

FROLOV, Ivan Mikhaylovich; MOKSHIN, Stepan Ivanovich; BELYAKOV, V.,
red.; DANILINA, A., tekhn.red.

[Flying among stars] Letiashchie sredi zvezd.... Moskva,
Gospolitizdat, 1963. 47 p.

(MIRA 16:6)

(Bykovskii, Valerii Fedorovich)
(Tereshkova, Valentina Vladimirovna)

BELYAKOV, V., nauchnyy sotrudnik

Nuclear photographic emulsion uncovers the secrets of the microworld.
IUn.tekh. 6 no.9:53-55 S '61. (MIRA 14:10)

1. Ob"yedinennyy institut yadernykh issledovaniya, g. Dubno.
(Photography, Particle track)

LYUBOVTSSEV, Vladimir Il'ich; BELYAKOV, V., red.; MUKHIN, Yu., tekhn.
red.

[Beyond the Khatanga River] Za rekoi Khatangoi. Moskva,
Gospolitizdat, 1962. 108 p. (MIRA 15:10)
(Taymyr Peninsula--Collective farms) (Dolgans)

BELYAKOV, V.

Some problems in intensive servicing of ships in sea ports. Mor. flot
25 no.7:11-12-31 '65. (MIRA 18:7)

1. Starshiy inzh. Gosudarstvennogo proyektno-konstrukorskogo i nauchno-
issledovatel'skogo instituta morskogo transporta Ministerstva morskogo
flota SSSR.

BELYAKOV, V. A.

27968. BELYAKOV, V. A. --Itogi lecheniya invalidov otechestvennoy voyny po materialam instituta ortopedii, travmatologii i protezirovaniya, gospitaly i lechebnykh uchrezhdeniy uzbekskoy SSR. Trudy pervoy Nauch. MezhrEsp. Knof-tsii po lecheniyu invalidov otechestv. voyny v sred. Azii. tashkent, 1949, S. 85-91.

SO: Letopis' Zhurnal'nykh Statey. Vol. 37, 1949.

VOLKOVA, M.A.; BELYAKOV, V.A.; MEDVEDEV, Yu.A.

Distribution of depth doses from the telegamma apparatus with
 Cs^{137} . Med.rad. no.5:82-86 '61. (MIRA 14:11)

1. In Gosudarstvennogo nauchno-issledovatel'skogo onkologicheskogo
instituta imeni P.A. Gertsena. (CESIUM--ISOTOPES) (GAMMA RAYS--THERAPEUTIC USE)

L 10229-66

ACC NR: AP6002410

SOURCE CODE: UR/0105/64/000/010/0087/0087

AUTHOR: Basharin, A. V.; Belyakov, V. A.; Donskoy, A. V.; Neyman, L. P.; Ravdonik, V. S.; Renne, V. T.; Rusin, Ya. L.; Sabinin, Yu. A.; Usov, S. V.

ORG: none

TITLE: Professor V. G. Drannikov (60th birthday and 35th anniversary of his scientific and pedagogical activity)

SOURCE: Elektrichestvo, no. 10, 1964, 87

TOPIC TAGS: electric engineering personnel, electric engineering

ABSTRACT: Vasily Gavrilovich Drannikov was born in Serpukhov on 30 June 1904 to a worker's family. He began as a textile worker at the "Proletariy" factory in 1920, transferring to the Textile Institute in the same year. In 1924 he was enrolled in the college of Electromechanics at the Leningrad Industrial Institute. In 1930 he became a candidate for an advanced degree and began his teaching career at the then newly organized Chair of "Elektroprivod" (Electric power drives). One of his first publications was the laboratory textbook "Opredeleniye poter'v transmissii" (Determination of transmission losses) in 1932. In 1931 he became an assistant and in 1934 a reader (docent) for the chair of "Promy'shlennoye ispol'zovaniye elektricheskoy energii" (Industrial uses of electric power). At that time he

Card 1/2

UDC: 621.3(092)

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L 10229-66

ACC NR: AP6002410

became the first in the USSR to lecture on the "use of ionic-electronic devices in electric power drives." In 1939 Drannikov defended his dissertation "Teoreticheskoye i eksperimental'noye issledovaniye nekotorykh skhem bystrogo vzbuzhdeniya generatora Leonarda" (Theoretical and experimental investigation of certain high-speed excitation circuits for a Leonard generator). During the war Drannikov was Chief Engineer at the Vologodskaya Oblast' Communal Economy Directorate in charge of electric power. Returning to Leningrad in 1944, he took an active part in re-opening the Polytechnical Institute. From 1952 to 1955 he was abroad on teaching assignments. Since 1958 he has been dean of the Chair of "Elektroprivod i avtomatizatsiya promyshlennykh ustanovok" (Electric power drives and automation of industrial equipment). He has written 10 books, 12 texts, and many scientific papers on automation and electric drives. For his scientific and pedagogical activities he holds among other awards the "Znak pocheta" (Badge of Honor). Orig. art. has: 1 figure. [JPRS]

SUB CODE: 09 / SUBM DATE: none /

Card 2/2

BEZLYAKOV, V.A.

BEZLYAKOV, V.A.; IVANOVA, L.N.; KOZLOVA, L.G.; TOLSTOV, K.D.

Experiments with 600 micron layers from the "E" Emulsion of the
Motion Picture and Photography Scientific Research Institute.
Zhur. nauch. i prikl. fot. i kin. 2 no.5:325-329 S-O '57.

(MIRA 10:11)

1. Ob"yedinenny institut yadernykh issledovaniy.
(Photographic emulsions)

BARASHENKOV, V. S., BELYAKOV, V. A., BUBEIEV, E. G., MALISEV, V. M., TOLSTOV, K. D.
TEN GYN, and WANG SHOU FENG,

"Multiple Production of Particles in Collisions between 9 GeV Protons and Nucleons." Nuclear Physics, vol. 9, No. 1, Nov. 1958.

Joint Inst. Nuclear Research, Lab Theoretical Physics and High Energy Lab., Dubna.

Abstract: Some theoretical calculations pertaining to multiple production of particles in nucleon-nucleon collisions at 7-10 GeV were presented in ref. 1. Some preliminary experimental results obtained by irradiating photographic emulsions with proton beam from the synchrocyclotron of the Joint Inst Nuclear Research were given in ref. 2. In the present paper we compare the theoretical results of ref. 1 with the results of some new experiments. 372 stars, of which 50 were classified as proton-nucleon collisions, were recorded in NIKFI-R photographic emulsions along the tracks of 9 GeV protons accelerated in the JINR proton synchrocyclotron. The mean number of charged particles created in these collisions was 3.6 ± 0.5 . The angular distribution of fast charged particles is obtained. As a whole the experimental results agree with the statistical theory of multiple particle production within the limits of the experimental errors. Some discrepancy is evident in the small angle range and may be due to the contribution on non-central impacts and to asymmetry of the angular distribution in the c.m.s.

66838

(23.3000)

SOV/77-4-6-5/16

AUTHOR: Belyakov, V.A., Kozlova, L.G., Sviridov, V.A. Tolstov, K.D.

TITLE: Dependence of the Sensitivity of Nuclear Emulsions on Temperature Within the Range of 2-300° K

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii 1959, Vol 4, Nr 6, pp 427-429 (USSR)

ABSTRACT: The author reports on recent Soviet study of the dependence of the recording properties of various nuclear emulsions on temperature within the range of 2-300° K. The results of the first experiments were published in the paper of N.A. Dolina, V.A. Sviridov, K.D. Tolstov and E.N. Tsyganov [Ref 1]. Subsequently, an attempt was made to improve the recording properties of the emulsion NIKFI R 400μ by a change in the processing conditions. Curve 1 of the graph (taken from the paper of V.A. Belyakov, L.G. Kozlova, V.A. Sviridov, K.D. Tolstov and E.N. Tsyganov [Ref 2]) corresponds to the normal processing conditions of emulsions, which with

Card 1/3

66838

SOV/77-4-6-5/16

Dependence of the Sensitivity of Nuclear Emulsions on Temperature
Within the Range of 2-300° K

regard to the correlation trace density of fog are most suitable for exposure at room temperature. Curve 2 corresponds to intensified development conditions, the fog increasing in this case by 50%. NIKFI low-temperature emulsions without silver iodide gave better results. Under normal processing conditions, the relative sensitivity at 20° K for the best series of emulsions was equal to 45±3%, and the absolute density of the tracks of the relativistic particles amounted to 17 grains for 100 μ . The microphotograph shows the tracks of π -mesons with an energy of 340 Mev and nuclear fission at an exposure of the emulsion at 20° K. Fine-grained emulsions developed by N.A. Perfilov, N.R. Novikova and Ye.T. Prokof'yeva [Ref 3] showed at 75° K a relative sensitivity of 75%. The density of the grains on the tracks of the relativistic particles at 300° K amounted to 46 grains per 100 μ . Experiments with Ilford ("Il'ford") G-5 600 μ layers [Ref 4] were also carried out (see

Card 2/3

66838

SOV/77-4-6-5/16

Dependence of the Sensitivity of Nuclear Emulsions on Temperature
Within the Range of 2-300° K

Table). The grain density at exposure within the range of 2-215° K averages 15-17 grains per 100 μ of particle track. The fog is approximately constant. The layers were processed under conditions recommended by the firm of Ilford. Comparative data on NIKFI and Ilford emulsions are given in the graph. There are 1 graph, 1 microphotograph, 1 table and 4 references, 3 of which are Soviet and 1 English.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: September 23, 1957

Card 3/3

21 (8)

AUTHORS:

Barashenkov, V. S., Belyakov, V. A., SOV/69-7-4-12/28
Van Shu-fen', Glagolev, V. V., DOIKHABHav, N., Kirillova, L. F.,
Lebedev, R. M., Mal'tsev, V. M., Markov, P. K., Tolstov, K. D.,
Tsyganov, E. N., Shafranov, M. G., Yao Ch'ing-hsieh

TITLE:

The Interaction of Fast Nucleons With Nuclei of the Photo-
emulsion NIKFI-R

PERIODICAL:

Atomnaya energiya, 1959, Vol 7, Nr 4, pp 376-377 (USSR)

ABSTRACT:

The present paper deals with the interaction between 9 Bev-
protons, which were accelerated in the beam of the synchro-
phasotron of the Ob'yedinenny institut yadernykh issledovaniy
(Joint Institute of Nuclear Research), and the nuclei of a
photoemulsion of the NIKFI-R type. The results of these
measurements are shown by a table. On the basis of the data
thus found it is possible to draw several conclusions as to
the mechanism of the interaction between a fast proton and a
nucleus. If the primary nucleon-nucleus collision is an
interaction between nucleon and channel, the velocity of the
center of mass in an interaction of silver and bromine with
the channel will be considerably less than in an interaction
with light nuclei. Therefore, also the number of s-particles

Card 1/3

The Interaction of Fast Nucleons With Nuclei of the
Photoemulsion NIKFI-R

SOV/89-7-4-12/28

must be considerably greater. In the experiment, the numbers of s-particles for light and heavy nuclei are, however, nearly the same. This is explainable on the basis of the cascade mechanism of interaction, in which the energy of the s-particles decreases rapidly in cascade collisions. The multiplicity of the particles produced decreases simultaneously. In the case of the greater number of g-particles, nucleons are concerned, which may be explained by the cascade mechanism of nucleon - nucleus interaction. Also the agreement between the transversal momentum $p_{g\perp}$ for g-protons originating from interactions with

light and heavy nuclei points in the direction of the interaction cascade mechanism. Besides, a search was made for strange particles by employing the method of investigating according to areas. The cross section of the production of k^+ -particles with an energy of $E \leq 140$ Mev in a medium-weight nucleus of the photoemulsion amounts to

$(5 \pm 2)10^{-27}$ cm². Besides, the amount of the production cross section, the wide angular distribution of the k-mesons, as well as other facts indicate that a noticeable fraction of

Card 2/3

The Interaction of Fast Nucleons With Nuclei of the
Photoemulsion NIKFI-R

SOV/89-7-4-12/28

slow strange particles is produced in an intranuclear cascade process. Furthermore, the medium-weight energy losses of a fast nucleon are evaluated in the case of a single nucleon-nucleon collision. A 9Bev-proton gives up an average of (5.1 ± 0.8) Bev to a medium-weight nucleus of the photoemulsion, which amounts to (60 ± 10) % of its initial energy. 4.05 Bev are used for the production of pions, and 1.05 Bev are transferred to the nucleons of the nucleus. As a proton in a medium-weight nucleus undergoes approximately 2 collisions, the proton, in one single nucleon-nucleon collision, loses $\Delta E = 35 \pm 10$ % of its initial energy. By means of other measurements of the pion energy spectrum carried out independently of the present paper in a nucleon-nucleus collision $\Delta E = 40 \pm 10$ % is obtained. The statistical theory of multiple production furnishes $\Delta E = (40 - 50)$ %. The authors thank G. Beznogikh, V. Vaksina, Z. Kuznetsova, and N. Metkina for their help in the measurements, and L. Popova for his assistance in analyzing measuring results. There are 1 table and 1 reference.

Card 3/3

04300

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B004/B070

24.6900

AUTHORS:

Belyakov, V. A., Van Shu-fen', Glagolev, V. V., Dalkhazhav,
N., Lebedev, R. M., Mel'nikova, N. N., Nikitin, V. A.,
Petrzhilka, V., Sviridov, V. A., Suk, M., Tolstov, K. D.

TITLE:

Inelastic Interactions of 7 Bev π^- -Mesons and Nucleons

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 39, No. 4(10), pp. 937-947

TEXT: The inelastic interaction of 7-Bev π^- -mesons with nucleons is studied in this paper. The preliminary results were communicated to Kiyevskaya konferentsiya po fiziki vysokikh energiy (Kiyev Conference on the Physics of High Energies). The emulsion chamber consisted of 240 НИКФИ-Р (NIKFI-R) layers with a thickness of 400 μ . 5300 interactions with the nuclei of photoemulsion were observed. Of these, 535 inelastic interactions were analyzed (Table 1). The theoretical distribution of the charged particles was calculated by V. S. Barashenkov. Spurious scattering was eliminated by special measurements (Table 2). 459 pions and 134 protons

Card 1/3

84388

Inelastic Interactions of 7 Bev π^- -Mesons
and NucleonsS/056/60/039/004/006/048
B004/B070

were identified. The angular distribution of pions and the total distribution of all stars (in c.m.s.) are shown in Fig. 1. For smaller number of charged particles, the asymmetry increases strongly. This is principally due to pions with large momenta (Fig. 2). Therefore, the angular distributions are very different for fast and slow pions (Fig. 3): Pions with momenta < 0.5 Bev show an almost isotropic distribution. From the angular and total distributions of protons (Fig. 4) it is seen that the protons conserve their initial direction. From the momentum distributions of pions and nucleons, the authors conclude that the average momentum of the nucleons and of the charged pions does not depend on the increase of the number of charged particles. The same result follows from the data for the average transverse momenta \bar{p}_\perp of protons and pions given in Table 3. Fig. 7 shows the number of neutral mesons as a function of the number of charged particles. The results can be interpreted only partly by the statistical theory. The asymmetry of the angular distribution of the secondary pions can only be explained by a peripheric collision of the pion with a pion of the nucleon shell (Figs. 8 and 9). An estimate of the radius of the nucleon core gave the

Card 2/3

84388

Inelastic Interactions of 7 Bev π^- -Mesons and
Nucleons

S/056/60/039/004/006/048
B004/B070

maximum value of $4 \cdot 10^{-14}$ cm. The authors summarize the results as follows:
Average momentum of protons = (0.89 ± 0.04) Bev/c, average transverse
momentum = (0.37 ± 0.04) Bev/c; asymmetry of angular distributions of all
pions = 1.56 ± 0.10 ; pions with $p \geq 0.5$ Bev/c are emitted in the forward
direction, their average momentum equaling (0.87 ± 0.06) Bev/c and agrees,
therefore, with that of the protons. The authors thank D. I. Blokhintsev
and V. I. Veksler for discussion and advice. There are 9 figures, 3
tables, and 23 references: 9 Soviet, 8 US, 1 British, 1 German, 4
Italian, 1 Japanese, and 1 Polish. X

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research)

SUBMITTED: May 11, 1960

Card 3/3

BELYAKOV, V.A.

Momentum distribution of particles in a rarefied Fermi gas.
Zhur. eksp. i teor. fiz. 40 no.4:1210-1212 Ap '61. (MIRA 14:7)

1. Moskovskiy inzhenerno-fizicheskiy institut.
(Free electron theory of metals)

IVANCHENKO, Pavel Nikolayevich, kand. tekhn. nauk; SAVEL'YEV, Nikolay
Mikhaylovich, inzh.; SHAPIRO, Boris Zakharovich, inzh.; VOVK,
Vasily Grigor'yevich, inzh.; BELYAKOV, V.A., kand. tekhn. nauk,
dots., retsenezent; YURKEVICH, M.P., inzh., red. izd-va;
SHCHETININA, L.V., tekhn. red.

[Electromechanical transmissions; theory and design] Elektro-
mekhanicheskie peredachi; teoriya i raschet. Pod red. P.N.
Ivanchenko, Moskva, Mashgiz, 1962. 431 p. (MIRA 15:6)
(Motor vehicles--Transmission devices)
(Electric driving)

BELYAKOV, V.A., WANG YUNG-CHANG, VEKSLER, V.I., VIRYASOV, N.M., DU IUAN-TSAI,
KIM HI IN, KLADNITSKAYA, Ye. N., KUZNETSOV, A.A., MIHUL, A., NGUEN, DIN TI, PENEV, V.N.,
SOKOLOVA, Ye. S., SOLOVYEV, M. I.

"Study of ΛK and $K_1^0 K_1^0$ Pair Production in $\pi^- p$ and $\pi^+ e$ Interactions at the
7-8 GeV/c Momentum of \bar{K} Mesons"

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

Joint Institute for Nuclear Research
Laboratory of High Energy Physics

BELYAKOV, V.A., WANG YUNG-CHANG, VEKSLER, V.I., VIRYASOV, N.M., VRANA, I.,
DU TRAN-TSAT, KIM HI IN, KLADNITSKAYA, Ye. N., KUZNETSOV, A.A., MIHUL, A.
NGUYEN DING TI, I. PATERA, V. PENEV, SOKOLOVA, Ye. S., SOLOVYEV, M.I.,
HOFFMOKL, T., and TSEN LIN-IAN

"The Investigation of Λ -Hyperon and K^0 -Meson Production in $\bar{u}C$ and
Interactions at 7-8 Gev"

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

Joint Institute for Nuclear Research
Laboratory of High Energies

BELYAKOV, V.A.; VAN YUN-CHAN [Wang Yung-chang]; VIRYASOV, N.M.;
DU YUAN'-TSAY [Du Yuan-cai]; KIM KHI IN; KLADNITSKAYA,
Ye.N.; KUZNETSOV, A.A.; NGUYEN, DIN TY [Nguyen Dinh Tu];
PENEV, V.N.; SOKOLOVA, Ye.S.; SOLOV'YEV, M.I.

[Properties of π^0 -mesons produced together with strange
particles in π^-p and π^-c -interactions] Izuchenie
svoistv π^0 -mezonov, rozhdaiushchikhsia so strannymi cha-
stitsami v π^-p i π^-c vzaimodeistviiakh. Dubna, Ob"-
edenennyi in-t iadernykh issledovani, 1962. 10 p.
(MIRA 16:10)

(Mesons)

BELYAKOV, V.A.; BOYADZHIYEV, A.V.; VAN YUN-CHAN[Wang Yung-ch'ang];
VEKSLER, V.I.; VIRYASOV, N.M.; KIM KHI IN; KLADNITSKAYA,
Ye.N.; KUZNETSOV, A.A.; MAL'TSEV, V.M.; NGUYEN, DIN TY;
PENEV, V.N.; SOLOV'YEV, M.I.; ZRELOVA, N.N., tekhn. red.

[Production of $\Lambda(\Sigma^0)$ -hyperons and K^0 -mesons in the inter-
action of 7 Gev. π^- -mesons with carbon] Rozhdenie $\Lambda(\Sigma^0)$ -
giperonov i K^0 -mezonov pri vzaimodeistvii π^- -mezonov s
energiei 7 Gev s uglerodom. Dubna, Ob"edinenyyi in-t iader-
nykh issledovani, 1963. 18 p. (MIRA 17:2)

BELYAKOV, V.A.; BOYADZHIYEV, A.; VIRYASOV, N.M.; MAL'TSEV, V.M.

[Mechanism of particle production and interaction in the carbon nucleus] Mekhanizm obrazovaniia i vzaimodeistvii chastits v iadre ugleroda. Dubna, Ob"edinennyi in-t iadernykh issl. 1963. 23 p. (MIRA 17:7)

BELYAKOV, V.A.; VAN YUN-CHAN [Wang Yung ch'ang]; VEKSLER, V.I.;
VIRYASOV, N.M.; VRANA, I.; DU YUAN'-TSAY [Tu Yuan ts'ai];
KIM KHI IN; KLADNITSKAYA, Ye.N.; KUZNETSOV, A.A.;
MIKHUL, E.; NGUYEN, DIN TY; PATERA, I.; PENEV, V.N.;
SOKOLOVA, Ye.S.; SOLOV'YEV, M.I.; KHOFMOKL', T.;
MIKHUL, A.

[Production of Λ -hyperons and K^0 -mesons in π^-p -
interactions at an energy of 7-8 Bev] Issledovanie protses-
sov rozhdenia Λ -giperonov i K^0 -mezonov v π^-p - vzaimo-
deistviiakh pri energii 7-8 Bev. [n.p. n.d.] 26 p.
(MIRA 16:10)

(Mesons) (Hyperons)

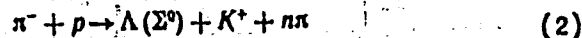
S/056/63/044/002/007/065
B102/B186:

AUTHORS: Belyakov, V. A., Wang Yung Ch'ang, Veksler, V. I.,
Viryasov, N. M., Vrana, I., Tu Yüan-ts'ai, Kim Khi Ying,
Kladnitskaya, Ye. N., Kuznetsov, A. A., Mikhul, E. Nguyen
Din Ty, Patera, I., Penev, V. N., Sokolova, Ye. S.,
Solov'yev, M. I., Khofmokl', T., Cheng Ling-yen, Mikhul, A.

TITLE: Investigation of Λ -hyperon and K^0 -meson production
processes in $\pi^- p$ interactions at 7-8 Bev.

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
no. 2, 1963, 431-443

TEXT: The c.m.s. momentum and angular distributions determined for the
 Λ and K^0 particles produced in πp interactions are given and discussed.
The measurements were made using a 24-liter propane bubble chamber in a
field of 13,700 oe. The total momentum spectrum of the Λ -hyperons
produced in the reactions



Card 1/7

Investigation of Λ -hyperon ...S/056/63/044/002/007/065
B102/B186

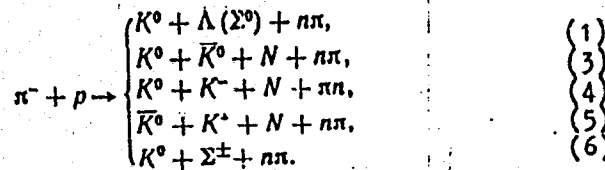
are shown in Fig. 1, compared with theoretical results. As it may be seen the statistical theory describes the experimental curve very well if the isobars and, the cases with $p_p - p = \Delta < 700$ Mev are neglected.

$\Delta < 700$ Mev corresponds to $\sim 30\%$ of all Λ , these being produced in peripheral interactions. The Λ angular distribution has a distinct backward peak ($\bar{n}_\Lambda / n_\Lambda = 0.18 \pm 0.02$). With increasing multiplicity n , the agreement between experiment and statistical theory improves. The Λ angular distribution and the distribution with respect to p_\perp is virtually independent of n_s . The overall mean of the transverse momentum is 383 ± 12 Mev/c; for $\Delta < 700$ Mev, $\bar{p}_{\Lambda\perp} = 295 \pm 14$ Mev/c and for $\Delta \geq 700$ Mev, $\bar{p}_{\Lambda\perp} = 432 \pm 18$ Mev/c. For the $K^0(\bar{K}^0)$ mesons produced in the reactions

Card 2/7

S/056/63/044/002/007/065
B102/B186

Investigation of Λ -hyperon ...



the total momentum spectrum measured (Fig. 4) is weaker than that calculated according to the statistical theory. The angular distribution (Fig. 5) has, besides the isotropic part, a forward peak ($\bar{n}_{K^0}/\bar{n}_{K^0} = 1.61 \pm 0.15$). The

forward-backward ratio decreases with increasing n_s . For the charged pions arising in Λ -production events the momentum distributions are, for $p_\pi^* \geq 400$ Mev/c, well described by the statistical theory without taking the isobars into account; for $p_\pi^* < 400$ Mev/c it is higher than that obtained from theory. The angular distributions for $n_s = 2, 4, 6$ are characterized by

Card 3/7

Investigation of Λ -hyperon...S/056/63/044/002/007/065
B102/B186

$$\vec{n}_{\pi^+}/\vec{n}_{\pi^-} = 1.10 \pm 0.12, \quad \vec{n}_{\pi^-}/\vec{n}_{\pi^+} = 1.40 \pm 0.13.$$

The mean number of π^0 mesons produced per π^-p interaction with Λ production is 1.23 ± 0.14 . The angular distribution of π^- arising in stars with K^0 production has a flat forward maximum ($\vec{n}_{\pi^-}/\vec{n}_{\pi^+} = 1.10 \pm 0.10$). The mean number of charged particles produced together with Λ is $n_s = 2.22 \pm 0.13$ which agrees closely with the statistical theory without the isobars. The main part of Λ and K^0 is produced in two-pronged stars. The admixture of $K^0 \Sigma^\pm$ pairs amounts to less than 20% of the number of $K^0 K^- + K^0 K^+$ pairs. The momentum distribution of charged pions from π^-p interactions with Λ -hyperon production are characterized by $\vec{p}_{\pi^+}^* = 425 \pm 16$ Mev/c and $\vec{p}_{\pi^-}^* = 444 \pm 15$ Mev/c. From a comparison of these angular distributions it is concluded that processes involving ΛK or $K\bar{K}$ pair production are more central than the usual processes of multiple pion production. If one divides the π^-p interactions with strange particle production into head-on

Card 4/7

Investigation of Λ -hyperon ...

S/056/63/044/002/007/065
B102/B106

and peripheral collisions one can say that those involving $K\bar{K}$ pair production are rather of the head-on type than those with ΛK pair production. There are 15 figures and 2 tables.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: July 31, 1962

Fig. 1. Total momentum spectrum of hyperons; dashed line: without correction for recording probability; shaded area: events with $\Delta < 700$ Mev, curves obtained from statistical theory with (I) and without (II) isobars, and without the events with $\Delta < 700$ Mev (II').

Fig. 4. K^0 total momentum spectrum.

Fig. 5. K^0 total angular distribution.

Card 5/7

L 10238-63

FCS(f)/EWI(m)/EDS—AFPTC/ASD

ACCESSION NR: AP3000037

S/0056/63/044/005/1474/1480

AUTHOR: Belyakov, V. A.; Wang Yung-ch'ang; Viryasov, N. M.; Tu Yuan-ts'ai;
Kim Khl In; Kladnitskaya, Ye. N.; Kuznetsov, A. A.; Nguyen Din Ty; Penev, V. N.;
Sokolova, Ye. S.; Solov'yev, M. I.

TITLE: A study of the properties of neutral pions¹⁹ produced with strange particles in negative pion proton and negative pion carbon interactions.

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1474-1480

TOPIC TAGS: Neutral pions, strange particle interactions

ABSTRACT: An earlier investigation on the production of strange particles by 7-8 Bev negative pions on hydrogen and carbon was continued with a 24 - liter propane bubble chamber. The properties of the neutral pions inferred from the photons accompanying the LAMBDA hyperon and neutral kaon production are given and are compared with the properties of the pions (positive and negative) emitted in LAMBDA and neutral-kaon production processes. In calculating the total number of photons, corrections were introduced for the loss of photons

Card 1/2

L 10238-63

ACCESSION NR: AP3000037

8

emitted at large azimuthal angles and for the asymmetry of the incident beam relative to the longitudinal axis of the chamber. The possibility of a resonance with radiative decay is noted. "In conclusion, the authors wish to thank Academician V. I. Veksler, Professor Chang Weng-yu, M. I. Podgoretskiy, A. M. Baldin, A. V. Nikitin, V. B. Lyubimov and Yen Wu-kuang for useful discussions and many valuable remarks, the staff of the computation center for the calculations, and the laboratory assistants for the measurements. Orig. art. has: 4 figures, 9 formulas, and 4 tables.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 07Dec62 DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: PH

NR REF SOV: 008

OTHER: 004

llm/ok
Card 2/2

L 15462-63

FCS(f)/EWT(m)/BDS AFFTC/ASD

ACCESSION NR: AP3005248

8/0056/63/045/002/0088/0089 64

AUTHORS: Belyakov, V. A.; Veksler, V. I.; Viryanov, N. M.; Vrana, J.; Kim Khi In;
Kladnitskaya, Ye. N.; Kuznetsov, A. A.; Mikhul, A.; Nguyen Din Ty*; Solov'yev,
M. I.; Hofmohl, T.; Ch'eng Ling-yen

TITLE: Antilambda hyperon production by 7-8 GeV negative pions on hydrogen

SOURCE: Zhur. eksper. i teoret. fiz., v. 45, no. 2, 1963, 88-89

TOPIC TAGS: hyperon production, antilambda, negative pion decay, cross section

ABSTRACT: The production and decay of $\bar{\Lambda}$ hyperons by 7-8 BeV negative pions are reported, on the basis of 42 V^0 events in which the momentum of the negative particle from the decay was greater than the momentum of the positive particle and the transverse momentum of the decay products was less than or equal to 100 MeV. Selection of the $\bar{\Lambda}$ hyperons was by kinematic criteria, measurement of ionization, and determination of the δ -electron energy. The cross section for the production of $\bar{\Lambda}$ hyperons is found not to differ much from the cross section of NN production, or about 3 μ b. Orig. art. has 1 figure and 1 table.

Card 1/2

L 15462-63

ACCESSION NR: AP3005248

ASSOCIATION: Ob "yedinenny*y institut yaderny*kh reaktaiy (Joint Institute of Nuclear Research)

SUBMITTED: 13Mar63

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: PH

NO REF SOV: 003

OTHER: 002

Card 2/2

L 15526-63

FCS(f)/EWT(m)/BDS AFFTC/ASD

ACCESSION NR: AP3005249

S/0056/63/045/002/0090/0092

63
62

AUTHORS: Belyakov, V. A.; Wang Yung-ch'ang; Veksler, V. I.; Viryasov, N. M.;
Tu Yuan-ts'ai; Kim Khl ini Kladnitskaya, Ye. N.; Kuznetsov, A. A.; Nguyen Din Ty*;
Penev, V. N.; Solov'yev, M. I.

19
TITLE: Polarization of lambda hyperons produced in negative pion -- carbon interactions at 7 GeV energy

SOURCE: Zhur. eksper. i teoret. fiz., v. 45, no. 2, 1963, 90-92

TOPIC TAGS: lambda hyperon , pion , carbon, longitudinal polarization, complex nucleus

ABSTRACT: A search was made for Λ hyperons produced in collisions between 7 BeV negative pions and carbon nuclei in order to ascertain whether Λ hyperons produced in complex nuclei have longitudinal polarization and to verify whether the asymmetry in the angular distributions observed by Salmeron and Zichichi (Nuovo cimento v. 11, 461, 1959) depended on the energy of the incident particle or whether the interaction involved complex nuclei. The polarization values obtained for 260 Λ hyperons were found to be -0.01 ± 0.11 , -0.06 ± 11 , and $+0.04 \pm 11$ for the front-back, right-left, and up-down distributions, respectively, from which

Card 1/2

L 15526-63

ACCESSION NR: AP3005249

it is concluded that there is no longitudinal polarization. The authors' colleagues, the laboratory staff, and the staff of the computer center are credited with assistance. Orig. art. has 5 formulas.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Inst. of Nuclear Research)

SUBMITTED: 13Mar63

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: PH

NO REF SOV: 003

OTHER: 007

Card 2/2

L 21355-65 EPF(c)/EPR/EWG(j)/EWT(m)/EWP(b)/T/EWP(e)/EWP(t)/ Pr-4/PS-4
IJP(c)/AFWL/SSD WH/WW/JD
ACCESSION NR: AP5000857 S/0168/64/000/005/0037/0040

AUTHOR: Starodubtsev, S. V.; Khrushchev, B. I.; Belyakov, V. A.; Komarov, V. E.

TITLE: Measurement of neutron spectra by a monocrystalline spectrometer in the thermal column *qm*

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 5, 1964, 37-40

TOPIC TAGS: neutron diffraction, crystal spectrometry, monocrystalline lead, thermal neutron *16*

ABSTRACT: A method suitable for investigating the spectra of thermal neutrons with wavelengths from 1.0 to 5.3 Å is described. In this method, reflection from the (111) plane of monocrystalline lead is utilized to analyze the neutron beam. The scattering by the crystal is shown schematically in Fig. 1 of the Enclosure. The angle of cut relative to the (111) plane is denoted by α ; y is the width of the impinging beam, x that of the reflected beam. The experimental device is shown schematically in Fig. 2 of the Enclosure. The graphite plugs are each 50 cm in length. A fraction of the order of 1% of the basic beam is scattered by the device. Fig. 3 of the Enclosure shows the spectrum obtained by the device. The distribution is approximately Maxwellian. Orig. art. has: 5 figures and 4 equations.

Card 1/82

L 21355-65

ACCESSION NR: AP5000857

ASSOCIATION: Institut yadernoy fiziki AN Uz SSR (Nuclear Physics Institute, AN Uz SSR)

SUBMITTED: 26Aug63

ENCL: 03

SUB CODE: NP, OP

NO REF SOV: 000

OTHER: 002

Card 2/5

BELIAKOV, V.A.; BOYA'DZHIYEV, A.V.; VIRYASOV, N.M.; MAL'TSEV, V.M.

Formation and interaction mechanism of particles in a carbon nucleus. Acta physica Pol 25 no.6:781-796 Je '64.

1. Joint Institute of Nuclear Research, Laboratory of High-Energy Computer Center, Laboratory of Theoretical Physics, Dubna, U.S.S.R.

ACCESSION NR: AP4037568

S/0056/64/046/005/1586/1597

AUTHORS: Belyakov, V. A.; Boyadzhiev, A. V.; Wang, Yung-ch'ang;
Veksler, V. I.; Viryasov, N. M.; Kim Khi In; Kladnitskaya, Ye. N.;
Kuznetsov, A. A.; Mal'tsev, V. M.; Nguyen Din Ty*; Penev, V. N.;
Solov'yev, M. I.

TITLE: Production of $\Lambda(\Sigma^0)$ hyperons and K^0 mesons in interaction
between 7 GeV negative pions and carbon

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1586-1597

TOPIC TAGS: Λ hyperon, Σ^0 hyperon, neutral kaon, negative pion
carbon interaction, hyperon production, kaon production, pion proton
interaction, bubble chamber, secondary interaction fraction, angular
distribution, momentum distribution, cascade model

ABSTRACT: The production of $\Lambda(\Sigma^0)$ hyperons and K^0 mesons by negative
pions on carbon was investigated and compared with earlier results

Card 1/6

ACCESSION NR: AP4037568

(ZhETF v. 40, 464, 1961) from π^-p interactions at the same pion momentum. A 24-liter propane bubble chamber in a constant field of 13,700 Oe was used in accordance with a procedure described before (ZhETF, v. 38, 426, 1960). The purpose of the experiment was to estimate the fraction of the secondary interactions. An estimate was made for the first time of the fraction of strange particles produced in the secondary processes. The momentum spectrum of the Λ hyperons (in the pion-nucleon center of mass system) was compared with the spectrum for the π^-p interactions. The following distribution of events over the reaction channels was obtained

	$\gamma^0 K^0$	$\gamma^0 K^+$	$K^0 \bar{K}^0$	$K^0 K^- + K^+ \bar{K}^0$	$\Sigma^{\pm} \Lambda^0$	$\gamma^0 \gamma^0 K^+ K^-$
Number of events	427 ± 80	223 ± 81	147 ± 52	323 ± 127	$80 \pm 31^{(3)}$	40
Cross section, mb	$4,8 \pm 0,8$	$2,5 \pm 0,0$	$1,7 \pm 0,6$	$3,6 \pm 1,4$	$0,0 \pm 0,4$	0,04

and the cross section for each interaction event with the carbon was calculated to be 0.0113 mb. This yielded the following cross

Card 2/6

ACCESSION NR: AP4037568

sections

$$\sigma(Y^0 K^0) = 7,3 \pm 1,2 \quad \text{and} \quad \sigma(K^0 \bar{K}^0) = 5,3 \pm 1,5$$

The good agreement between the calculated and experimental values of the spectra of the Λ hyperons and K^0 mesons gives grounds for assuming that the cascade model holds true for these phenomena. It also is concluded that the previously observed hard part of the momentum spectrum of the Λ hyperons in the pion-nucleon center of mass system in πp interactions is due to an admixture of carbon events, and that the role of the secondary processes which lead to the production of strange particles is quite appreciable even on the carbon nucleus. "The authors are grateful to I. Klugov and M. Shneyeberger for help at the beginning of the work, to V. S. Barashenkov, I. V. Chuvilo, and M. I. Podgoretskiy for discussion and valuable remarks, to Ye. P. Zhidkov, G. A. Ososkov, and K. N. Danilova for help with the calculations, and to the laboratory group for the measurements." Orig.

Card 3/6

ACCESSION NR: AP4037568

art. has: 5 figures, 7 formulas, and 1 table.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy
(Joint Institute of Nuclear Research)

SUBMITTED: 02Dec63

DATE ACQ: 09Jun64

ENCL: 02

SUB CODE: PH

NR REF SOV: 013

OTHER: 008

Card

4/6

ACCESSION NR: AP4037568

ENCLOSURE: 01

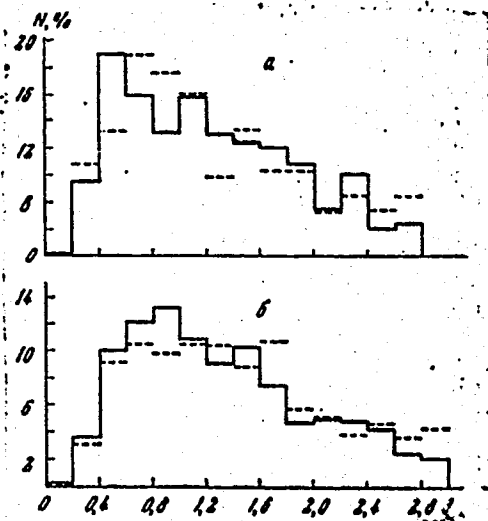
Particle type	Particle number	Particle type	Particle number
Λ	108	$\Lambda + \Lambda$	1
K^0	248	$K^0 + K^0 + \Lambda$	1
$\Lambda + K^0$	45	$K^0 + (\Lambda + K^0)$	5
$K^0 + \bar{K}^0$	39	$\Lambda + (\Lambda + K^0)$	1
	9	$\bar{\Lambda}$ или K^0	3

Distribution of events

Card 5/6

ACCESSION NR: AP4037568

ENCLOSURE: 02



Momentum distribution of Lambda hyperons (a) and kaons (b) from pion-carbon interaction at 7 GeV/c
solid - experimental
dashed - Monte Carlo calculation

Card. 6/6

ACCESSION NR: AP4037575

S/0056/64/046/005/1632/1636

AUTHOR: Belyakov, V. A.

TITLE: Large nuclear deformations in the anisotropic-oscillator model

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1632-1636

TOPIC TAGS: deformed nucleus, even even nucleus, energy gap, energy level, chemical potential

ABSTRACT: In view of the fact that earlier investigations were confined to deformations not exceeding 0.3 and pertaining only to equilibrium deformations of nuclei, the anisotropic oscillator model is used to calculate the energy of the ground state, the chemical potential, and the magnitude of the gap in the energy spectrum of the even-even nuclei Kr^{86} , Sr^{88} , Sr^{90} , Ba^{136} , and Ce^{140} at large deformations. The calculation program consisted of choosing the single-

Card 1/3

ACCESSION NR: AP4037575

particle Hamiltonian, obtaining the self-consistent formulation, and take into account the pairing effects. The system of equations for determining the ground state energy, chemical potential, and gap is obtained by a procedure described by Belyayev (Mat. Fys. Medd. Dan. Vid. Selsk. 31, No. 11, 1959), and the resultant system of equations was solved separately for neutrons and protons. The variation of the effective energy levels with the deformation is found to agree well with the behavior of the Nilsson system of single-particle levels (S. Nilsson, Kgl. Danske Vidensk. Selsk. Mat.-Fys. Medd. v. 29, no. 16, 1-68, 1955). At deformations corresponding to the fission barrier, however, the Nilsson model cannot be employed. Furthermore, the anisotropic oscillator model cannot give in principle a fission barrier. The use of the calculation results for the determination of the deformation of fragments immediately after fission yields for the square of the eccentricity a value $\epsilon \sim 0.25$, whereas calculations on the liquid-drop model yield $\epsilon = 0.37$. "The author is grateful to B. T. Geylikman for suggesting the topic and

Card 2/3

ACCESSION NR: AP4037575

for interest in the work." Orig. art. has: 3 figures, 3 formulas,
and 1 table.

ASSOCIATION: None

SUBMITTED: 10Jun63

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: NP

NR REF SOV: 002

OTHER: 003

Card 3/3

BELYAKOV, V.A.; VEKSLER, V.I.; VIRYASOV, N.M.; KLADNITSKAYA, Ye.N.;
KOPYLOV, G.I.; MIKHUL, A. [Michul, A.]; PENEV, V.N.; SOKOLOVA,
Ye.S.; SOLOV'YEV, M.I.

π -Meson resonances generated simultaneously with strange particles in π -p-interactions at 7.5 GeV/c. Zhur. eksp. i teor. fiz. 46 no.6:1967-1978 Je '64.

1. Ob"yedinennyy institut yadernykh issledovaniy. 2. So-
trudnik Instituta atomnoy fiziki Rumynskoy Akademii nauk,
Bukharest (for Mikhul). (MIRA 17:10)

BASHARIN, A.V.; BELYAKOV, V.A.; DONSKOY, A.V.; NEYMAN, L.R.; RAVDONIK,
V.S.; RENNE, V.T.; RUZIN, Ya.L.; SABININ, Yu.A.; USOV, S.V.

Vasilii Gavrilovich Drannikov, 1904 -; on his 60th birthday
and the 35th anniversary of his theoretical and educational
work. Elektrichestvo no.10:87 0 '64. (MIRA 17:12)

L 23730-66 ENT(m)/T

ACC NR: AP6014814

SOURCE CODE: UR/0367/65/001/002/0338/0350

AUTHOR: Belyakov, V. A.; Veksler, V. I.; Viryasov, N. M.; Kladnitskaya, Ye. N.---
Kladnitskaya, E. N.; Kopylov, G. I.; Penev, V. N.; Solov'yev, M. I.---Solovyev, M. I.

ORG: Joint Institute of Nuclear Research (Ob'yedinennyy institut'yadernykh issledovaniy)TITLE: Baryon¹⁹ resonances in π -p-interactions at 7.5 GEV with formation of strange particlesSOURCE: Yadernaya fizika, v. 1, no. 2, 1965, 338-350

TOPIC TAGS: baryon, meson, particle interaction, strange particle, hyperon, particle cross section

ABSTRACT: The formation and properties of resonances decaying into Λ -hyperons and π^\pm -mesons were studied. Data are given on the formation cross sections for Y^+ (1385) and Y^+ (1660)-hyperons in π^- -p-interactions at 7.5 GEV/c. The properties and formation characteristics of Y^+ (1385)-hyperons and their decay products were investigated. The maximum in the mass spectrum $M_{\Lambda, \pi^+ \pi^-}$ at the value 1770 MEV was discussed. The authors thank Professor M. I. Podgoretskiy and Professor I. V. Chuvilo for their interest in the work and their discussions; A. Mikhul, Nugen Din Ty, A. A. Kuznetsov, Ye. S. Sokolova, Du Yuan'-tsay, Van Yun-chan and Kim Khi In for taking part in the first stage of the work. Further thanks is rendered N. P. Markov and V. Ye. Komolov, co-workers at the Computer Center, for carrying out the calculations and the group

Card 1/2

I. 23730-66

ACC NR: AP6014814

of laboratory workers for the measurements. The authors also thank V. G. Grishin, A. V. Nikitin, E. G. Bubelev, and I. Kurelar for discussing the various problems of this work. Orig. art. has: 9 figures, 2 formulas, and 4 tables. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 01Sep64 / ORIG REF: 011 / OTH REF: 009

Card 2/2 *AW*

L 23731-66 EWT(m)/T

ACC NR: AP6014815

SOURCE CODE: UR/0367/65/001/002/0351/0365

AUTHOR: Belyakov, V. A.; Veksler, V. I.; Viryasov, N. M.; Kladnitskaya, Ye. N.,--
Kladnitskaya, E. N.; Kopylov, G. I.; Penev, V. N.; Solov'yev, M. I.--Solovyev, M. I.

ORG: Joint Institute of Nuclear Research (Ob'yedinenyy institut yadernykh issledovaniy)

TITLE: Meson resonances in pi-p interactions at 7.5 GEV with formation of strange particles

SOURCE: Yadernaya fizika, v. 1, no. 2, 1965, 351-365

TOPIC TAGS: pi meson, strange particle, particle interaction, K meson, mass spectrum

ABSTRACT: Resonances decaying into K^* (\bar{K}^0, K^+) and π -mesons are investigated. Cross sections are given for the formation of K^* (888) and k (730) mesons in π -p interactions at 7.5 GEV/c in events with $\bar{K}K$ pairs, and the contribution (in %) of k^0, K^{*0} -mesons in events with ΛK^+ pairs is evaluated. Properties and formation characteristics of K^{*+} -mesons are described. Mass-spectra of the $K2 \pi^+$ and $K3 \pi^+$ systems are investigated. The possibility of the formation of a new resonance $U = K^0 + \pi^+ + \pi^+ + \pi^+$ with mass 1660 MEV is indicated. An attempt is made to determine its quantum numbers. Proofs are given for the production of a resonance with mass 1050 MEV, decaying into three π -mesons ($\pi^+ \pi^+ \pi^0$), which can be identified as the A_1 -meson.

Card 1/2

L 23731-66

ACC NR: AP6014815

The authors thank Professor M. I. Podgoretskiy and Professor I. V. Chuvilo for their interest in the work and for the discussions; A. Mikhul, Ngen Din Ty, A. A. Kuznetsov, Ye. S. Sokolova, Du Yuan'-tsay, Van Yun-chan and Kim Khi In for taking part in the first stage of the work. Further thanks is rendered to the co-workers at the Computer Center, N. F. Markov and V. Ye. Komolov, for carrying-out the calculations and the group of laboratory workers for the measurements. The authors also thank A. V. Nikitin, V. G. Grishin, E. G. Bubelev, and I. Kurelar for discussing the various problems of this work. Orig. art. has: 13 figures and 3 tables. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 01Sep64 / ORIG REF: 008 / OTH REF: 013

Card 2/2 *SW*

BELYAKOV, V.A.

Isomer shifts and the structure of metastable nuclear states. Izv.
AN SSSR, Ser. fiz. 29 no.7:1184-1191 J1 '65. (MIRA 18:7)

0013-66 ENT(M) DIAAP

ACC NR: AP5024704

SOURCE CODE: UR/0056/65/049/003/0832/0840

AUTHOR: Belyakov, V. A.

ORG: none

TITLE: The isomer shift and the structure of metastable states of nuclei

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 3, 1965, 832-840

TOPIC TAGS: nuclear isomer, isotope, nuclear structure, ground state, excited state, metastable state

ABSTRACT: The dependence of the energy of the electronic states of an atom on the state of the nucleus (ground or excited state) is calculated on the basis of the theory of finite Fermi systems. The difference in the mean-square radii of the electric charge distribution in the ground and excited states is calculated for the purpose of detecting subtle effects in the structure of the nucleus. Isomers are considered for which the transition to the ground state is a single-particle transition, so that the calculation of the difference in the mean-square radii reduces to computing the difference in the changes in the mean-square radii of the charge distribution resulting from adding the nucleon in different single-particle states. The constant for the volume isotopic shift is calculated for the same region of atomic weights. The nature of the excited nuclear states is discussed, and comparison of the calculations with single-particle estimates shows that the effective-charge approximation is completely inapplicable to the problem of the isomer shift. Author

Cord 1/2

32
28
B

1-0015-00

ACC NR: AP5024704

thanks Professor A. B. Migdal for interest and M. A. Mikulinskiy for valuable discussions. Orig. art. has: 14 formulas and 3 tables.

SUB CODE: 20/ SUBM DATE: 13Mar65/ ORIG REF: 005/ OTH REF: 011

L 24270-66 EWT(1)/EWT(m)/EWP(j) IJP(c) RM

ACC NR: AF6007022

SOURCE CODE: UR/0051/66/020/002/0365/0366

AUTHOR: Belyakov, V. A.; Vasil'yev, R. F.

36
B

ORG: none

2 /

TITLE: Chemiluminescence in solutions. III. The effect of additives which differ in the height of their electronic levels

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 365-366

TOPIC TAGS: chemiluminescence, luminescence quenching, electron energy level, optic activity, photoluminescence

ABSTRACT: This is a continuation of earlier studies (Opt. i spektr. v. 18, 418, 1965; DAN SSSR v. 156, 1402, 1964) dealing with luminescent substances capable of enhancing chemiluminescence. The authors report that acceptors introduced into the reaction can be activators or quenching agents, depending on the relative position of the donor and acceptor energy level. It is reported that anthracene derivatives intensify the chemiluminescence of cyclohexanone and acetophenone. Naphthalene also quenches cyclohexanone and acetophenone, but does not affect chemiluminescence of diacetyl. The additive molecules are excited only at the expense of energy transfer from the donor which is excited in the reaction. These facts agree well with the photoluminescence mechanism in solid and liquid solutions, thus substantiating the feasibility of using chemiluminescence for the study of energy transfer. With a chemical method of excitation, the absorptive power of the solution components does not play any role. There-

Card 1/2

UDC: 535.379

2

L 24270-66

ACC NR: AF6007022

0

fore, unlike in the optical method, the acceptor does not become excited even if it absorbs strongly in the same region as the donor. It is planned to investigate the correlation between the energy transfer rate and the nature of the electronic states of the donor and acceptor.

SUB CODE: 20/ SUBM DATE: 21Jun65/ ORIG REF: 003/ OTH REF: 003

Card 2/2da

CHEBOTAREV, Yevgeniy Viktorovich; BELYAKOV, V. A., kand. tekhn. nauk, retsenzent; VORONIN, A.V., kand. tekhn. nauk, retsenzent; RYVKIN, Yu.Ye., kand. tekhn. nauk, dots., red.; FRIDKIN, L.M., tekhn. red.

[Principles of electric traction] Osnovy elektricheskoi tiagi. Moskva, Gosenergoizdat. Pt.2. [Theory of operation, methods for design, and choice of the parameters of the principal elements of electric-power supply systems of electric railroads] Teoriya raboty, metody rascheta i vybor parametrov osnovnykh elementov sistemy elektroizobrazheniya elektricheskikh dorog. 1963. 183 p. (MIRA 16:9)
(Electric railroads)

BELYAKOV, V.D.

Results of using universal assembly devices at the Admiralteiskii
shipyard. Sudostroenie 26 no.3 (209):48-52 Mr '60.
(MIRA 14:11)

(Shipfitting)

SURKOV, A.I. , kand.tekhn.nauk; BELYAKOV, V.D., inzh.

Study of the stress state of an interlayer with coaxial and noncoaxial arrangement of pillars. [Trudy] VNIMI no.45:310-314 '62.

(MIRA 16:4)

(Mining engineering)

(Strains and stresses)

SURKOV, A.I., kand.tekhn.nauk; IYEVLEV, G.A., inzh.; BELYAKOV, V.D., inzh.

Distribution of pressures in a shaft support with an uneven thickness
and an uneven load. Trudy VNIMI no.46:75-82 '62.

(MIRA 16:5)

(Mine timbering)

BELYAKOV, V.D.

Method of bacteriological control of well water. *Gig. sanit., Moskva*
no.6:41 June 1952. (CML 23:2)

BELYAKOV V.D.
USSR/Medicine - Epidemiology

FD-1646

Card 1/1 : Pub. 148-26/28

Author : Znamenskiy, G. A. and Belyakov, V. D.

Title : Certain theoretical problems of epidemiology

Periodical : Zhur. mikro, epid. i immun. 7, 103-108, Jul 1954

Abstract : A discussion of epidemiology as a "social-medical" science from the dialectical viewpoint is given. Epidemiology is defined from the point of view of communist ideology. No references are cited. A quotation from Engel's is used to illustrate the author's contentions.

Institution : --

Submitted : August 15, 1953

BELYAKOV, V. D.

"A Comparative Evaluation of the Quality of Antidysentery Vaccines," by V. D. Belyakov, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, Oct 56, pp 48-52

This work discusses experiments conducted on mice, rabbits, and humans to determine the relative effectiveness of the NIISI polyvaccine, tetravaccine, and the oral vaccine. A single inoculation with the polyvaccine produced the same results in experiments on 300 mice as triple inoculation with the tetravaccine. A second inoculation with the polyvaccine increased the resistance of mice to infection with cultures of Flexner and Sonne dysentery bacteria only slightly. The intensity of immunity as measured by the survival rate of the animals was higher in regard to the Sonne cultures.

These experiments were repeated with the same vaccines on rabbits. The Sonne component of both the polyvaccine and the tetravaccine was found to be ineffective. The results of these experiments on mice and rabbits are presented in tabular form.

"The immunological changes which occur in naturally susceptible animals are not identical with the changes which occur in the human organism. Therefore, we carried out observations of the immunological effectiveness of vaccination on humans. In addition to the effectiveness of the poly- and tetravaccines, the effectiveness of combined subcutaneous vaccination with polyvaccine and oral administration of antidysentery tablets was also studied."

"The antigenic properties of the dysentery components of the vaccines proved to be very low. Moreover, no essential difference in their effectiveness could be discerned."

The results obtained are presented in a table showing the immunological changes registered by the persons vaccinated. "Attempts to increase the effect of immunization by supplementary administration of the tablets were not successful. Regardless of the number of tablets taken or the schedule of their administration, enteral vaccination did not retard the reduction in agglutinins or protective antibodies during the second and third months after inoculation with the polyvaccine."

Since the limited number of persons involved in these experiments was considered too low to produce valid results, mass epidemiological trials were conducted, i.e., 6,873 persons were inoculated with tetra-vaccine, 4,763 with polyvaccine, and 7,545 with a combination of poly-vaccine and tablets. Subsequent analysis of data on cases of dysentery appearing among persons inoculated by the three methods showed no substantial differences in their effectiveness in regard either to incidence rates, or to clinical manifestations, i. e., 96.6% had Flexner-type dysentery, 1.5% the Sonne type, and 1.5% the Newcastle type.

Vaccination by any of the methods had no effect on the seasonal dynamics of the incidence rate. A graph illustrating this point is given. "Consequently, if a specific degree of resistance of the organism to infection is imparted by vaccination, the intensity of immunity is, evidently, so low that it is incapable of allaying the usual seasonal rise in incidence."

On the basis of the results obtained the following conclusions are reached:

"1. The immunogenic properties of the dysentery components of the vaccines now in use are extremely low. This dictates the necessity of seeking new methods of immunoprophylaxis of dysentery.

"2. Essential differences in the immunological and epidemiological effectiveness of the dysentery components in the NIISI polyvaccine and tetravaccine could not be detected; therefore substitution of the polyvaccine for the single dose of tetravaccine now being used is not justified.

"3. The results of our experiments confirm the data of a number of authors concerning the necessity of substituting more efficacious antigens for the formalized cultures now being used in the antidysentery tablets.

"4. The effectiveness of the method of simultaneously conducting subcutaneous inoculation [with the polyvaccine] and oral administration of tablets merits attention and further study."

Sum 1274

BELYAKOV, V.D.

Problem of determining the protective properties of immune serum.
Zhur. mikrobiol., epidem. i immun. 27 no.3:69-73 Mr' 56. (MIRA 9:7)
(IMMUNE SERUMS,
determ. of protective properties (Rus))

BEYAKOV, V. D.
"The Epidemiological and Immunological Effectiveness of Vaccines Against Intestinal Infections in Dysentery," by V. D. Belyakov, V. Ye. Korostelev, I. I. Rogozin, and A. L. Siriko, Voyenno-Meditsinskiy Zhurnal, No 11, Nov 56, pp 37-44

The article presents results of large-scale inoculations to determine the epidemiological effectiveness of the dysentery components in vaccines against intestinal infections. In April 1955, 21,175 persons were inoculated with NIISI (Scientific Research Testing Institute of Sanitation) polyvaccine, 18,409 persons with tetravaccine, and 20,820 persons with antidysentery vaccine in tablet form. Of all persons under observation, 95.9% were revaccinated, and the remaining 4.1% received only the primary vaccination. Groups in several populated areas were inoculated according to the same schedule.

All infections which occurred during the month after inoculations -- acute dysentery inflammation of intestines, and chronic dysentery -- were registered separately. A graph shows incidence curves of three groups, i.e., persons inoculated with NIISI polyvaccine, tetravaccine, and antidysentery tablets, respectively, for a period of 6 months (May-September). The article considers minor differences in the curves to be the result of chance fluctuation in epidemiological conditions, not dependent on the nature of the inoculation. It states that none of the vaccines conferred immunity sufficient to combat the seasonal rise in incidence.

Sum.1345

Analysis of data obtained during one year of observations (presented in Table 1) [tables not reproduced] substantiated the similarity in effectiveness of the vaccines tested. Insignificant differences in incidence were consistently evidenced. It was found, however, that indexes of incidence according to group were dissimilar in several of nine observation points. Table 2 shows appreciable differences in incidence rates of acute dysentery and inflammatory intestinal infections in four observation points. The authors doubt that these fluctuations can be ascribed to the quality of the vaccines employed. They propose that they are due rather to peculiarities in epidemiological conditions, and offer data to substantiate this statement.

Epidemiological data are confirmed by the results of laboratory investigations. Various clinical indexes according to method of inoculation of persons with acute dysentery are given in Table 3. Clinical manifestations and the severity of the course of the disease were similar in all cases. Characteristics of dysentery pathogens isolated from patients are shown in Table 4. Pathogens against which antigens were contained in the vaccines were isolated most frequently.

Sum. 1345

The article discusses the agglutination reaction in sera of persons immunized with the aforementioned preparations.

Three groups of persons previously immunized parenterally against intestinal infections were inoculated with the preparations being investigated and placed under observation. After revaccination, sera were taken from the patients and kept in a refrigerator for 1-3 months, at which time second and third portions of serum were collected from the same patients and stored. To eliminate the possibility of chance results in determining the quality of the vaccines, 12 series of each preparation were used for immunization. All three sera from the same person were investigated by the agglutination reactions with typhoid-paratyphoid and dysentery diagnosticums simultaneously. The article describes method used and discusses results obtained. "ON" diagnosticum, especially prepared for use in these tests was used. The reaction was set up in serum dilutions beginning with 1:50 for typhoid-paratyphoid and Flexner's dysentery antigens, and 1:10 for Sonne's dysentery antigens. Indexes in all cases were rather close. Table 5 shows the number of sera reacting positively with each diagnosticum and in relation to the time the serum was obtained. Percentages of persons in whom an increase in agglutination titer as a result of inoculation was observed are listed in Table 6. The data show that none of the vaccines brought about an increase in the titer of agglutinins to any antigen in more than 50% of immunized persons. The best indexes were obtained with the typhoid component; relative evaluations are given of other components of the tet-ravaccine and NIISI vaccines.

Sym. 1345

DELETED, NO.

Average agglutination titers of the sera investigated with antigen are shown in Table 7. Table 8 gives indexes of increases in antibody titers; these results indicated that the NIISI polyvaccine was slightly superior to the tetravaccine. In Table 9, indexes of increase in the average titer of antibodies to the diagnosticum are presented; results shown in this table substantiate the superiority of all components of the NIISI polyvaccine as compared with the tetravaccine.

The article concludes that the best indexes were obtained from the typhoid-paratyphoid components; the dysentery components were not markedly effective. Antidysentery vaccine in tablet form did not produce any increase in the titer of antibodies to either typhoid-paratyphoid or to dysentery antigens. (U)

54M.1345

57. Epidemiology of Q Fever Studied

"Some Data on the Epidemiology of Q Fever," by Lt Col Med Serv
V. D. Belyakov, Candidate of Medical Sciences, and Lt Col Med
Serv I. A. Shifrin, Candidate of Medical Sciences, Voyenno-
Meditsinskiy Zhurnal, No 4, Apr 57, pp 34-38

The report covers studies made in "three different locations" in Central Asia on the causes and transmission of Q fever. The role played by ticks and domestic animals in the transmission was investigated.

It was determined that the pathogen was transmitted in the dust stirred up by sheep and goats and inhaled by the people who were in close contact with them or who used the same dusty roads over which the herds were driven to pasture, and that the resulting infections often reached epidemic proportions. Only isolated cases of Q fever could be traced to tick bites.

Where people are exposed to close contact with domestic animals, especially sheep and goats, inoculation is necessary. (U)

Sum 1439

BELYAKOV, V.D.

"Virus and rickettsial infections in man" ed. T.Rivers. Reviewed by
V.D.Beliakov. Zhur.mikrobiol.epid. i immn. 28 no.5:145-147 My '57.
(RICKETTSIAL DISEASES) (MLRA 10:7)
(VIRUS DISEASES) (RIVERS, T.)

BELYAKOV, V.D.

"Infectious diseases of man" by V.M.Zhdanov. Reviewed by V.D.
Beliakov. Zhur.mikrobiol.epid. i immun. 28 no.11:153-155 N '57.
(COMMUNICABLE DISEASES) (ZHDANOV, V.M.) (MIRA 11:3)

ROGOZIN, I.I., prof.; BELYAKOV, V.D., kand.med.nauk

Vaccinal process in associated immunization. Vest. AMN SSSR
13 no.10:23-34 '58 (MIRA 11:10)

1. Chlen-korrespondent AMN SSSR (for Rogozin).
(VACCINATION,
polyvaccines, immun: reactions (Rus))

BELYAKOV, V.D.

SIROKO, A.L., BELYAKOV, V.D.

On I. J. Davydovskii's book "Theories of infection." Reviews, criticism, and bibliography. Zhur. mikrobiol. epid. i immun. 29 no. 6: 118-122 Je '58 (MIRA 11:7)
(INFECTION)

BELYAKOV, V.D.; IL'CHENKO, A.A.

Effectiveness of combined immunization against enteric infections and
Q fever. Zhur. mikrobiol. epid. i immun. 29 no.11:29-34 N '58.
(MIRA 12:1)

1. Iz Voenno-meditsinskoy akademii imeni S.M. Kirova,
(VACCINES AND VACCINATION,
polyvaccines against intestinal infect. & Q fever (Rus))
(Q FEVER, prev. & control, immunol.
same)

BELYAKOV, V.D., kand.med.nauk, polkovnik meditsinskoy sluzhby; IVANOV, K.G.,
kand.med.nauk, mayor meditsinskoy sluzhby; IL'CHENKO, A.A., mayor
meditsinskoy sluzhby

Effectiveness of hygienic washing as a method for skin disin-
fection. Voen.med.zhur. no.5:73-75 My'59. (MIRA 12:8)

(HYGIENE,

washing as effective disinfection method
(Rus))

ROGOZIN, I.I.; BELYAKOV, V.D.

"Communicable diseases of man," V.M. Zhdanov. Reviewed by I.I. Rogozin,
V.D. Belyakov. Zhur.mikrobiol., epid.i immun. 30 no.11:134-136 N '59.

(MIRA 13:3)

(COMMUNICABLE DISEASES)

(ZHDANOV, V.M.)

ARSLANOVA, A.Kh.; BELYAKOV, V.D.; BERGER, B.I.; VASIL'YEV, A.S.; GAVRILOV,
N.A.; GEL'MAN, L.I.; KALUGIN, V.P.; KOROSTELEV, V.Ye.; KRAMER,
I.I.; MIKHAYLOVSKIY, V.T.; ROGOZIN, I.I.; SEREBRYAKOV, L.V.

Combined vaccination with chemical and living vaccines. Voen.-med.
zhur. no. 1:78-80 Ja '60. (MIRA 14:2)
(VACCINATION)

ROGOZIN, I.I., professor, polkovnik med.sluzhby; BILYAKOV, V.D., dotsent,
polkovnik med.sluzhby; IL'CHENKO, A.A., mayor med.sluzhby

Experimental basis for emergency prophylactic measures. Voen.-
med.shur. no.2:55-58 F '60. (MIRA 13:5)

(COMMUNICABLE DISEASES exper.)

ROGOZIN, I.I.; BELYAKOV, V.D.

The significance of variability of microorganisms in the epidemic process. J.hyg.epidem., Praha 4 no.3:309-313 '60.

1. Department of Epidemiology, Kirov Military Medical Academy, Leningrad.

(EPIDEMIOLOGY)
(MICROBIOLOGY)

S/016/60/000/06/01/051

AUTHORS: Rogozin, I.I., and Belyakov, V.D.
TITLE: Method of Epidemiological Research
PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1960, No. 6,
pp. 3 - 6

TEXT: The authors illustrate the claim of epidemiology to be regarded as a separate science with its own distinct method of research. This constitutes a complex of studies involving macroscopy and microscopy, comparative analysis, the case-history approach, statistics and experimental work. Apart from microbiological factors, social and economic aspects must also be taken into consideration. Epidemiology is a specific science in its own right and necessitates the formation of departments of epidemiology at medical institutes throughout the Soviet Union. There are 5 Soviet references. ✓

ASSOCIATION: Voyenno-meditsinskaya ordena Lenina akademiya imeni Kirova (Order of Lenin Military Medical Academy imeni Kirova)

SUBMITTED: October 8, 1959

Card 1/1

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(MIRA 13:12)

(COMMUNICABLE DISEASES)

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31 no.2:3-9 D '60. (MIRA 14:6)

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i immun. 31 no.6:3-6 Je '60. (MIRA 13:8)

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tekh. red.

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Further study of the immunological effectiveness of combined
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V.D.Beliakov, R.Kh. Iafaev. Zhur.mikrobiol., epid. i immn. 32
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