles were recorded on emulsion film. Cases of associated stars were studied to find K^- mesons associated with Λ^0 and other particles. Investigations of 4-prong stars to find τ mesons and 2-prong stars to find hyperons were made. 386 tracks of π mesons were measured, 314 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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TRANSLATION D 419421, P. 19

MISAKOVA, A.P.

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publ.: November 21st 1955

rec.: January 30th 1956

reviewed: February 3rd 1956

transl.I.E.: February 7th 1956

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602

ND Doki. Akad. Nauk, 105, 451-453 (1955)

On the Spin and Parity of the τ-Meson. (Russian)

by I.I. GURKEVIČ, A.P. MISAKOVA

③ (over)

I. I. Gurevič, etc.

According to the author's opinion the statement made by E.AMALDI, E.FABRI et al. (Suppl.Nuovo Cimento, 12, 419 (1954)) to the effect that the τ-meson has the spin 0 or 3 and antisymmetry, is incomplete because a τ-act of decay may belong to group b or group c. With the acts of decay hitherto observed it is true for the charge signs (in brackets) of the pions which are produced on this occasion, the complete traces of which are present in the emulsion, that: 15 (++-) + + 3(++)+ 15 (+-) + 1 (-). 31 cases belong to the domains a, b, or c; 3 cases belong to two different domains (b and c) because of the similarity of the energies of the negative and

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I. I. Gurevich, etc.

of the positive pions. The following distribution of all 34 τ-mesons over the FABRI domains is the most probable (69%): n(a) = 11, n(b) = 12, n(c) = 11. From PEARSON'S probabilities, according to which a pion which has the opposite charge with respect to the τ-meson belongs to the domains a, b, and c, there follow with the greatest probability the cases (0-) and (3-). The spin of the τ-meson is not equal to 1. The more sensible analysis of the 31 pure cases alone leads to the following distribution: $n_a = 11$, $n_b = 10$, $n_c = 10$; in that case the most probable spin value of the τ-meson is S = 0, and it has asymmetry. With even more exact conditions prevaling, $S_\tau = 1$ and $S_\tau = 2$ are strictly excluded

(over)

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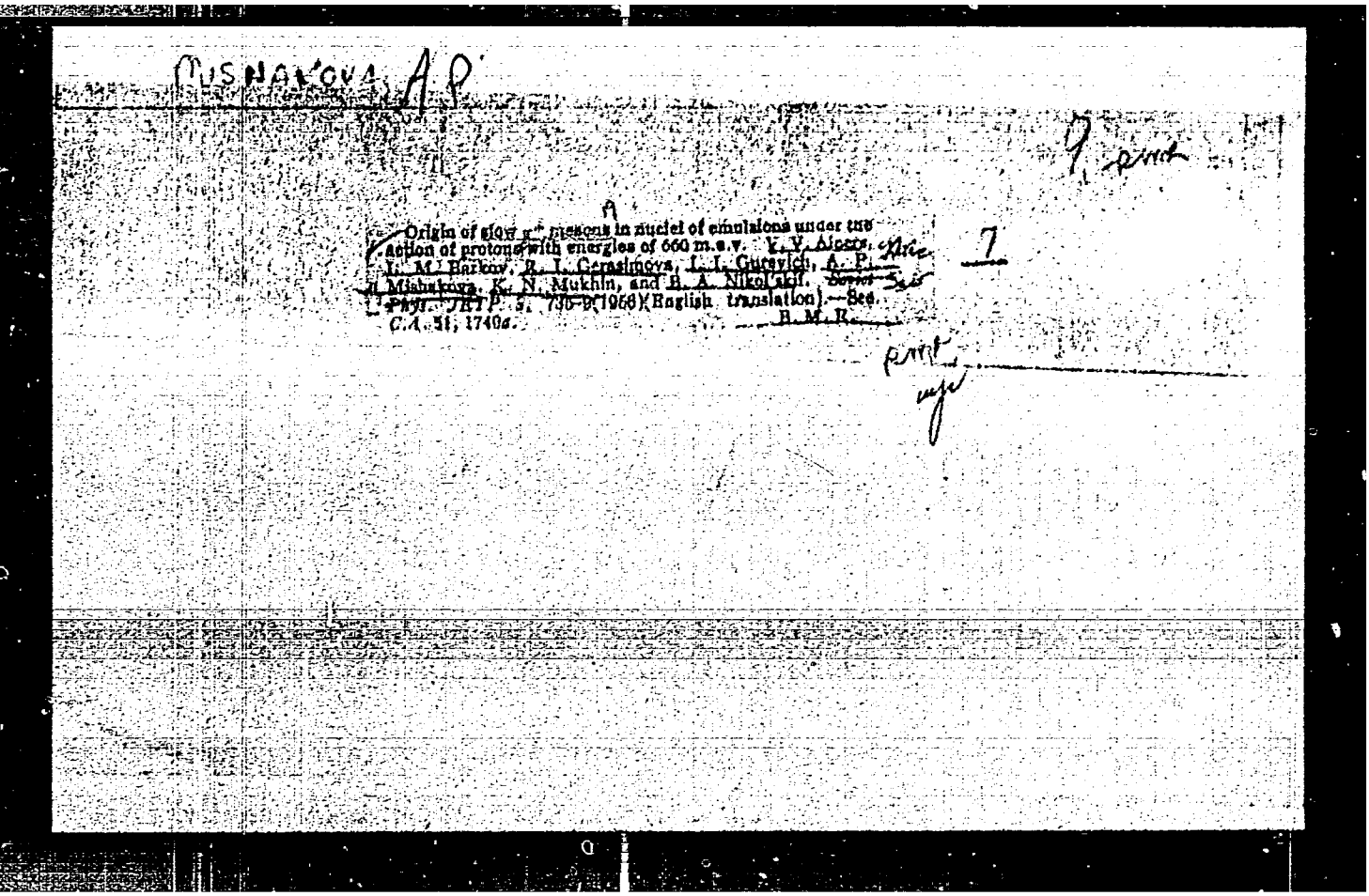
and the cases (3-) and/or (0-) have PEARSON'S probabilities 0,28 and 0,80 respectively. Thus, the τ-meson is most probably, just like the pion, a pseudoscalar particle. In spite of the similarity of its mass $m_\tau = (965,5 \pm 0,7)\, m_e$ to that of the θ-meson $m_\theta = (965 \pm 10) m_e$, the θ- and the τ-meson are different particles, because, according to I.S. ŠAPIRO (Žurn. eksp.i.teor. fis, 27, 257, (1954)) they could otherwise not have the spin 0. If the τ-meson is really pseudoscalar, it has the following alternative decay scheme: $\tau^+ \to \pi^+ + \pi^+ + \pi^-$ and $\tau^+ \to \mu^+ + \nu$. Because of the analogy with the newly discovered decay of K-mesons ($K_{\mu 2} \to \mu + \nu$) the exact determination of the mass of the $K_{\mu 2}$-meson is of utmost importance.



MUSNAKOVA, A. P.

Origin of slow π^+ mesons in nuclei of emulsions under the action of protons with energies of 660 m.e.v. K. V. Alexeeva, I. M. Barkov, R. L. Cerasimova, L. L. Gurevich, A. P. Musnakova, K. N. Mukhin, and B. A. Nikol'skii. Zhur. eksp. i teor. Fiz. 32, 735-9(1958)(English translation).—Sec. C.A. 51, 17408.

B. M. R.

MISHAKOVA, A.P.

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, 1034-1037

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.

Card : 1/1

MISHAKOVA, A. I. MISHAKOVA, A. B.

SUBJECT USSR / PHYSICS CARD 1 / 2 Pa - 1775
AUTHOR AL'PERS, V.V., MISAKOVA, A.P.
TITLE The Decay of the τ-Meson.
PERIODICAL Zurn.eksp.i teor.fis, 31, fasc.5, 904-905 (1956)
Issued: 1 / 1957

On the occasion of a further inspection of the emulsion chamber irradiated in the stratosphere in May 1955 (V.V.AL'PERS et al, Dokl.Akad.Nauk, 108, 207 (1956) a decay act of a particle brought to a standstill in the emulsion was found and interpreted as the decay of a single positive pion with the typical image of $\pi \rightarrow \mu \rightarrow e$ -decay. The range of the myon was 550 microns. The trace of the primary particle enters the emulsion under a wide angle and the trace of the secondary particle (pion) is parallel to the emulsion plane. This renders interpretation of the case difficult, for the possibility remains to look upon this case as the scattering of a pion. The grain density was measured on some pion traces which take the same course under the same angle of inclination and in the same direction as the primary particle. A comparison of grain density in connection with these traces with that of the trace under investigation showed that scattering of a pion is quite out of the question. Consequently, this must be the decay of a particle which came to a standstill.
The range of the pion is 600 microns and the energy E = 4,6 MeV, which excludes the decay of a K-particle according to the scheme $K \rightarrow \pi + \pi^0 + Q$. Therefore this decay can be looked upon as the decay of a τ-meson with the alternating decay scheme into a positive and into two neutral pions ($\tau \rightarrow \pi^+ + 2\pi^0$). When follow-

ing the trace of the τ-meson it was found that it was created outside the emulsion chamber before entering it; its remaining range in the emulsion was 3,76 cm. The exact determination of the mass of the τ-meson is rendered difficult by the wide angle under which the trace enters the emulsion. Measurements of the grain densities on the given trace and on the traces of those pions and protons which had the same angle of entry were carried out. The results of measuring ionization showed that the mass of the investigated particle is smaller than the mass of a proton but larger than that of a pion.

Thus it may be concluded from these ionization measurings that the investigated particle is a K-meson.
This is a nearly verbal translation of this short report.

INSTITUTION:

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

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 435

Author : Alpers, V.V., Gurevich, I.I., and Mishakova, A.P.
Title : Observation of Decays of Positive Hyperon and Single-Charge Hyperfragment

Orig Pub : Dokl. AN SSSR, 1956, 108, No 2, 207-209

Abstract : An emulsion chamber, exposed at an altitude of 27 km, detected decay of remaining Σ^+ hyperon, following the scheme $\Sigma^+ \rightarrow p + \pi^0 + Q$. The value of Q obtained was 113 ± 3.8 Mev. The hyperon was formed in a star of the 20 + ln type. The hyperfragment occurred in a 4 + On star and can be explained if a scheme Λ^0 T* → p + p + n + π^- + Q is assumed for the decay. Two protons remained in the emulsion, the π^- -meson left the chamber, and its energy was determined from measurements of the ionization. A value of 40 ± 5.8 Mev was obtained for Q, and value B_{Λ^0} = -5.3 ± 5.6 Mev was obtained for the binding energy of the Λ^0 particle in the T nucleus.

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MISHAKOVA, A. P.

5465 A 19

ON THE SPIN AND PARITY OF THE τ-MESON. I. S. Shapiro and E. I. Dolinsky (Moscow State Univ.) and A. P. Mishakova (USSR Academy of Sciences, Moscow). Nuclear Phys. 5 40-4(1957) March.

Energy distribution curves of π^--mesons produced in τ^+-decays have been obtained by assuming that the isobaric spin of the three π-meson system equals unity and the ratio of probabilities of τ and τ' decays is 4. Comparison of the theoretical results with experimental data referring to 492 τ^+-decay events shows that the most probable values for τ-meson spin and parity is the 0^- combination. (auth)

A.P. Mishakova

Distr: 4B3d

2994

DECAY OF A τ'-MESON. V. V. Alperc, and A. P. Mishakova. Soviet Phys. JETP 4, 748-9(1957) June.

Examination of a photographic emulsion exposed in the stratosphere in May 1955 revealed a particle decaying into a single positive pion which exhibited a typical picture of $\tau \rightarrow \mu + \pi^-$ decay. The range of the μ meson is 146μ. The track of the primary particle was inclined at a large angle to the emulsion and that of the secondary particle (the pion) was parallel to the emulsion. This complicates an interpretation of the event which might still be considered as the scattering of a pion. Measurements were made on the grain density of several pion tracks inclined at the same angle and going in the same direction as the primary particle. Comparison of the grain densities of these tracks with the density of the track under consideration indicated that the scattering of a pion is definitely excluded. This must therefore be a particle decay event. The path of the pion measured 660μ and its energy was determined to be 4.6 Mev; this excludes the decay of a K particle according to the scheme $K \rightarrow \pi + \mu + Q$. The event was therefore interpreted as the decay of a τ meson. (A.C.)

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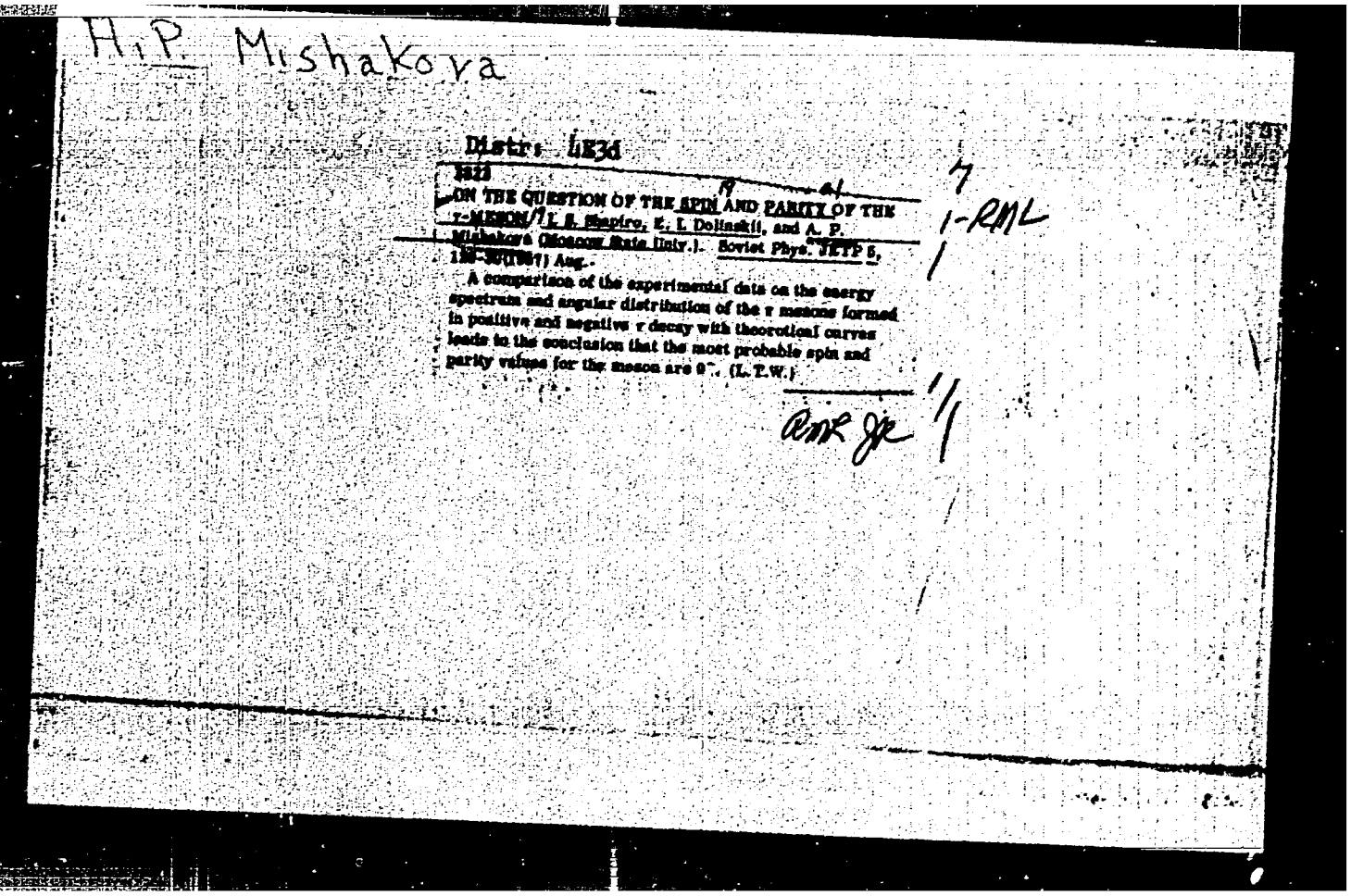

N.P. Mishakova

Distr: 4E3d

1821

ON THE QUESTION OF THE SPIN AND PARITY OF THE τ-MESON/I. S. Shapiro, Z. L. Dolinskii, and A. P. Mishakova (Moscow State Univ.). Soviet Phys. JETP 5, 1182-1187(1957) Aug..

A comparison of the experimental data on the energy spectrum and angular distribution of the τ mesons formed in positive and negative τ decay with theoretical curves leads to the conclusion that the most probable spin and parity values for the meson are 0⁻. (L. T. W.)

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AUTHOR SHAPIRO, I.S., DOLINSKIY, ... , MISHAKOVA, A.P.

TITLE On the Spin and Parity ... e τ-Meson (K voprosu o spine i chetnost. τ-mezona).

PERIODICAL Zhurnal Eksperimental'noi i Teoret. Fiziki, 1957, Vol 32, Nr 1, pp 173-175 (U.S.S.R.)

ABSTRACT Received 3/1957 Reviewed 4/1957

On the strength of consideration which formerly have not been taken into account, the present work shows that experimental data exclude the possibility investigated by MARSHAK. The authors hereby base on the following considerations. 1) The isotopic spin $I_{3\pi}$ of the system of 3 pions occurring on the occasion of τ-decay is equal to 1. This assumption made also by other authors results from the GELL-MANN scheme according to which the τ-meson has the isotopic spin $I_\tau = 1/2$. The slow decay $\tau^+ \to \pi^+ + \pi^+ + \pi^-$ can be explained by the non-conservation of isotopic spin. 2)K- esons which decay according to the scheme $\tau' \to \pi^\pm + 2\pi^0$ are identified with τ-mesons. 3) According to various experimental ... $W_\tau / W_{\tau'} \sim 4$ is true for the ratio of probabilities of τ and τ'-decay ... ing validity of conditions 1) and 2), it holds that $W_\tau / W_{\tau'} = ... \cdot \Phi^2 / (F + \Phi)$. Here F denotes a quantity which can be obtained by inte... the squares of the moduli of the matrix-elements, which are symmetr... with respect to the momenta of ... pions, over the energies of the pi... ns. Φ denotes an analogous quantity which can be obtained from the matrix-elements which are symmetric only with respect to the momenta of the identical pions. It is found that $\Phi \sim 0$ i.e. pions are pr... ced only in states that are symmetric with respect to

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On the Spin and Parity of the τ-Meson. PA - 20[illegible]

the momenta of all [illegible] particles. If this assumption is correct the spectrum of positive pions in the case of τ'-decay must be identical with that [illegible] positive pions in the case of τ-decay. The lowest orbital momenta corresponding to these data are given in a scheme which contains also the orbital momenta and matrix-elements used by DALITZ. A diagram shows the curves for the energy spectrum of pions which have been computed from the matrix elements [illegible] the symmetric states. The curves corresponding to the spins and symmetries (parities) 1^+, 1^-, and 2^+ differ considerably from the experimental spectrum. Also the curve for the case 2^- agrees less well with the experimental value than the curve corresponding to case 0^-. Some [illegible] parity [illegible] is the most probable for spin and [illegible] are practically excluded. Thus the [illegible] that lead to an occurrence [illegible] the scheme: τ [illegible] (-) [illegible] -problem. [illegible] illustration)

ASSOCIATION: Moscow State University

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Card 2/2

PA - 2046

AUTHOR: AL'PERS,V.V., GUREVIC,I.I., KUTUKOVA,V.M., MISAKOVA,A.P. NIKOL'SKIJ,B.A., SURKOVA,L.V.

TITLE: The Study of Explosion Showers produced by High Energy Cosmic Particles (Russian).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 112, Nr 1, pp 33-36 (U.S.S.R.)
Received: 2 / 1957 Reviewed: 3 / 1957

ABSTRACT: The present work deals with the preliminary results obtained by studying 29 showers by the method of the emulsion chamber. The emulsion chamber consisted of 100 layers of 10 cm diameter and 450 μ thickness. This emulsion chamber was irradiated in May 1955 for 7 hours at a height of 27 km. On the occasion of the microscopic investigation of these emulsions the explosion showers were fixed with more than 5 relativistic traces which are in a sufficiently narrow cone. Furthermore, the rays were fixed with more than 3 relativistic traces. On the occasion of the examination of 26,5 cm^3 photoemulsion 27 explosion showers and 29 rays were found. In the course of a further investigation of the rays through the emulsion chamber it was found that two of them originated from stars. The remaining 27 rays were found to be electron-photon showers. On the occasion of the microscopic investigation of the explosion showers the primary particle which excites the shower, the

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The Study of Explosion Showers produced by High Energy Cosmic Particles (Russian).

number of relativistic particles in the shower, and the angular distribution of the shower particles relative to the shower axis were determined. Further, the angle α between the symmetry axis of the shower and the direction of the particle producing the shower were determined. Experimental results are shown in a table. A diagram illustrates the dependence of the number of relativistic traces in the shower on the angle $\vartheta_{1/2}$, which encloses half of the shower particles. In the diagram the showers caused by heavy particles form a special domain and are characterized by a considerably larger number n_s of shower particles.

If it is assumed that the observed showers are produced by nucleon-nucleon showers, it may be expected that the angular distributions of the shower particles in the center of mass system of the two colliding particles are symmetric with respect to "center of mass angles" $\Theta_{Sp} = \pi/2$. Next, the formulae for transition to the center of mass system, which

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The Study of Explosion Showers produced by High Energy Cosmic Particles (Russian).

are obtained on this occasion, are explicitly given for the case of ultrarelativistic shower particles. By assuming a nucleon-nucleon production mechanism of the shower we find $n_s = k\sqrt{\operatorname{ctg} \vartheta_{1/2}}$. Some showers satisfy this relation and can thus be assigned to nucleon-nucleon interaction. However, the angular distributions of the shower particles contradict this conclusion, for a noticeable asymmetry of angular distribution was found. All showers produced by nucleons and π-particles have a marked asymmetry with respect to the angle $\theta = \pi/2$.

ASSOCIATION: Not given
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MISHAKOVA, A. P.

ANGULAR [illegible] OF PARTICLES IN HIGH-ENERGY EXPLOSIVE [illegible]

A. P. Mishakova, [illegible] A. [illegible]olskiy, V. [illegible] Fedorov

The paper covers a study of 39 burst showers generated by high-energy cosmic particles ($>10^{10}$ ev) in nuclear emulsion. The main part of the explosive showers had already been investigated by the authors in an earlier work.

The aim of this paper is to consider all errors (fluctuational and caused by measurements) that influenced the angular distribution of shower particles. It was necessary to verify the earlier conclusion that the angular distribution of shower particles in the centre-of-inertia system is asymmetric backwards (in the direction of angles 150-180°). This conclusion did not agree with the predictions of various theories of shower production. The main effort in this study was to determine the errors that are possible in determining the true direction of the shower axis. The direction of the primary particle may be taken as the direction of the shower axis; if this is impossible, then the direction of "the centre of gravity" of the shower is considered to be the direction of the shower axis.

A study has been made (experimentally and by the Monte Carlo method) of the deviation of the direction of the "centre of gravity" of the shower from that of the primary particle. It has been found that the amount of fluctuation in determining shower axis is 0.17 γ (γ [illegible]), which corresponds to an error of 20' in determining the direction of the shower axis in the center-of-inertia system. An evaluation of widening

due to this effect shows that the number of particles in the interval 0 - 30° in the center-of-inertia system will diminish by ~ 22 %. The total systematic error in the experimentally observed number of shower particles in the interval 0 - 30° in the centre-of-inertial system amounts to ~ 25%.

The angular distributions of shower particles in the centre-of-inertia system have been obtained for 39 showers from 0° to 180°. The distributions indicate an essential anisotropy of shower particles moving rather uniformly forwards and backwards with respect to the direction of motion of the primary particle.

Thus, account of this error leads to a symmetrization of angular distribution in the centre-of-inertia system relative to the angle $\theta = \pi/2$. This conclusion is in agreement with the data of all other laboratories that were analysed in the paper.

Report presented at the International Cosmic Ray Conference, Moscow, 7-11 July 1959.

MISHAKOVA, A.P.

"DIRECT PRODUCTION OF ELECTRON-POSITRON PAIRS BY HIGH ENERGY ELECTRONS"
A.P. Mishakova, A.S. Romantseva, G.S. Stolyarova, V.A. Tumanyan, S.A. Chuyeva, A.A. Varfolomeyev, R.I. Gerasimova, L.A. Makaryina.

The cross-section of direct production of electron-positron pairs by high energy electrons was measured experimentally. For this purpose, a study was made of isolated electron-photon cascades and the photon componant of high energy nuclear interactions in emulsion stacks exposed to radiation in the stratosphere. In order to exclude spurious cases of direct pair production, which constitute the main difficulty in experimental measurement of the cross-section of such pairs, the calculation was carried out by the Monte Carlo method.

The calculation was made for three values of primary electron energy: 10; 100 and 1,000 Bev, taking into consideration two possible variants of the Bremsstrahlung spectrum: Bethe-Heitler and Migdal variants (Landau-Pomeranchuk and Ter-Mikaelyan effects). A method for determining the energy of ultra-relativistic electrons from the lateral distribution of the apexes of electron-positron pairs is suggested.

During the experimental measurement of very high electron energies, certain possible sources of underestimation were eliminated.

The cross-section of direct pair production by high energy electrons was foundto be in agreement with Bhabha's calculation within the limits of experimental error.

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

MISHAKOVA, A. P.

"A study of Explosion Showers Caused by High-Energy Cosmic Ray Particles," by V. V. Alpers, I. I. Gurevich, V. M. Kutukova, A. P. Mishakova, B. A. Nikol'skiy, and ... ... Surkova, Doklady Akademii Nauk SSSR, Vol 112, No 1, Jun 57, pp 33-3

Results are given of a study of explosion showers caused by high-energy cosmic ray particles. An emulsion chamber, containing "NIKFI Type P" emulsion, was exposed for 7 hours in May 1955 at an altitude of [illegible] kilometers.

The 29 explosion showers observed were analyzed. The primary particle causing each shower, the number of relativistic particles per shower, and the angular distribution of shower particles relative to the shower axis are determined. (U)

SUM. 1360

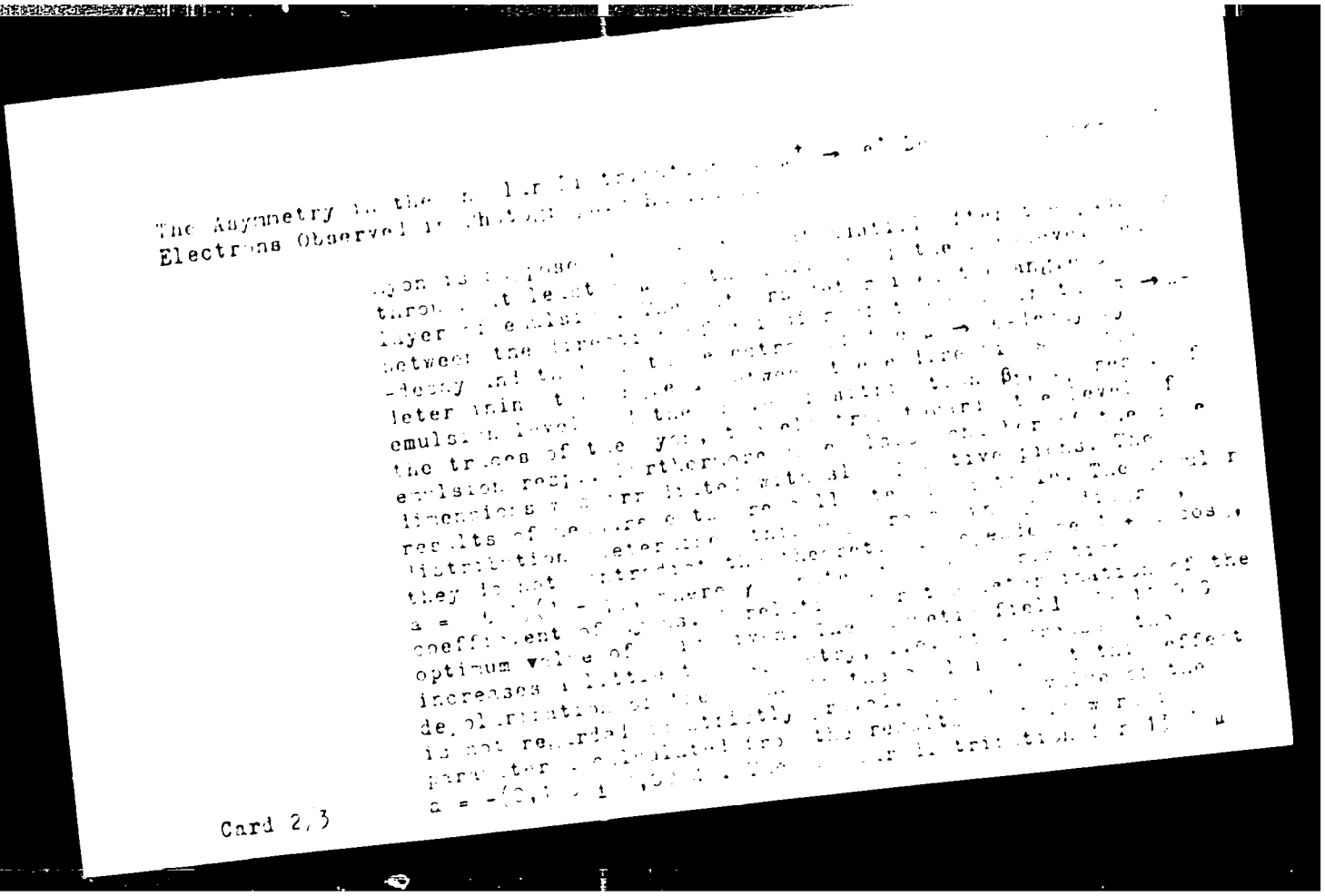
AUTHORS: Zurakich, I. I., [illegible], V. [illegible], Nikol'skiy, A. V., Nikol'skiy, I. V., Sorokova, L. [illegible] 56-2-2 51

TITLE: The Asymmetry in the [illegible] Distribution of $\mu^+ \rightarrow e^+$ Decay Electrons Observed in Photographic Emulsions (Asimmetriya uglovogo raspredeleniya elektronov $\mu^+ \rightarrow e^+$ -raspada pozitivnykh myuonov v fotoemul'sii)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1956, Vol 34, Nr 2, pp [illegible] (USSR)

ABSTRACT: An emulsion chamber of [illegible] x 4 x 1 [illegible] consisting of 23 layers of an NIKFI photographic emulsion of the P type was irradiated with slow positive pions of the [illegible] (Ob"yedinennyy institut yaderrykh issledovaniy - United Institute for Nuclear Research) synchrocyclotron. The chamber was mounted in a double magnetic screen in order to make sure that the scattered magnetic field of the synchrotron did not lead to a precession of the spin of the [illegible]. In looking through the emulsions after development these cases were selected where the whole myon track of the $\pi \rightarrow \mu$-decay is situated in a single layer of the emulsion. In this

Card 1/3



The Asymmetry in the [illegible]
Electrons Observed in [illegible]

upon is [illegible]
through at least [illegible]
layer of emulsion [illegible]
between the direct [illegible]
decay and the [illegible]
leter in the [illegible]
emulsion layer [illegible]
the traces of the [illegible]
emulsion resistance [illegible]
dimensions [illegible]
results of the [illegible]
distribution [illegible]
they do not [illegible]
a = [illegible]
coefficient [illegible]
optimum value of [illegible]
increases [illegible]
depolarization [illegible]
is not reliable [illegible]
parameter [illegible]
a = -(0.[illegible]

Card 2/3

The Asymmetry in the Angular Distribution of $\mu^+ \rightarrow e^+$ Dec... Electrons Observed in Photographic Emulsions

→ decay processes proceeding fr... the results of various previous works and from those of the present investigation is also shown in a diagram. Within the error limits the angular distribution of the electrons of the relation 1 + a cos ϑ is sufficient, where a = -(0,1... ± ..., 1...). There are 2 figures, 2 tables, and 13 references, 1... which is Slavic.

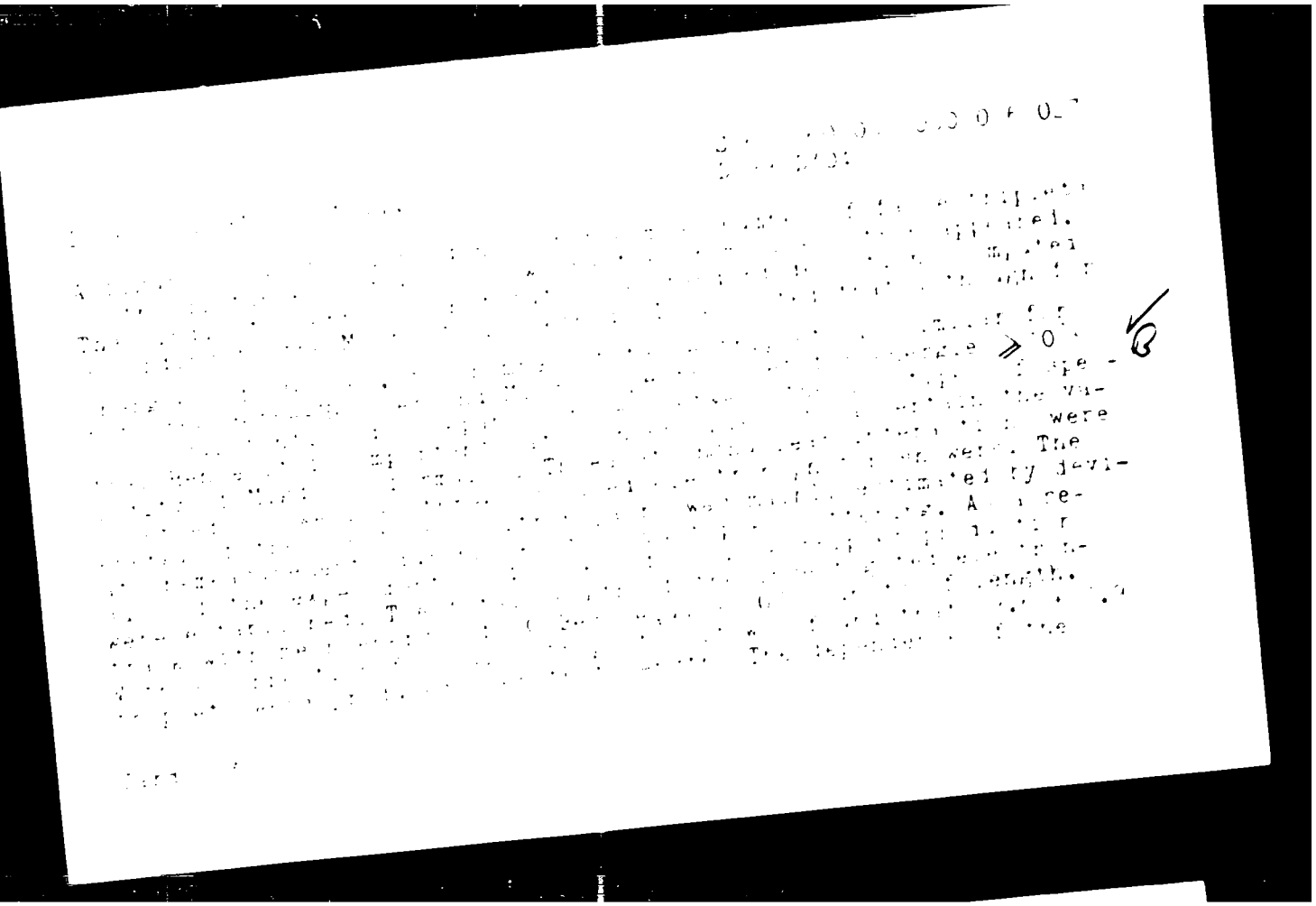
ASSOCIATION: AS USSR (Akademiya nauk SSSR)

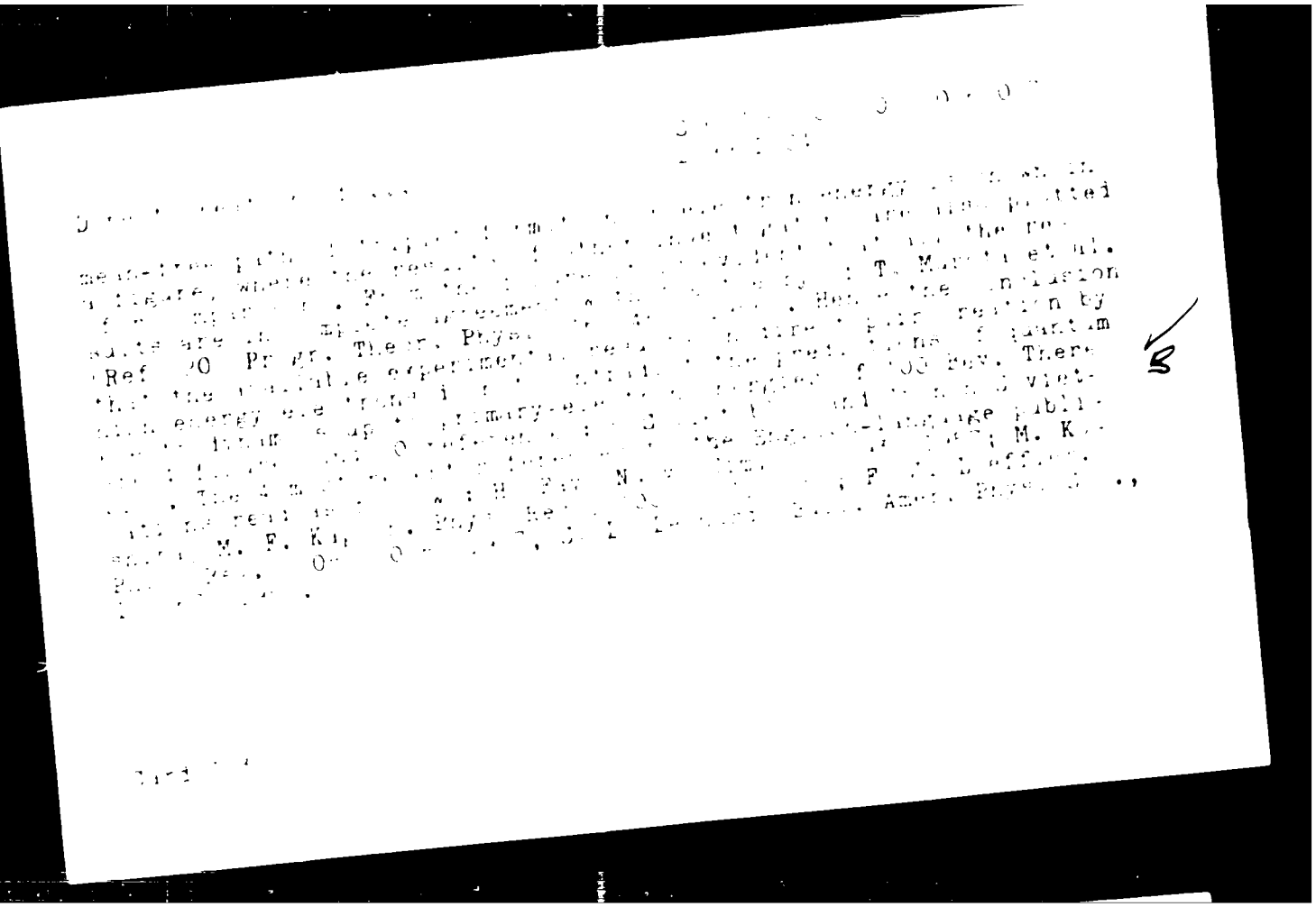
SUBMITTED: August 14, 1957

AVAILABLE: Library of Congress

1. Photographic emulsions-Irradiation 2. Electrons-Distribution

Card 3/3





SOV/56-37-2-

21(7)
AUTHORS: Tumanyan, V. A., Stolyarova, G. S., [illegible]

TITLE: On the Problem of the Direct Electron-Positron [illegible] Electrons of High Energy

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, [illegible] Vol 37, Nr 2(8), pp 355-365 (USSR)

ABSTRACT: The direct pair formation cross section for electron [illegible] 0.5 - 100 Bev has already been investigated several times (Refs 1-13); the results differ considerably. The main experimental difficulty is the necessary elimination of "false triplets" (pair formation caused by the conversion of a γ-quantum of the bremsstrahlung of an electron immediately after its production). Methods of evaluating that fraction are discussed; the most favorable theoretical treatment of this problem is that by the Monte Carlo method. Also in the present paper this problem is investigated by means of an improved variant of the Monte Carlo method. The fundamentals of the calculation of the absolute number of false triplets for the primary electron energies 10^{10}, 10^{11} and 10^{12} ev are given; the experimental data

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On the Problem of the Direct Electron-positron Pair Formation by Electrons of High Energy

(bremsstrahlung cross section and all cross sections of elementary processes) entering into these calculations were obtained from the nuclear emulsions NIKFI-R and Ilford G-5. Determination of the distance at which the bremsstrahlung quantum transforms into a pair from the primary electron ρ differs. $\rho = \sqrt{\Delta y^2 + \Delta z^2}$ is between 0.2 and 0.44 μ (Refs 1,4,5). This criterium is to be unified: $\Delta y \leq 0.2\mu$; $\Delta z \leq 0.44\mu$, but also for 0.3 and 0.66 μ results are given. The diagram (Fig 2) shows the dependence of the average number of false triplets $\bar{n}$ on the distance to the primary electron; the values are compared with the curves obtained by Weil as well as with those obtained according to the spectra of Bethe-Heitler and Migdal (Ref 17). Figure 2 shows the dependence of $\bar{n}$ on electron energy (again compared with Bethe-Heitler and Migdal). Agreement is satisfactory. Further, the differential transversal distribution of pairs, the integral energy spectrum of the primary electrons (after passage of a unit of length - figure 5), the differential energy spectrum of the electron-positron pairs (comparison with

SOV/56-37-2-5/56

On the Problem of the Direct Electron-positron Pair Formation by Electrons of High Energy

Bethe-Heitler and Migdal - figure 6; figure 7 shows the dependence of the average distance of the pairs on the axis and on the electron energy. The results obtained are discussed in detail. The type of bremsstrahlung spectrum described by the Migdal formulas also takes the Landau-Pomeranchuk and the Ter-Mikayelyan-effect into account. The possibility is shown of measuring the energy of the fast electrons by determining the energy dependence of the mean transverse distance between the vertices of the electron-positron pairs produced by bremsstrahlung γ-quanta. In the last part of this paper experimental results are finally discussed, and it is shown that the [illegible] tion of direct pair production calculated by [illegible] with experimental results. The authors finally thank Prof. I. I. Gurevich for his interest and discussion, as well as Professors A. I. Alikhanyan, K. A. Ter-Martirosyan and M. L. Ter-Mikayelyan, and A. A. Tarfolomeyev and B. A. Nikol'skiy for their advice, and V. A. Zharkov for his assistance. There are 7 figures and 22 references, 8 of which are Soviet.

SUBMITTED: February 21, 1959
Card 3/3

24.6220, 24.6300,
24.6600, 24.6510,
16.8160

AUTHORS: Mishakova, A. P., Nikol'skiy, B. A.

TITLE: Angular Distribution of Shower Particles in Explosive Showers Produced by High-Energy Cosmic Ray Particles

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 6, pp 1594-1[illegible] (USSR)

ABSTRACT: An investigation was made of the angular distribution of cosmic particles in showers with an energy of 10^{10} - 10^{13} ev in the center mass system. The data were obtained on the basis of an analysis of 39 cosmic showers recorded in 1956-1957 at the height of 23-27 km. The method of the analysis was described in the first part of this study (cf. I. I. Gurevich, A. P. Mishakova, B. A. Nikol'skiy, L. V. Kurkova, Zhur. eksp. i teoret. fiz., 34, 765, 1958). The main features of the radiation are summarized in Table 1.

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Angular Distribution of Shower Particles in Explosive Showers Produced by High-Energy Cosmic Ray Particles

76-74
SOV/56-3?-6-18/??

Table 1

No. Shower	Initial Particle	$n_h + n_g$ *	n_s	$\theta_{1/2}$ (rad?)	[illegible]	[illegible]	[illegible]	[illegible]
1	n	[illegible] + 8	[illegible]	[illegible]	[illegible]	[illegible]	19.8	[illegible].16 [illegible]
2	p	[illegible]	[illegible]	[illegible]8	[illegible]	[illegible]	28.8	1.6 [illegible]
3	α	1 + [illegible]	15	10[illegible]	[illegible]	[illegible]	[illegible]	[illegible].0 [illegible]
4	n	5 + 2	[illegible]	[illegible]	17.7	13.6	15.15	5.7 [illegible]
5	p	[illegible] + 10	10	1.[illegible]	[illegible]	48.3	51.9	5.[illegible] [illegible]
6	[illegible]	1 + 1	[illegible]	8.[illegible]	6.97	7.4	7.18	[illegible] [illegible]
7	p	[illegible]	[illegible]	[illegible]8	17.9	14.1	16.0	[illegible].1 [illegible]
8	n	[illegible]	1[illegible]	[illegible]	11.1	10.23	10.66	2.[illegible] [illegible]
9	n	[illegible] + 2	17	5.[illegible]	9.68	11.95	11.81	2.78 [illegible]
10	p	[illegible] + 3	15	[illegible].63	5.9	6.06	5.98	7.12 [illegible]
11	p	12 + 7	[illegible]	8.26	6.97	6.41	6.89	8.93 [illegible]
12	p	[illegible] + 1	[illegible]	[illegible]	18.0	74.0	86.0	1.47 [illegible]
13	p	[illegible] + 3	[illegible]7	2.47	23.0	16.6	20.3	8.2 [illegible]
14	p	9 + 7	1[illegible]	4.4	11.0	10.89	11.94	2.82 [illegible]
15	α	12 + 3	42	8.95	6.35	6.41	6.38	8.1 [illegible]
16	p	11 + 10	19	4.[illegible]	15.2	13.7	13.95	3.88 [illegible]
17	p	1 + 2	[illegible]9	7.45	7.67	6.19	6.93	9.6 [illegible]
18	p	1 + 1	1[illegible]	9.82	5.82	5.85	5.83	6.77 [illegible]
19	n	2 + 2	27	1.42	40.5	41.6	41.05	3.44 [illegible]
20	p	10 + 6	35	6.07	9.53	9.45	9.49	1.8 [illegible]

* n_h, n_g - number black and grey tracks in shower

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Angular Distribution of Shower Particles in Explosive Showers Produced by High-Energy Cosmic Ray Particles

Table 1 (cont'd)

Nr Showers	Initial Particle	$n_h + n_g$*	n_s	[illegible]	[illegible]	[illegible]	γ_c	[illegible]
21	π	[illegible]	[illegible]	[illegible]	[illegible]	20,9	22,45	1,0 10^{11}
22	π	[illegible]	12	[illegible]	9,60	9,05	9,32	1,74 10^{11}
23	p	1 1	20	[illegible]	28,2	20,4	24,1	1,18 10^{11}
[illegible]	[illegible]	[illegible]	9	[illegible]	180	109,8	141,8	4,18 10^{12}
[illegible]	[illegible]	6 4	20	1,9[illegible]	30,0	17,8	21,8	1,11 10^{11}
[illegible]	[illegible]	[illegible]	10	2,82	[illegible]	13,5	16,9	[illegible] 7 10^{11}
[illegible]	[illegible]	[illegible]	19	[illegible] 43	[illegible]	8,27	9,68	1,9 10^{11}
[illegible]	[illegible]	8 + 26	87	[illegible]	[illegible]	3,94	4,27	[illegible] 64 10^{12}
[illegible]	[illegible]	15 6	[illegible]	21	[illegible] 9	4,77	4,83	4,65 10^{10}
[illegible]	[illegible]	10 1	29	[illegible]	9,7	10,05	9,87	1,94 10^{11}
31	p	1 + 2	43	1 [illegible]	42,0	38,4	40,2	3,22 10^{11}
32	π	[illegible]	53	[illegible] 96	19,4	15,85	17,62	6,2 10^{11}
[illegible]	p	7 + 1	37	13,0	4,37	6,25	5,31	5,6 10^{10}
34	p	17 + 7	74	6,93	8,24	7,75	8,0	1,27 10^{11}
[illegible]	p	13 + 6	29	4,68	12,2	9,15	10,62	2,[illegible] 10^{11}
36	p	6 + 1	17	2,04	28,4	28,2	28,3	1,6 10^{11}
37	π	6 + 8	31	[illegible] 78	12,0	10,1	11,05	2,44 10^{11}
38	π	21 + [illegible]	40	8,[illegible]	6,85	5,56	11,2	[illegible]
39	π	1 + 2	70	[illegible]	[illegible]	10,24	10,27	[illegible]

* $n_h + n_g$ – number black and grey tracks in shower

Card 3/5

Angular Distribution of Shower Particles
in Explosive Showers Produced by Ultra-Energetic
Cosmic Ray Particles

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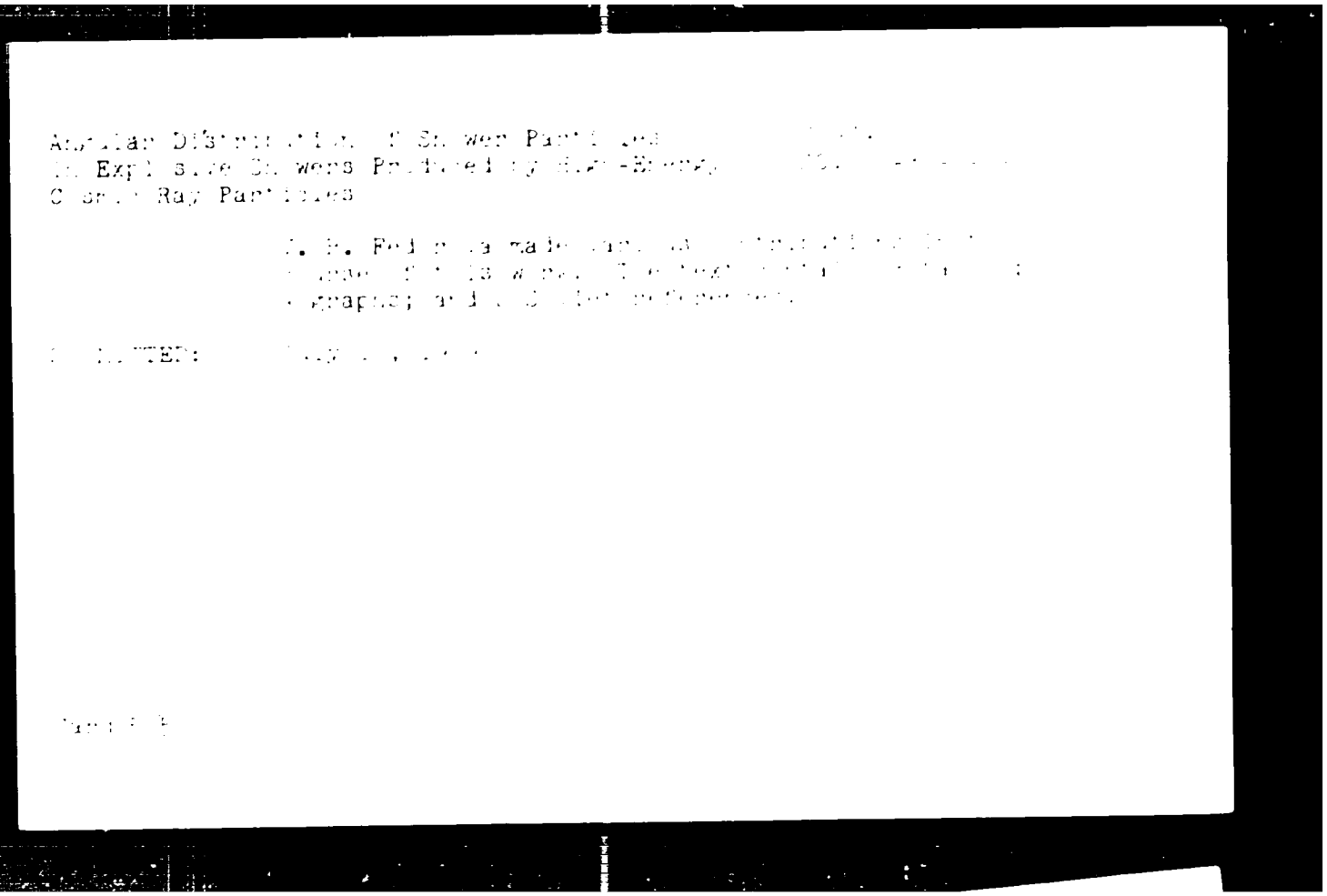

S/056/60/038/005/031/[illegible]
B006/B070

24.6900
AUTHORS: Nikol'skiy, B. A., Mishakova, A. P.

TITLE: Fluctuations in the Angular Distribution of Secondary Particles of Explosive Showers

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, [illegible]
Vol. 38, No. 5, pp. 1507-1511

X

TEXT: Assuming the "two-center" model of the production of shower particles in high-energy explosive showers, the authors have calculated the fluctuations of the angular distribution of shower particles by the Monte-Carlo method. In the present work, the authors only give the results of these calculations and a comparison of the theoretical results with the abundant experimental material. Fig. 1 shows characteristic examples of "two-center" angular distributions of cosmic shower particles observed in the laboratories of Chicago, Bristol, and Yerevan. Fig. [illegible] shows the angular distribution of two particles each of these showers, which correspond partly to narrow and partly to wide cones in the laboratory system. The distributions are given by the functions $\log F/(1-F)$ [illegible]

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Fluctuations in the Angular Distribution of Secondary Particles of Explosive Showers

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B006/B070

= $f(\lambda)$, where $\lambda = \log \tan \vartheta$, ϑ is the angle of emission of the shower particle in the laboratory system, $F(\vartheta)$ - the fraction of shower particles with an angle smaller than the given one. The angular distribution which is isotropic in the center-of-mass system is given in this coordinate system by a straight line forming an angle $\alpha = 63^\circ$ with the abscissa Fig. 4 shows the results of angular distributions in the same coordinate system, calculated by the Monte-Carlo method. Fig. 5 shows the pertinent distributions of "narrow" and "wide" particles. A comparison of the experimental and theoretical distribution curves (Figs 1 and 4) shows that the majority of the experimental distributions can be explained by natural statistical fluctuations in the angular distribution The authors thank I. I. Gurevich for his interest, N. A. Lobacheva for her help in the calculations, and G. Cocconi and M Miesowicz for making available preprints before their publication There are 5 figures and 8 references: 2 Soviet, 1 US, 1 CERN, and 4 Italian

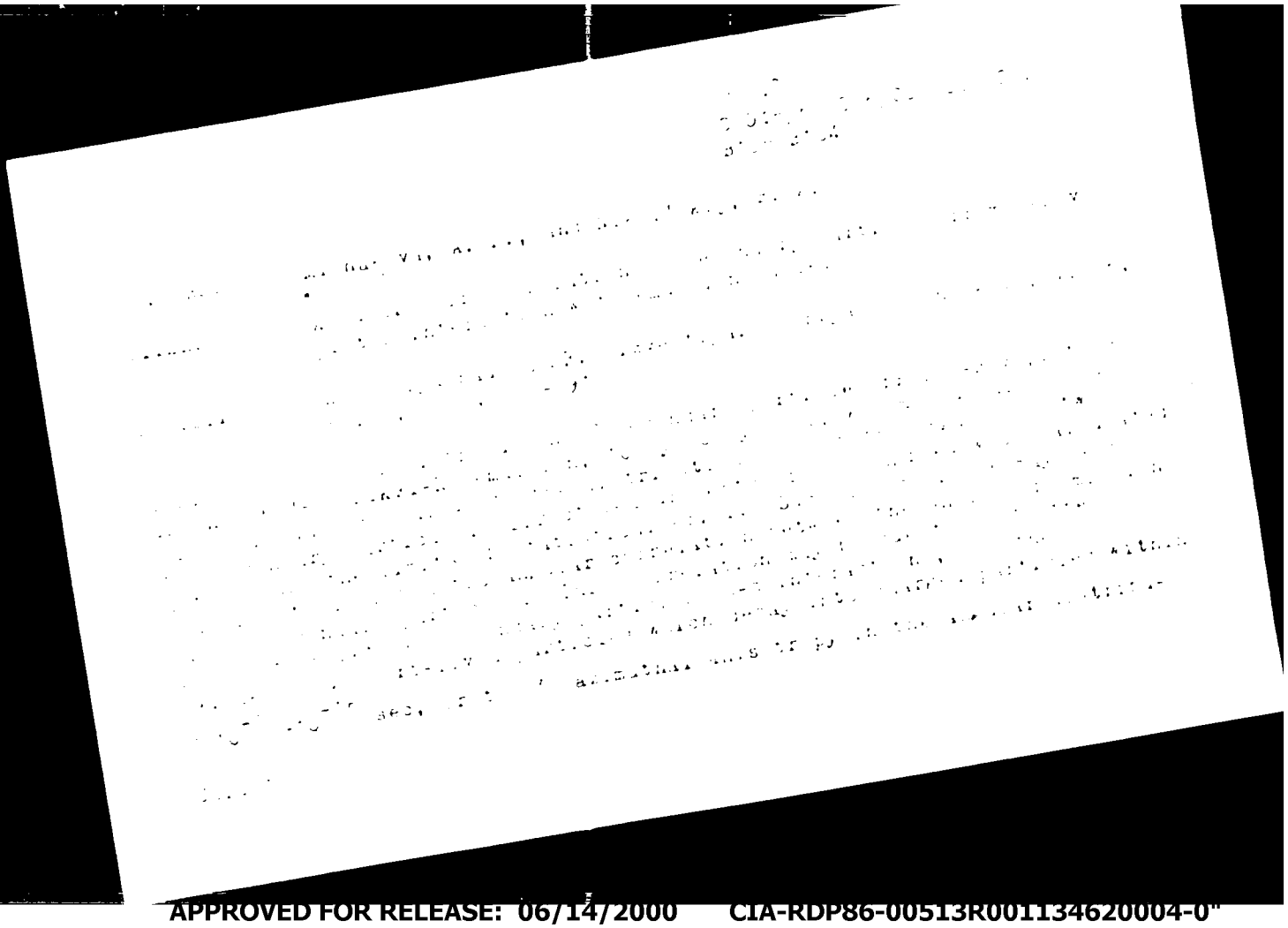
SUBMITTED: November 6, 1959

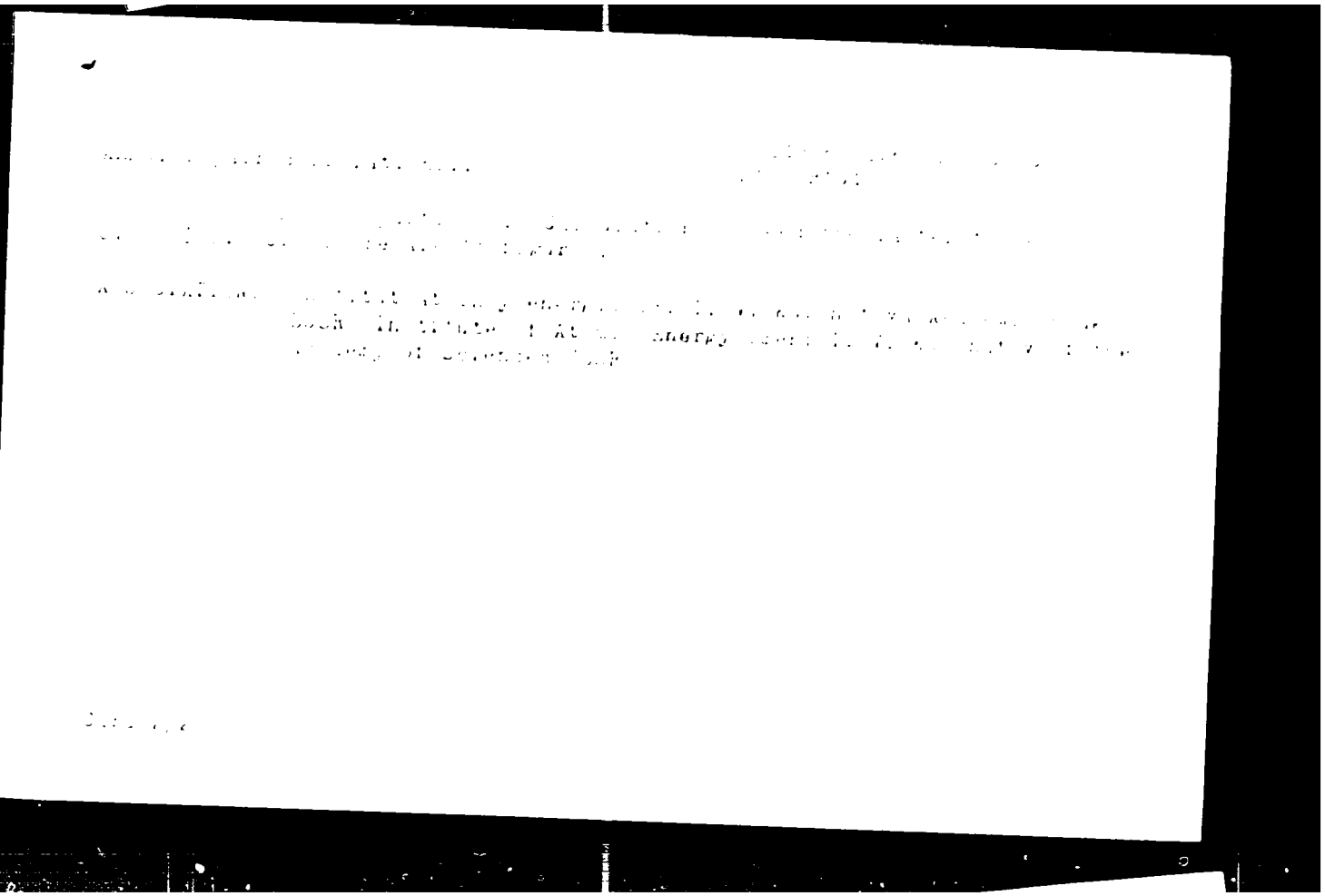
Card 2/2

MISHAKOVA, A. P., and NIKOLSKIY, B. A.

"Asimuthal angular distributions of secondary particles created on high energy collisions"

report presented at the Intl. Conference on High Energy Physics, Geneva, 4-11 July 1962





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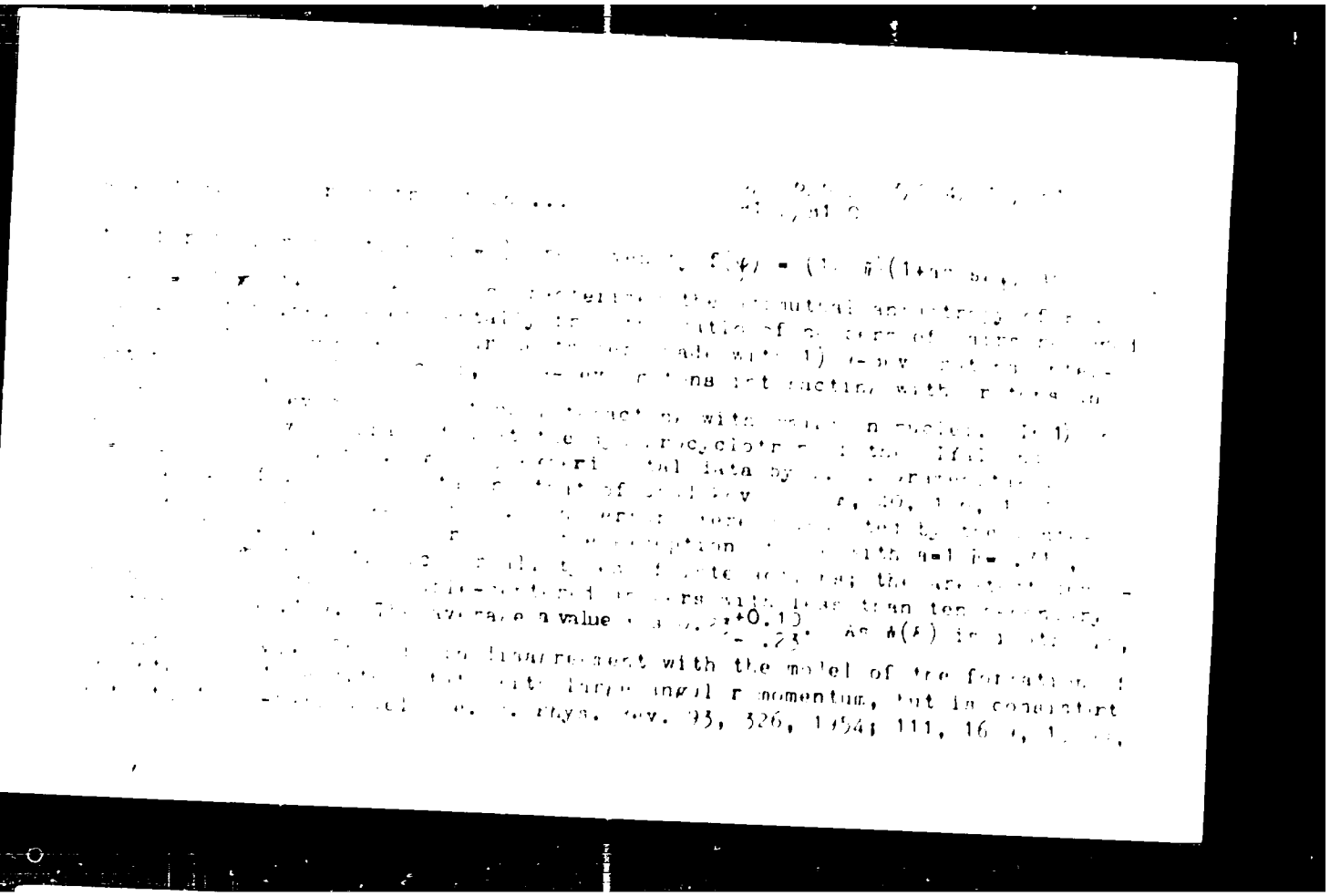
B102/B180

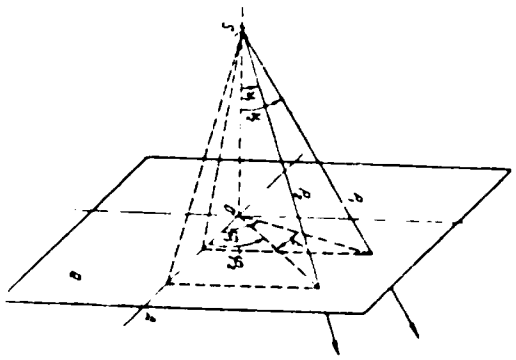
[illegible], B. A.

[illegible] tribution of secondary particles pro-
[illegible] interactions

[illegible] teoreticheskoy fiziki, v. 43,
[illegible], 1962, 114 - 1[illegible]

[illegible] of $r(\varphi)$ the azimuthal angular distribution of secondary
[illegible] determined directly, the authors used angular pair
[illegible] from $w(\xi)$ the distribution of ξ the azimuthal
[illegible] particle pairs in a geometry shown in Fig. 1. The
[illegible] so that $\xi_{ik} = \varphi_i - \varphi_k$ and $w(\xi)$
[illegible] the series representations $r(\varphi$
[illegible] $w(\xi) = (1/\pi)(1+\sum_{k=1}^{\infty} a_k \cos k\xi)$ with $r(\varphi \pm \pi) = r(\varphi$





L 41870-65 EWT(m)/T/EWA(m)-2
ACCESSION NR AM5007585

12
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BOOK EXPLOITATION

Mishakova, A. P.

Angular distributions of secondary particles in high energy nuclear interactions (Uglovyye raspredeleniya vtorichnykh chastits v yadernykh vzaimodeystviyakh vysokoy energii). Moscow, 1964, 164 p. illus., biblio. 100 copies printed. Dissertation submitted for the degree of candidate of physical and mathematical sciences. Series note: Moscow. Institut atomnoy energii. [Doklady]

TOPIC TAGS: angular distribution, secondary particle, nuclear physics, cosmic ray shower

TABLE OF CONTENTS [abridged]:

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Ch. II. Fluctuation of angular distribution of secondary particles in explosion showers -- 42
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high-energy interactions -- 54
Ch. IV. Paired angular correlation of secondary particles in high-energy nuclear interactions -- 97
Ch. V. Conclusion -- 145
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SUBMITTED: 0000064 SUB CODE: NP

NR REF SOV: 020 OTHER: 032

Card 2/2

L 13947-65 EWT(1)/EWT(m)/FCC/T IJP(c)/AFETR/ESD(t)
ACCESSION NR: AP4047886 S/0056/64/047/004/1214/1220

AUTHORS: Mishakova, A. P.; Nikol'skiy, B. A. 8

TITLE: Pair correlation of the angles of secondary particles in cosmic ray showers with energy larger than 10^{11} eV 14

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 4, 1964, 1214-1220

TOPIC TAGS: cosmic ray shower, secondary particle angle, pair correlation, angular correlation

ABSTRACT: This is a continuation of earlier work by the authors (ZhETF v. 43, 1213, 1962; Izv. AN SSSR seriya fiz. v. 26, 585, 1962). Unlike in the earlier papers, the authors discuss the pair correlation of the secondary-particle polar angles instead of the azimuthal angles, and compare the result with the theoretical deductions obtained under the assumption that there is no systematic angular

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ACCESSION NR: AP4047886

correlation of the shower particles. The agreement between the calculation and the experimental data is satisfactory. The results are analyzed from the point of view of existence of unstable particles in the showers, which decay into charged particles with a low lifetime. This agreement establishes that within the experimental errors there is no specific angular correlation between the shower particles. "The authors are grateful to Professor I. I. Gurevich for helpful discussions of the results." Orig. art. has: 6 figures and 9 formulas.

ASSOCIATION: None

SUBMITTED: 20Apr64 ENCL: 00

SUB CODE: NP, AA NR REF SOV: 002 OTHER: 003

Card 2/2

L 1846-66 EWT(m)/FCC/T IJP(c)

ACCESSION NR: AT5022288 UR/3136/64/000/618/0001/0016

AUTHOR: Mishakova, A. P.; Nikol'skiy, B. A.

TITLE: Paired angular correlation of secondary particles in cosmic showers with energy E sub O greater than 10 super 11 ev

SOURCE: Moscow. Institut atomnoy energii. Doklady, IAE-618, 1964. Parnaya uglovaya korrelyatsiya vtorichnykh chastits v kosmicheskikh livnaykh s energiyey $E_o > 10^{11}$ ev, 1-16

TOPIC TAGS: cosmic ray shower, secondary cosmic ray, cosmic ray particle

ABSTRACT: Experimental distributions of paired angles between secondary cosmic ray particles with energy $E_o > 10^{11}$ ev are compared with calculated distributions obtained by assuming the absence of a systematic angular correlation of shower particles. A good agreement between the calculated and experimental distributions is observed. The results obtained are analyzed from the standpoint of the existence of unstable shower particles which decay into particles of short lifetime. "In conclusion, the authors express their appreciation to Prof. I. I. Gurevich for numerous discussions and for reviewing the results." Orig. art. has: 7 figures and 9 formulas.

Card 1/2

L 1846-66
ACCESSION NR: AT5022288

ASSOCIATION: none

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

NO REF SOV: 002 OTHER: 003

Card 2/2

L 5087-66 EWT(m)/FCC/T IJP(c)

ACCESSION NR: AT5024116 UR/3136/65/000/876/0001/0020

AUTHOR: Mishakova, A. P.; Nikol'skiy, B. A.

TITLE: Azimuthal angular distributions of secondary particles in cosmic showers

SOURCE: Moscow. Institut atomnoy energii. Doklady, IAE-876, 1965. Azimutal'nyye uglovyye raspredeleniya vtorichnykh chastits v kosmicheskikh livnyakh, 1-20

TOPIC TAGS: secondary cosmic ray, cosmic ray particle, cosmic ray shower, cosmic radiation composition, angular distribution

ABSTRACT: The method of pair angular correlations was employed to study the azimuthal angular distributions of secondary particles in 169 cosmic showers with energies of 10^{13} to 10^{14} ev. An isotropic azimuthal angular distribution was observed for primary showers due to pi-mesons. These data indicate a difference in the secondary showers of the n-n and pi-n interactions. The data on the angular correlation of chanisms of the secondary shower particles are discussed from the viewpoint of the fireball model. It is noted in conclusion that despite the relatively large number of showers investigated, the question of the nature of the azimuthal distribution of secondary particles is still unclear. Further accumulation of experimental data is deemed necessary, particularly on the interactions due to the secondary shower

Card 1/2

33
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B+1

L 5087-66
ACCESSION NR: AT5024116

7

particle. "The authors express their gratitude to I. I. Gurevich for a discussion of the results and constant interest in the work, K. Niu for graciously presenting the IEFC data on the angular distribution of shower particles, and A. Bazhanov, L. A. Chernyshov, and L. A. Makar'in for assistance in the work." Orig. art. has: 6 figures, 8 formulas, and 8 tables.

ASSOCIATION: Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii SSSR (State Committee for Utilization of Atomic Energy, SSSR); Institut atomnoy energii im. I. V. Kurchatova (Institute of Atomic Energy)

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

NO REF SOV: 004 OTHER: 003

Card 2/2 pad

L [illegible] EWT(m)/T LUP(c)
ACC NR: AP6023084 (A,N) SOURCE CODE: UR/0367/66/003/004/0703/0710

AUTHOR: Mishakova, A. P.; Ni ol'skiy, B. A. 41

ORG: none

TITLE: Azimuthal angular distributions of secondary particles in cosmic-ray showers /1

SOURCE: Yadernaya fizika, v. 3, no. 4, 1966, 703-710

TOPIC TAGS: particle distribution, cosmic ray shower, nuclear energy, nucleon interaction, FIREBALL MODEL, ANGULAR DISTRIBUTION

ABSTRACT: The azimuthal angular distributions of secondary particles in 169 showers with energies of 10^{10}--10^{14} ev have been investigated by the method of pair angular correlation. An isotropical azimuthal angular distribution was observed for primary showers due to nucleons and an anisotropical one for secondary showers due to π-mesons. This indicates the different nature of NN-interaction and πN-interaction at very high energies. The data on the angular correlations of

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ACC NR: AP6023084

secondary shower particles have been discussed from the point of view of the fireball model. The authors' thank I. I. Gurevich for discussing the results and for constant interest in this study, and A. Bazhanov, L. A. Chernishov, and L. A. Makar'in for assistance. Orig. art. has: 4 figures, 8 formulas, and 5 tables. [Based on authors' abstract] [NT]

SUB CODE: 04,20/ SUBM DATE: 19May65/ ORIG REF: 003/ OTH REF: 007/

Card 2/2

ACC NR: AP7012414 SOURCE CODE: UR/0367/67/005/001 0150 0152

AUTHOR: Mishakova, A. P. Nikol'skiy, B. A. -- Nikolsky, B. A.

ORG: none

TITLE: Azmuthal angular distributions of secondary particles in cosmic showers

SOURCE: Yadernaya fizika, v. 5, no. 1, 1967, 150-152

TOPIC TAGS: angular distribution, cosmic ray shower

SUB CODE: 20

ABSTRACT: It is shown that the azimuthal angular distribution of particles in secondary jets produced by neutral shower particles is anisotropical.
The authors thank I. I. Gurevich for discussion of the results, Yu. A. Smorodin for making available information from JCEF, L. A. Makar'in and L. A. Chernyshov for help in the work, and G. B. Zhdanov for valuable advice.
Orig. art. has: 2 figures, 2 formulas and 3 tables. [Based on authors' Eng. Abst.] [JPRS: 40,393]

Card 1/1

MISHAKOVA, M.V.

Method for preparing anti-P sera. Report no.1. Sud.-med.ekspert. 3 no.1:32-37 Ja-Mr '60. (MIRA 13:5)

1. Nauchno-issledovatel'skiy institut sudebnoy meditsiny (dir. - prof. V.I. Prozorovskiy) Ministerstva zdravookhraneniya SSSR.
(AGGLUTININS)

MISHAKOVA, M.V.

Capacity of anti-P heteroimmune sera to detect agglutinogen P in preserved and nonpreserved blood kept in a liquid state at various temperatures. Sud.-med.ekspert. 5 no.4:33-37 O-D '62. (MIRA 15:11)

1. Nauchno-issledovatel'skiy institut sudebnoy meditsiny (dir. - V.I.Prozorovskiy) Ministerstva zdravookhraneniya SSSR.
(SERUM) (AGGLUTINOGENS) (FORENSIC HEMATOLOGY)

MISHAKOVA, M.V.

Obtaining anti P serums by immunizing animals with echinococcal allergen. Sud-med. ekspert. 6 no.4:[illegible] (MIRA 16:12)
O-D'63

1. Nauchno-issledovatel'skiy [illegible]
(dir.-prof. V.I.Pr[illegible]) [illegible]
SSSR.

BORIN, A.V.; LOGAK, P.I.; TELYAKOVA, V.Sh.; MISHAKOVA, M.V.

Investigating the factors influencing the concentration effect in optical sensitization. Zhur.nauch.i prikl.fot.i kin. 7 no.4:245-251 Jl-Ag '62. (MIRA 15:8)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo kinofotoinstituta, Kazan'.
(Photographic emulsions)

BORIN, A.V.; MOSHKINA, T.M.; MISHAKOVA, M.V.; SHAYMARDANOVA, L.R.

Sensitizing effect of some polyethylene glycols. Zhur. nauch. i prikl. fot. i kin. 8 no.3:211-212 My-Je '63. (MIRA 16:6)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo kinofoto-instituta, Kazan'.
(Glycols) (Photographic emulsions)

MISHALOV, Yuriy Ivanovich

N/5
831.5
.M6

MICHOLOV, Yuriy Ivanovich

O podgotovke i usloviyakh raboty prepodavateley sovetskoy shkoly (iz nablyudeniy pedagoga) (training and working conditions of Soviet school teachers) Myunkhen, 1955.

190 p. (Issledovaniya i materialy. Seriya 2 (rotatornyye izd.) nr. 33)

At head of title: Institut po Izucheniyu Istorii i Kul'tury SSSR.

Summaries in German, French and English

Bibliographical footnotes.

ZALICHONOK, Nikolay Anisimovich[Zalichonak, M.A.], ekskavatorshchik; VISHNEVA, Ye.A., red.; UCHUKHLEBAU, A.A., tekhn. red.

[Full load for excavators] Ekskavatarar - poumuiu nahruzku. Minsk, Dziarzh. vyd-va sel'skahaspadarchai lit-ry BSSR, 1962. 29 p. (MIRA 14:11)

1. Udakovskoye vodnoye meliratsionnoye upravleniye, Gomel'skoy oblasti (for Zalichonok).
(White Russia—Drainage)

MISHANAVA, Ye.A., red.

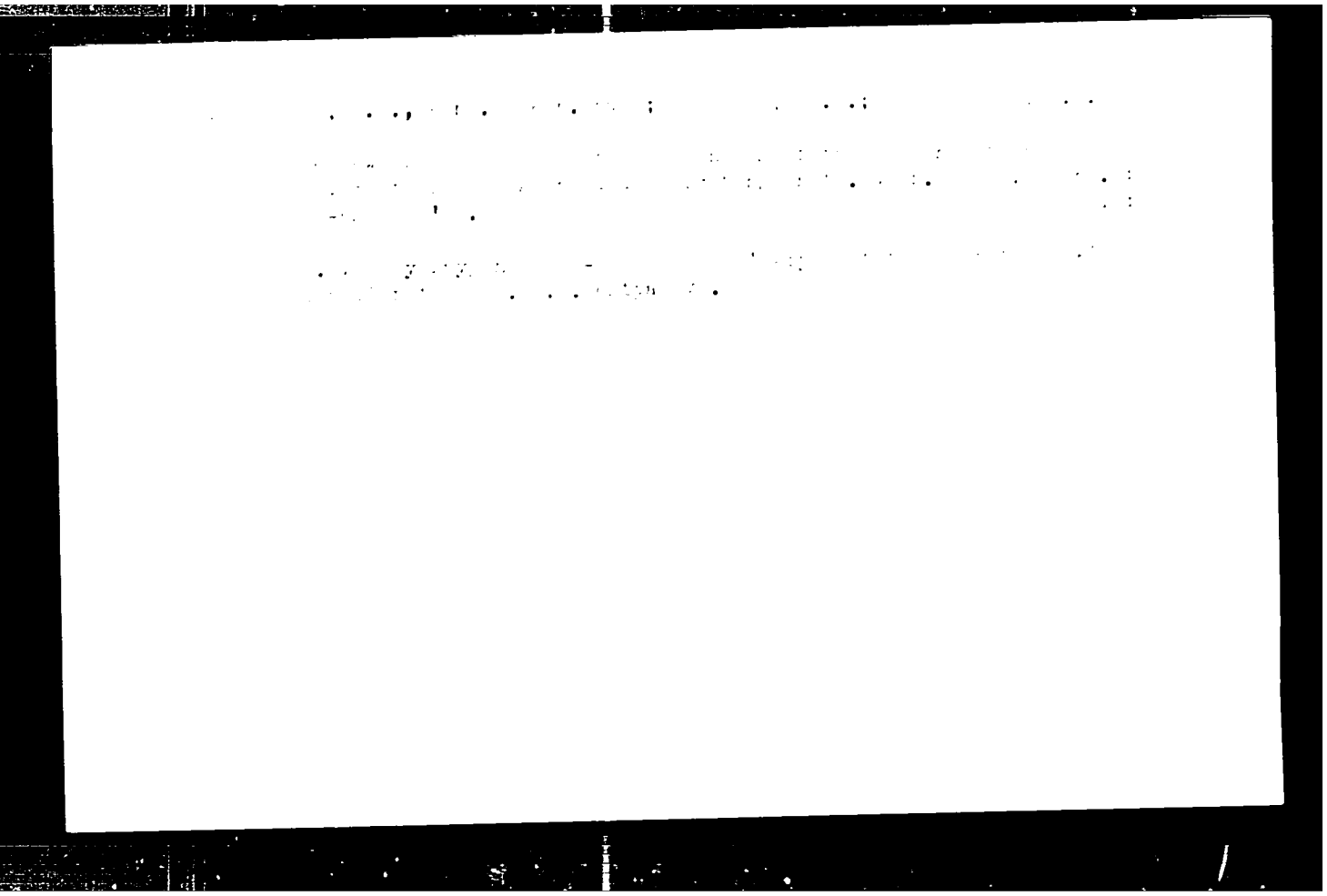
[Put chemistry in the service of farmers! A collection of materials from a radio conference. Khimiiu - na sluzhbu khlebabarobu! Zbornik materyialau radyekanferentsyi. Minsk, Vyd-va "Uradzhai," 1964. 104 p. (MIRA ..

BARAZ, V.I., inzh.; MISHANIN, B.S., inzh.

Raise the standard of work at petroleum and gas industry enterprises. Bezop. truda v prom. 8 no.11:19-22 N '64. (MIRA 18:2)

MISHANIN, P.F., inzh.

Centrifugal [illegible]-shaped paint atomizers. Izobr.i rats. no.7:34-
Jl '58. (MIRA 11:9)
(Spray painting)



USSR / Forestry. Forest Crops. -5

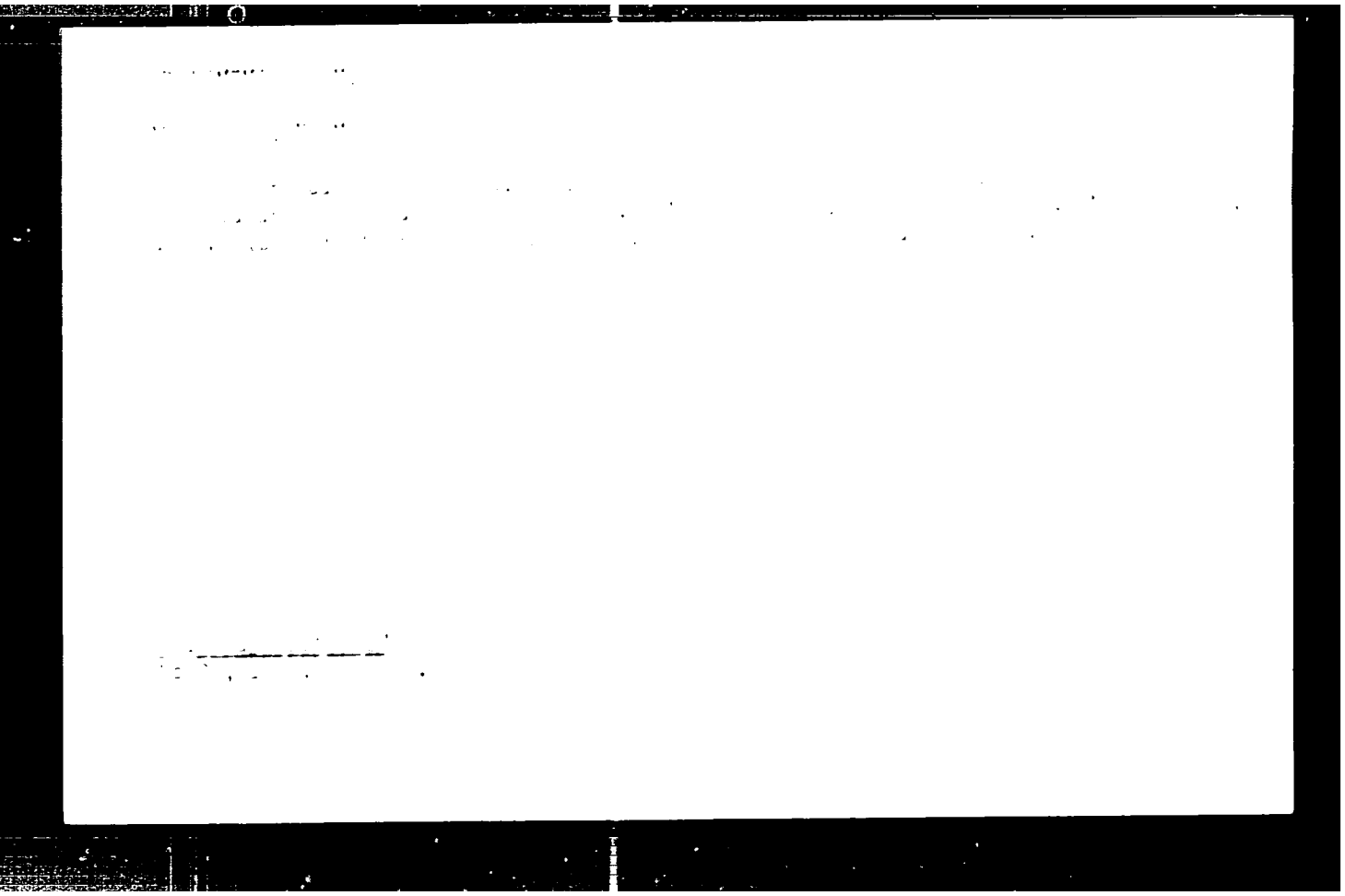
Abs Jour: Ref Zhur-Biol., No 16, 1958, 72825.

Author : Mishanina, A. T.
Inst : Not given.
Title : Seedling Growth of Tree-Shrub Species Depending on Methods of Seeding.

Orig Pub: S. kh. Povolzh'ya, 1957, No 8, 54-55.

Abstract: The influence of seeding methods of tree-shrub species was studied in experiments (1955) at the Koshkin Nursery in Kuybyshevskaya Oblast (forest-steppe zone). Green ash, Tatar and Norway Maple, small-leaved and common elm, Tatar honeysuckle and red-berried elder were used. Wide-furrowed plantings with irrigation and sealing-in seeds with humus provided a large yield of seedlings from a unit of area; only the seedlings of elm and elder

Card 1/2



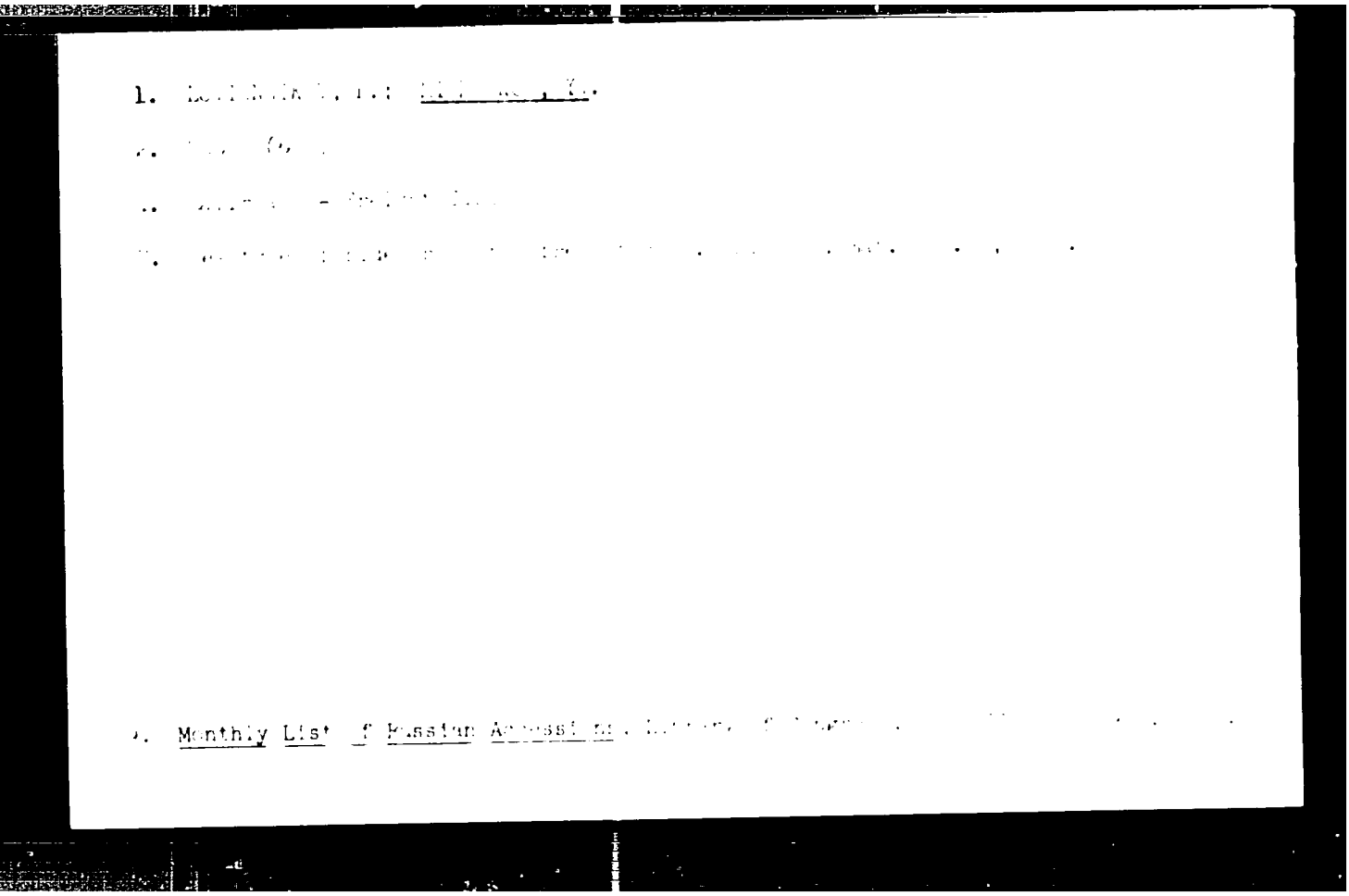
APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001134620004-0"

MISHANINA, K.V.

Late results from alimentary-toxic aleukia [illegible] 29 no.4 78-82 Je '57. (MLRA 10:10)

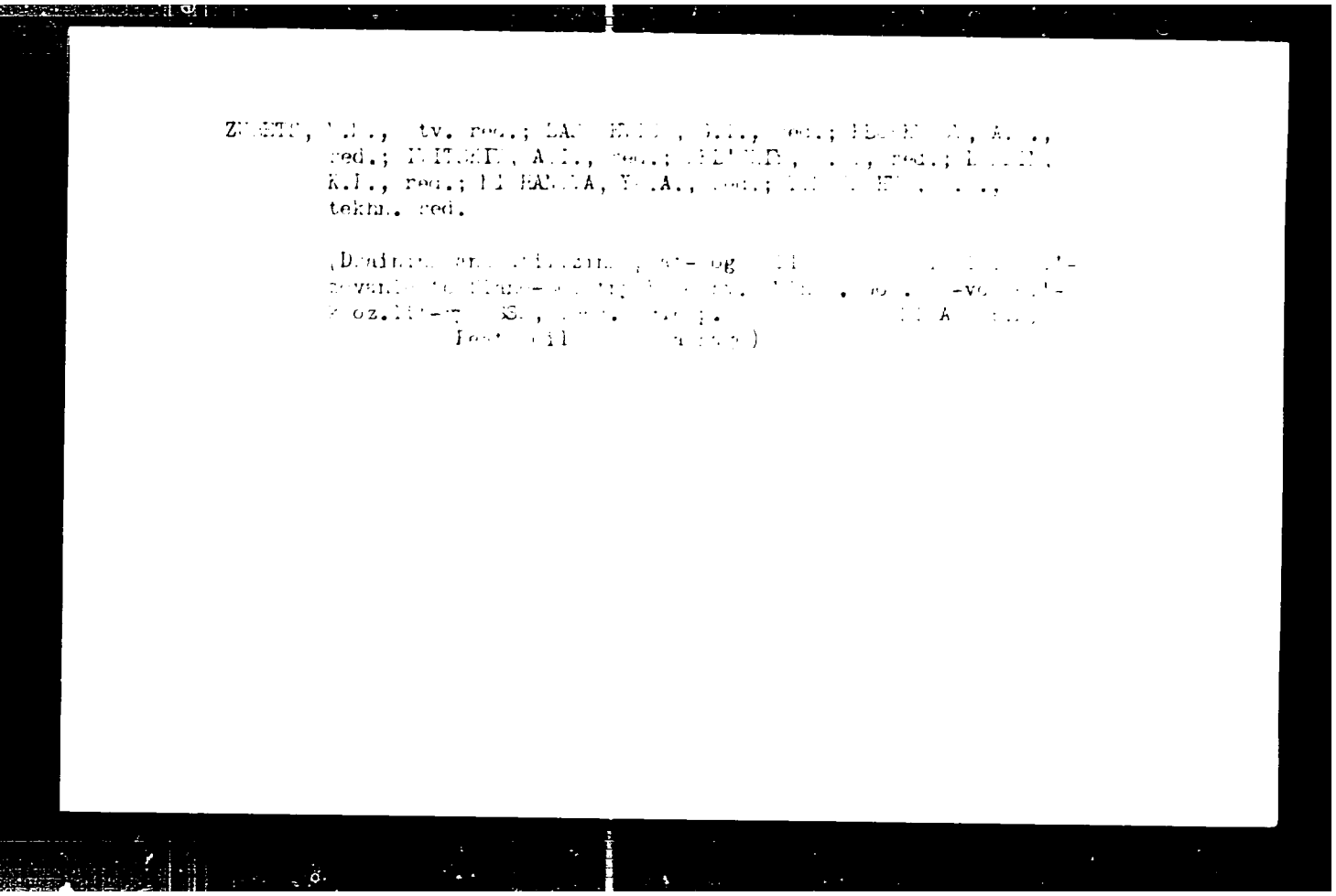
1. Iz Kliniki gospital'noy terapii (dir. - prof. A.A.Denin) Novosibirskogo meditsinskogo instituta.

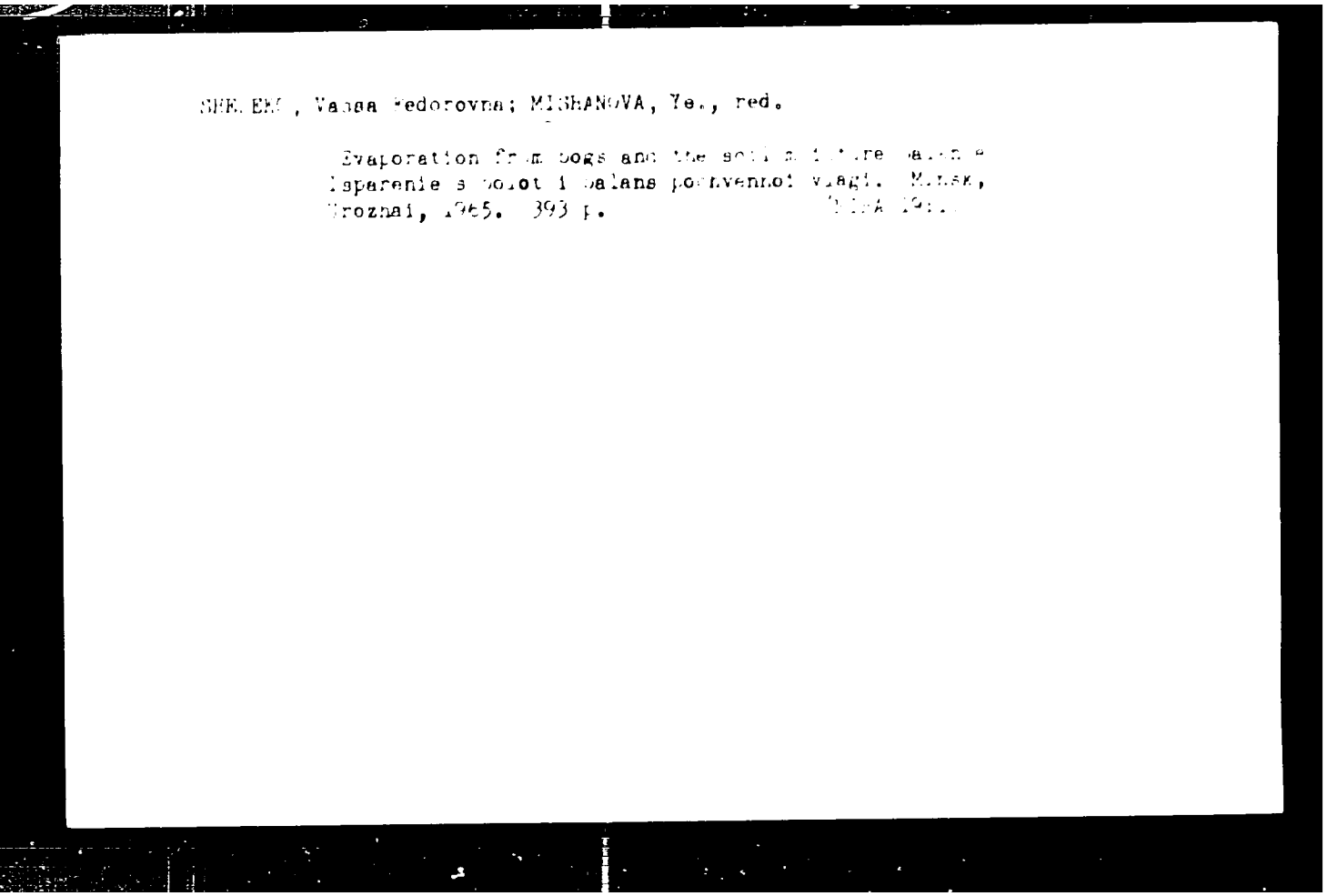
(CEREALS,
alimentary toxic aleukia caused by poor. with wintered-over cereals (Rus))
(ANEMIA APLASTIC,
same)



PETROVA, Larisa (d.Sokolok, Leningradskaya oblast'); MIRSANOV, V. (Kalinin.); MISHIN, Vladimir; MISHANOVA, Tamar (s.Zachepilovka, Khar'kovskaya oblast'); YERMAZOVA, Natasha (s.Tanayka, Tatarskaya ASSR.); PETROVA, Vera; KURNEVICH, Olya (Moskva)

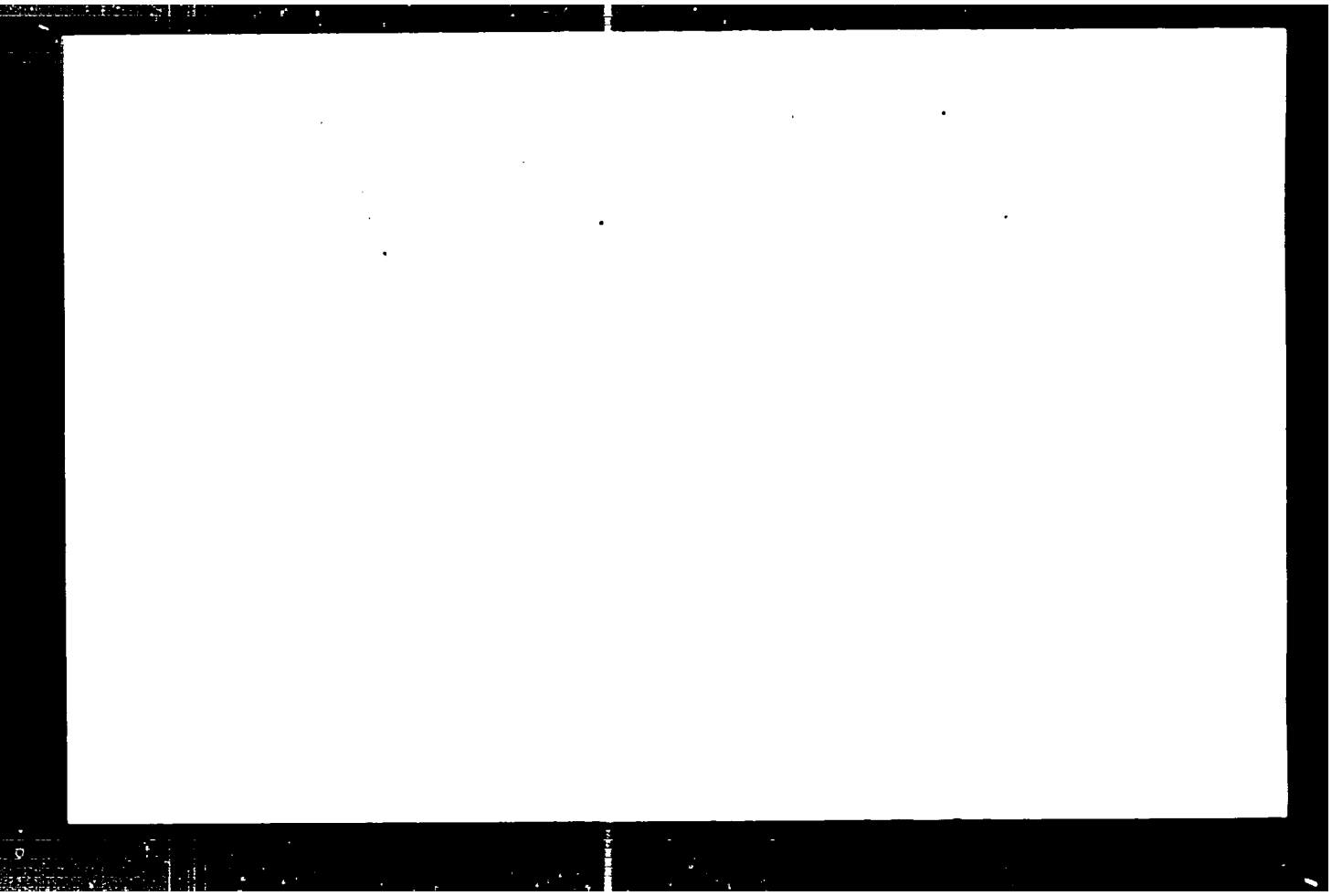
Editor's mail. IUn.nat. no.7:36-37 Jl '62. (MIRA 15:8)
(Nature study)





SHEK.EM , Vanda Fedorovna; MISHANOVA, Ye., red.

Evaporation from bogs and the soil moisture balance
Isparenie s bolot i balans pochvennoi vlagi. Minsk,
Urozhai, 1965. 393 p. [illegible]



APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001134620004-0"

DVININ, G.M.; MISHANSKIY, I.M.; DUBKOV, A.A.; MALAKHOVSKIY, G.F.; DRYAGIN, P.A.; BUCHEL'NIKOV, D.V.

Working placer layers in a transverse ravine with the aid of explosives. Prom.energ. 15 no.2:20 F '60. (MIRA 13:5)

(Mining engineering)

MISHAREV, A. V.

Horse Breeding

Conference of horsebreeders, Konevod., No. 1, 1952

Monthly List of Russian Accessions, Library of Congress, March 1952. UNCLASSIFIED.

VOZNESENSKIY, D.V.; AMELANDOV, A.S.; GEYSLER, A.N.; GOLUBYATNIKOV, V.D.; [deceased]; DOMAREV, V.S.; DOMINIKOVSKIY, V.N.; DOVZHIKOV, A.Ye.; ZAYTSEV, I.K.; IVANOV, A.A ; ITSIKSON, M.I.; IZOKH, E.P., KNYAZEV, I.I.; KORZHENEVSKAYA, A.S.; MISHAREV, D.T.; SEMENOV, A.I.; MOROZENKO, N.K.; NEFEDOV, Ye.I.; RADCHENKO, G.P.; SERGIYEVSKIY, V.M.; SOLOV'YEV, A.T.; TALDYKIN, S.I.; UNKSOV, V.A.; KHABAKOV, A.V.; TSEKHOMSKIY, A.M.; CHUPILIN, I.I.; SHATALOV, Ye.T., glavnyy redaktor; KRASNIKOV, V.I., redaktor; MIRLIN, G.A., redaktor; RUSANOV, B.S, redaktor; POTAPOV, V.S., redaktor izdatel'stva; GUROVA, O.A., tekhnicheskiy redaktor.

[Instructions for organization and execution of geological surveys in scales of 1:50,000 and 1:25,000] Instruktsiia po organizatsii i proizvodstvu geologo-s"emochnykh rabot masshtabov 1:50,000 i 1:25,000. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr. 1956. 373 p. (MLRA 10:6)

1. Russia (1923- U.S.S.R.) Ministerstvo geologii i okhrany nedr. (Geological surveys)

MESHARIN, Daniil Timofeyevich; AMELANDOV, N.V. [deceased]; ZAKHARCHENKO, A.I.; SMIRNOVA, V.S.; MUKHOV, L.F., nauchnyy red.; KUZNETSOV, L.A., vedushchiy red.; TEKHN.red.

[Stratigraphy, tectonics, and pegmatite potential of the northwestern White Sea region] Stratigrafiia, tektonika i pegmatitonosnost' Severo-Zapadnogo Belomor'ia. Leningrad, 1960. 110 p. (Leningrad. Vsesoiuznyi geologicheskii institut. Trudy, vol.31) (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut (for Amelandov, Zakharchenko, Smirnova).
(White Sea region—Geology) (Pegmatites)

AUTHOR: Visharev, I.V.

TITLE: To Know the Book and [illegible] Work with It [illegible]

PERIODICAL: Vestnik vysshey shkoly, 1960, Nr 7, pp 74-76 (USSR)

ABSTRACT: The organization of bibliographic information in the Leningrad Polytechnical Institute, Leningrad Electrotechnical Institute and Leningrad Institute of Building Engineering is described in this article. All these institutes publish special information bulletins containing abstracts of articles in Soviet and foreign publications and periodicals of special interest to students. The author recommends the publication of special periodical bulletins on literature in specialized narrow branches of science for students and teachers.

Card 1/1

MISHAREV, Oleg Sever'yanovich

Surgical Anatomy of the Solar Plexus

Dissertation for candidate of a Medical Science degree, Chair of Topographical Anatomy (head, prof. S. M. Arkhangel'skiy), Saratov Medical Institute, 1952

2371. SOME PROBLEMS OF LOCAL ANAESTHESIA FOR OPERATIONS IN THE ABDOMINAL CAVITY (Russian text) - Misharev O S - ZDRAVOOKHR BELOR. 1957, 4 (40-42)

For anaesthetic purposes infiltration along the major arteries as near as possible to their origin is advised. For example, for anaesthesia of the lesser curve of the stomach novocaine should be injected from the right side along the hepatic and right gastric arteries and from the left side along the left gastric artery. The author advises that all manipulations in the region of the left gastric artery should be performed only after injection of novocaine solution into the gastric plexus. (S)

MISHAREV, O.S.

Flash burns; survey of literature from abroad. Khirurgiia 34 no.5 140-144 My '58 (MIRA 11:7)

1. Iz kafedry khirurgii (zav. - prof. A.M. Boldin) Belorusskogo instituta usovershenstvovaniya vrachey.
(BURNS, therapy
review (Rus))

MISHARIN, O.S.

Two cases of unusual perforation of jejunal ulcer. Khirurgiia, Moskva 34 no.11:105-106 N '58. (MIRA 12:1)

1. Iz khirurgicheskoy kliniki (zav. - prof. A.M. [illegible]) Belorusskogo gosudarstvennogo instituta usovershenstvovaniya vrachey (dir. - prof. M. N. Zhukova)

(PEPTIC ULCER, perf.
jejunal (Rus))

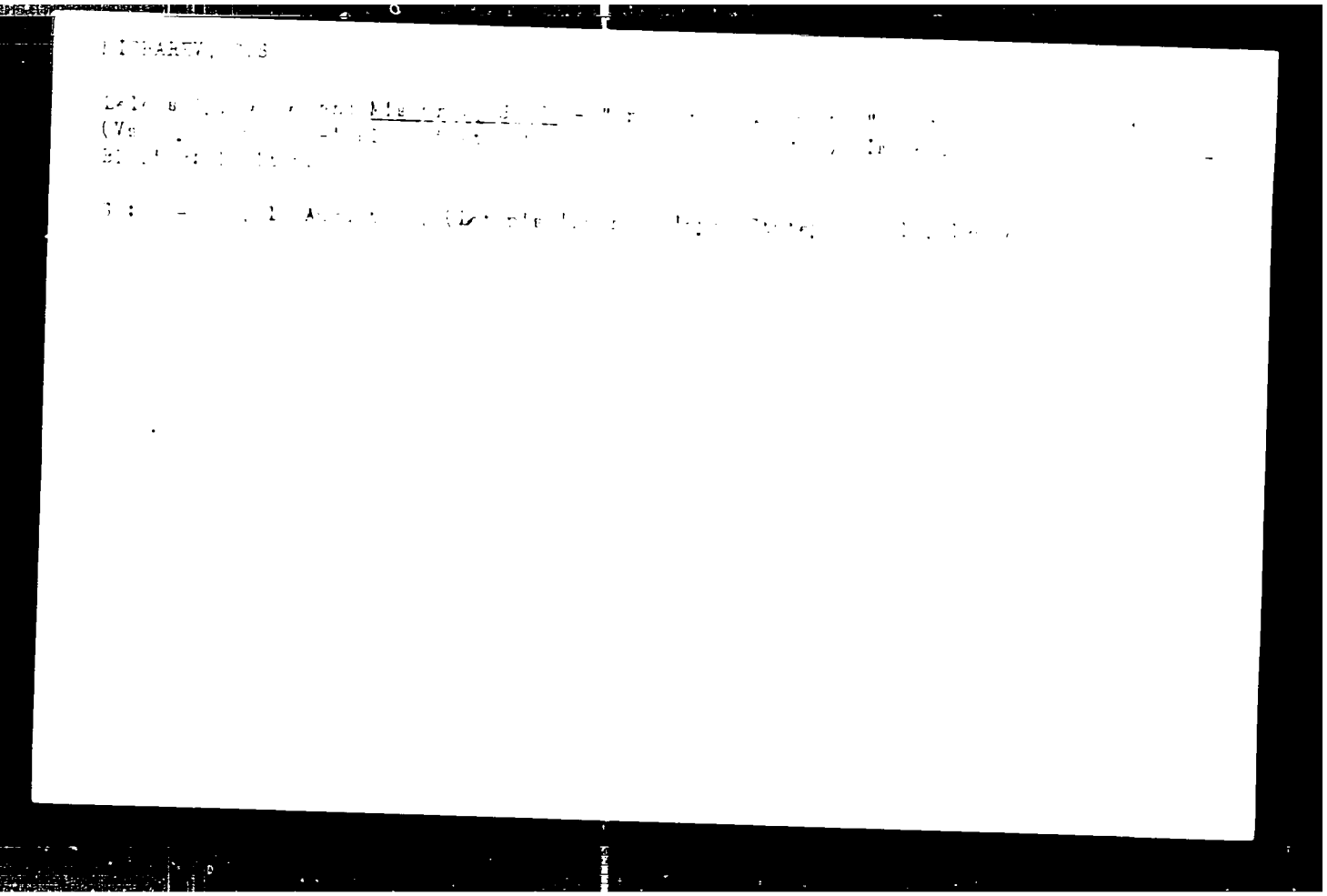
MISHAREV, O.

At the meeting of the Surgical Society of the White Russian S.S.R. Zdrav. Bel. no.3:74-75 '62. (MIRA [illegible])
(WHITE RUSSIA--SURGERY--CASES, CLINICAL REPORTS, STATISTICS)

MISHAREV', O.S. (Minsk, ul.Krasnoarmeyskaya,d.8,kv.36)

Characteristics of a momentary burn; experimental study. Klin. khir. no.5:11-16 My '62. (MIRA 16:4)

1. Kafedra khirurgii (zav. - prof. A.M.Boldin) Belorusskogo instituta usovershenstvovaniya vrachey.
(BURNS AND SCALDS)



MIShAREV. S. S.

23498. PLEMENNAYa RABOTA S ORENBURGSKIMI PUKhOVYMI KOZAMI I IKh POMESYaMI. SOV ZOOTEKhNIYa, 1949, NO 2, c. 45-47

SO: LETOPIS' NO. 31, 1949

1. MICHAREV, S.S.

. USSR (600)

4. Goats

7. Breeding work in herds of Orenburg goats. Sov. zoot. kh. 7 No. , 19 .
Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Ovtsevodstava i Kozevodstva

. Monthly List of Russian Accessions, Library of Congress, August, , UNCLASSIFIED.

LEBED', I. D., MISHAREV, S. S.

Goats

Don region goats and their significance in the quality of improving angora goat-breeding. Sots. zhiv. 14, No. 5, 1952.

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

MISHAREV, S. S.

"Orenburg Downy Goats and Breeding Work with Them." Cand Agr Sci, Azerbaydzhan Agricultural Inst, 16 Dec 54. (BM, 7 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

USSR/Far ...imals. Small ... S... .

...b. Jour: Ref Zhur-Bi l. ... 2 ... , ...

...uth...r : Lebel', L...., ... v, ...

... :

... : Goat Hair ... Central ... and Kaz... .

... : ... , 13-16.

... ract: The local ... Central ... and Kaz... (live weight 41-43 ..., ... wool..., yield... of w..., ewe fertility 130-135%) was crossed with the ... and ... second generation hybrids were ... each other. The animals ... were ... local ... strong constitution, white wool, and the ... yielded 1.7 - 2. ... of w... ... 75-... pure fiber

Card : 1/2

MISHAREV, S.S., kand.sel'skokhozyaystvennykh nauk

Results of improving mohair does by breeding with Don bucks. (MIRA 11:11)
Zhivotnovodstvo 20 no.11:55-58 N '58.

1. Vsesoyuznyy institut ovtsevodstva i kozovodstva.
(Coat breeding)