"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

56-6-9/56

AUTHOR MESHKOVSKIY, A.G., PLIGIN, Y.[illegible], SHALA[illegible]OV, [illegible]YA., SHEBANOV, V.A.

TITLE Creation of π-Mesons on Zero Isotopic Spin Particles. (Obrazovaniye π-mezonov na yadrakh s izotopicheskim spinom nul' Russian)

PERIODICAL Zhurnal Eksperim. i Teoret.Fiziki,1957,Vol 32,Nr 6,pp 1328-1334 (U.S.S.R.)

ABSTRACT For an angle of observation of 45° the present paper determines the energy spectra and the differential production cross sections of positive and negative pions on deuterium as well as the production cross sections of negative pions on carbon.In addition to the results obtained by Poroshkin and Tyapkin the necessary data for the comparison of experimental results with the relation $\sigma^+ + \sigma^- = 2\sigma^0$ was in this way obtained.Here σ^+, σ^- and σ^0 denote the total or differential cross sections of the production of positive, negative, and neutral mesons respectively.Measurements were carried out on the exterior proton bundle of the synchrocyclotron of the United Institute for Nuclear Research.The measuring method and the apparatus have already been described in some of the author's previous works. Results obtained by measuring the energy spectra of positive and negative mesons which were produced by 660 MeV protons on deuteriums and carbon at an angle of observation of 45°, are shown together in a table.A further table contains the differential cross sections of the production of positive and negative mesons. The he-

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On the Use of a Mixture of Two Liquids for a Bubble Chamber.

56-6-40/56

the case of the second at temperatures of from 43 to 52°C. The results of these experiments are given in form of a diagram. The chamber was expanded every 10 minutes. In the case of all experiments carried out pressure in the chamber between expansions amounted to 35 atm. The duration of sensitivity was determined photographically. The chamber works satisfactorily with a mixture which, at room temperature, has a pressure of the saturating (saturated) vapors of about 21 atm. The mixture used here is suited for many nuclear investigations because of its high density ($\sim$1.0 g/cm^3). Using such a mixture of liquids might render selection of the filling medium forthe chamber more easy. Also mixtures containing hydrogen as e.f. methane and propane, are interesting.
(1 illustration).

ASSOCIATION Not Given.
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Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

The Production of Negative π-Mesons by the Bombardment of Various Nuclei with 66o MeV Protons. 56-3-8/59

SUBMITTED: March 25, 1957

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAMOV, Ya Ya

SHALAMOV, Ya. Ya. Cand Phys-Math Sci -- (diss) "Study of the interaction ~~between the~~ of positive pi-mesones and ~~the~~ light nuclei in ~~the field~~ energy range of 80 - 300 Mev ~~energies~~." Mos, 1958. 7 pp (Acad Sci USSR). 100 copies. (KL, 37-58, 110.)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SOV-120-58-1-5/43

AUTHORS: Blinov, G.A., Lomanov, M.F., Meshkovskiy, A.G., Shalamov, Ya.Ya. and Shebanov, V.A.

TITLE: A Large Freon Bubble Chamber (Bol'shaya puzyr'kovaya freonovaya kamera)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 1, 2 plates and pp 35-38 (USSR)

ABSTRACT: The working volume of the chamber described in the present paper is 17 litres and it works at room temperature at a pressure of 38 atm. A mixture of freon-12-freon-13, having a density of about 1.2 is used. The maximum path of particles in this chamber is 0.7 of the mean path between nuclear interactions. A diagram of the chamber is shown in Fig.1. The main body of the chamber is made of steel and the windows are covered by plexiglass plates, 9 cm thick and attached to the body of the chamber by steel flanges. A description is given of a device giving good pressure control. The chamber was used in the beam of the synchrocyclotron of the United Institute for Nuclear Studies. The beam employed was either the proton or the neutron beam, the maximum energy being 680 MeV. Fig.3 (facing p.34) shows a photograph of particles scattered from a paraffin target irradiated with 670 MeV protons. The following persons are thanked for their inter-

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SOV-120-58-1-5/43

A Large Freon Bubble Chamber.

est and collaboration: A. I. Alikhanov, V. A. Beketov, Yu. I. Makarov, M. G. Polikarpov, V. A. Shchegolev, V. P. Rumyantseva and Ye. V. Kuznetsov. There are 3 figures, 1 table and 8 references, of which 5 are English and 3 Soviet.

SUBMITTED: July 4, 1957.

1. Bubble chambers--Design 2. Bubble chambers--Materials
3. Methyl halides--Applications 4. Particles--Detection

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SOV/56-34-6-8/51

AUTHORS: Meshkovskiy, A. G., Shalamov, Ya. Ya., Shebanov, V. A.

TITLE: The Energy Spectra and the Angular Distribution of the Positive Pions Produced by 660 MeV Protons on Carbon (Energeticheskiye spektry i uglovoye raspredeleniye π^+-mezonov, obrazovannykh na uglerode protonami s energiyey 660 MeV)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 34, Nr 6, pp 1426-1433 (USSR)

ABSTRACT: This paper investigates the energy spectra and the absolute yields of the positive pions produced by 660 MeV protons on carbon for the angles 19°30', 29°, 38°, 56°, and 65° in the laboratory system. All the measurements were carried out by means of a pion spectrometer in the exterior proton beam of the synchrocyclotron of the Laboratoriya yadernykh problem Ob"yedinennogo Instituta yadernykh issledovaniy (Laboratory for Nuclear Problems of the United Institute for Nuclear Research). A table shows the results of the measurement of the differential cross sections $d^2\sigma_+/d\Omega\, dE$ for various observation angles and the energy spectra of the positive pions are

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SOV/56-34-6-8/51

The Energy Spectra and the Angular Distribution of the Positive Pions Produced by 660 MeV Protons on Carbon

demonstrated by some diagrams. An other table gives the cross sections $d\sigma_+/d\Omega$. The next part of this paper discusses the form of the spectra. The average energy of the positive pions in the system connected with the center of inertia practically does not depend on the departure angle and amounts to ~100 MeV. The cross section $d\sigma_+^*/d\Omega^*$

(in the system of the center of inertia) does not depend much on the angle in the interval 36 - 103°. An analogous result was also found for neutral pions (Ref 9). The above mentioned cross section may be estimated also by considerations basing on the principle of the isotopic invariance. The ratio $d\sigma_+/d\sigma_-$ depends only little on the angle and the yield of the negative mesons amounts only to 15 - 20 % of the positive meson yield. The last part of this paper compares the yields of the positive mesons produced on free and bound protons. The decrease (by 2 times) of the probability of the production of positive pions by p-p-collisions in a carbon nucleus with respect to the analogous probability for free p-p-collisions can be explained well by the absorption of protons in the nuclear matter,

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SOV/56-34-6-8/51

The Energy Spectra and the Angular Distribution of the Positive Pions Produced by 660 MeV Protons on Carbon

if the experimentally observed positive pions were produced on the nucleus surface. The authors thank Yu. D. Prokoshkin for the discussion of the results. There are 2 figures, 2 tables, and 15 references, 11 of which are Soviet.

SUBMITTED: January 13, 1958

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

AUTHORS: Meshkovskiy, A. G., Shalamov, Ya. Ya., Shebanov, V. A. SOV/56-35-1-8/59

TITLE: Energy Spectra and Angular Distribution of π^+-Mesons Produced in p-p Collisions at an Energy of 660 - 760 MeV (Energeticheskiye spektry i uglovoye raspredeleniye π^+-mezonov obrazovannykh v p-p-soudareniyakh pri energiyakh 660-670 MeV)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 1, pp 64 - 70 (USSR)

ABSTRACT: The authors give a report about investigations of p-p collisions at E_p = 670 MeV and compare their results with those obtained in earlier papers (Refs 1-7) by other Soviet authors. Sidorov (Ref 1) investigated p-p collisions at E_p = 660 MeV at 5 angles between 60 and 120°; Meshcheryakov et al. (Ref 2) investigated the π^+ spectrum at 24° by means of magnetic analysis; it was again Meshcheryakov et al. (Ref 3) who reported on the determination of the absolute π^+-yield at 29, 46, and 65° and the spectra at 29 and 46°; Neganov and Savchenko (Ref 4) investigated the energy spectrum of 4 angles between

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108 and 160° as well as the yield between 60 and 160° etc. In the present paper observations are carried out at 19°30', 38° and 56°, and E_{π^+} as well as the differential cross section $d^2\sigma/d\Omega dE$ are measured (results in tables 1 and 2 and in figures 1 and 2, all in c.m.s.). It was found that in the c.m.s. the shape of the π^+-spectrum for the $p+p \rightarrow p+n+\pi^+$ reaction depends on the angle of emission. For the angular distribution the formula

$$d\sigma^*/d\Omega^* = [(0,97 \pm 0,06)+(0,50 \pm 0,21)\cos^2\vartheta^*].10^{-27} cm^2 \text{ steradian}^{-1}$$

is obtained. The numerical results for the $6\vartheta^*$-values between 35 and 101° at E_p = 660 MeV are given in table 3. For the total cross section

$$\sigma_{pp}^{\pi^+} = (14,4 \pm 1,2).10^{-27} cm^2$$

is obtained. Figure 3 shows π^+-spectra at E_p = 660 MeV for 19°30', 29, 38,46 and 56°, which are compared with the result obtained by Meshcheryakov et al. (Ref 2) for 24°. In conclusion the authors thank V.P.Dzhelepov for the interest he displayed in this paper,

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Energy Spectra and Angular Distribution of π^+-Mesons SOV/56-35-1-6/59
Produced in p-p Collisions at an Energy of 660 - 760 MeV

and I.Yu.Kobzarev for having discussed the experimental results. There are 3 figures, 3 tables, and 7 references, all of which are Soviet.

SUBMITTED: February 24, 1958

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

24(5) SOV/56-35-4-7/52

AUTHORS: Blinov, G. A., Lomanov, M. F., Shalamov, Ya. Ya., Shebanov, V. A., Shchegolev, V. A.

TITLE: Investigation of the Interaction of π^+-Mesons With Light Nuclei in the Energy Range 80-300 MeV (Issledovaniye vzaimodeystviy π^+-mezonov s legkimi yadrami v oblasti energiy 80-300 MeV)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 4, pp 880-886 (USSR)

ABSTRACT: The investigations were carried out in a Freon bubble chamber (17 liters, 50.22.15 cm^3) for ten energy values in the range of 80-300 MeV; measurements were carried out, for the interaction between positive pions and C-, F-, and Cl-nuclei, of the charge-exchange scattering cross sections, of star production cross sections, and of total elastic and inelastic scattering cross sections. In the interval of 210-300 MeV the production of charged pions by π^+-mesons was observed in 6 cases. In transition from 80 to 200 MeV the exchange scattering cross section is doubled and attains 10% of the geometric nuclear cross section. The star production cross section has its maximum at about 180 MeV. Also 260 MeV proton interaction was investigated.

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Investigation of the Interaction of π^+-Mesons With Light Nuclei in the Energy Range 80-300 MeV SOV/56-35-4-7/52

A comparison of stars occurring in exchange scattering with stars occurring in the interaction between protons and C-, F-, and Cl-nuclei shows that exchange scattering in light nuclei occurs as a result of a single interaction of the inciding π^+-meson with the individual nucleon of the nucleus. Comparison of stars occurring in absorption with those produced by protons shows that within the energy interval investigated π^+-absorption is in general the result of a single interaction of the π^+-meson with a proton-neutron pair. In the case of 200 MeV π^+-mesons this process occurs in 60-70% of cases. The experimental order and the carrying out of the experiments is described in detail. Results are shown by diagrams and tables. Figures 2-4 show photographs of charge-exchange scattering processes. Figure 4 shows a typical case of a $\pi^0 + e^+ + e^- + \gamma$ reaction. For π^+-mesons the exchange scattering reactions with free nucleons develop according to the scheme $\pi^+ n \rightarrow \pi^0 p$, and the absorption ($E_{pion} < 100$ MeV) according to $\pi^+ + (pn) \rightarrow (pp)$. For the 6 cases of the generation of charged pions on F-nuclei a cross section

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Investigation of the Interaction of π^+-Mesons With Light Nuclei in the Energy Range 80-300 MeV SOV/56-35-4-7/52

of $(0.7 \pm 0.3) \cdot 10^{-27} cm^2$ was measured. The authors thank A. A. Tyapkin for discussing the results, V. P. Dzhelepov for making it possible to carry out the experiments, and V. P. Rumyantseva and K. A. Zaytsev for their assistance in evaluating measuring results. There are 7 figures, 3 tables, and 10 references, 5 of which are Soviet.

SUBMITTED: May 6, 1958

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

24(5)

AUTHORS: Lomanov, M. F., Meshkovskiy, A. G., Shalamov, Ya. Ya., Shebanov, V. A., Grashin, A. F.

SOV/56-35-4-8/52

TITLE: Bremsstrahlung of π-Mesons in Interaction With Nuclei (Tormoznoye izlucheniye π-mezonov pri vzaimodeystvii s yadrami)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 4, pp 887-893 (USSR)

ABSTRACT: Already in earlier papers the pion bremsstrahlung in the nuclear field of forces has been investigated theoretically by several authors (Refs 1-4, Landau, Pomeranchuk, Vdovin, Solov'yev). Solov'yev investigated pion bremsstrahlung at energies near the rest-energy of pions, and determined the bremsstrahlung cross section on the nucleon as being of the order of $10^{-28}cm^2$. For the pion bremsstrahlung on nuclear forces larger cross sections are obtained. In the present paper the authors report the discovery of a pion bremsstrahlung during the investigation of the interaction between positive pions and light nuclei in the energy range near rest energy. Experiments were carried out with the external π^+-meson beam of the synchrocyclotron

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of the Laboratoriya yadernykh problem Ob"yedinennogo instituta yadernykh issledovaniy (Laboratory for Nuclear Problems of the United Institute for Nuclear Research). The authors used a bubble chamber with a Freon mixture ($CClF_2 + CClF_3$). The γ-quanta of the bremsstrahlung were observed by means of the conversion effect on electron-positron pairs. (In this connection compare also the papers worked out by the authors in cooperation with Blinov and Shchegolev)(Refs 5, 6). Energy- and cross section measurements are here carried out for pion nuclear force bremsstrahlung in the energy range of $80 < E_{\pi^+} < 300$ MeV on C-, F-, Cl-nuclei, and results are compared with theoretical results. For the inelastic pion scattering on nuclei (processes

$$\pi^+ + A \rightarrow \pi^+ + \gamma + A' \text{ and } \pi^+ + A \rightarrow \pi^+ + \pi^0 + A'$$

where A and A' denote the initial- and final states of the nucleus respectively) and the same elastic processes, 20 cases of such a pion bremsstrahlung were found on 7000 plates (elastic + inelastic), and a cross section (on F-nuclei) of $(4.5 \begin{smallmatrix} +1.2 \\ -0.2 \end{smallmatrix}) \cdot 10^{-27} cm^2$ was determined. Among these 7000 pictures

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Bremsstrahlung of π-Mesons in Interaction With Nuclei SOV/56-35-4-8/52

3 cases of bremsstrahlung caused by π^+-absorption on the nucleus were ascribed to $\pi^+ + A \rightarrow \gamma + A'$, $\pi^+ + A \rightarrow \pi_0 + A'$) and in 2 cases the bremsstrahlung is ascribed to charge-exchange scattering of π^+-mesons on the nucleus ($\pi^+ + A \rightarrow \pi^0 + \pi^0 + A'$). Calculation of the cross sections was carried out in quasi-classical approximation, and good agreement with theoretical results was obtained. The authors thank I. Ya. Pomeranchuk for the interest he displayed in this work. There are 3 figures, 1 table, and 8 references, 6 of which are Soviet.

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21 (7) SOV/56-37-3-52/62

AUTHORS: Krestnikov, Yu. S., Meshkovskiy, A. G., Shalamov, Ya. Ya., Shebanov, V. A., Kobzarev, I. Yu.

TITLE: On the Decays $\mu \to e + \gamma$ and $\mu \to e + \nu + \bar{\nu} + \gamma$

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 3 (9), pp 873-875 (USSR)

ABSTRACT: From the hypothesis of the existence of an intermediate boson of great mass (universal A-V interaction) it follows that the decay $\mu \to e + \gamma$ is possible, which is forbidden according to A-V point interaction. Feynberg calculated the probability of this interaction and showed that the ratio $\varrho_1 = R(\mu \to e + \gamma)/R(\mu \to e + \nu + \bar{\nu})$ depends on the cut-off parameter Λ. If Λ is equal to the boson mass $\varrho_1 \approx 10^{-4}$, if $\Lambda < M$, it may become arbitrarily small. The authors of the present "Letter to the Editor" searched for the $\mu \to e + \gamma$ decays by means of a 17 liter freon bubble chamber. The chamber was located in the external π^+ beam of the synchrocyclotron of the OIYaI (Joint Institute of Nuclear Research). The 200 Mev π^+-mesons were slowed down by means of a graphite filter and were stopped in the chamber space. About 20000 stereophotographs

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were obtained, which were twice evaluated. The evaluation lines are given. Of the three possible decays $\mu \to e + \nu + \bar{\nu} + \gamma$, $\pi \to \mu + \nu + \gamma$, and $\mu \to e + \gamma$ not a single one of the third kind was found among 91000 π-μ-e decays. ρ_1 was determined as amounting to $\leq 4.3 \cdot 10^{-5}$. In the evaluation of the plates reactions of the first kind were found with $(e, \gamma) < 180^\circ$; such a photo is shown by figure 1. Such a decay has hitherto not been observed. A table shows all cases in which $E_\gamma \gtrsim 15 - 20$ Mev and in which the angle $(e, \gamma) \gtrsim 50 - 60^\circ$. The table contains data concerning the (e, γ)-angle, E_e and E_γ, as well as the energy of the decay products Q. For processes of the first kind it was found that Q = 105.2 Mev, for those of the second kind - 33.9 Mev. Figure 2 shows investigation results in form of a diagram, where the number of recorded pairs is plotted versus the angle of rotation in the muon stopping point. The ratio of the reactions $\rho_2 = R(\mu \to e + \nu + \bar{\nu} + \gamma)/R(\mu \to e + \nu + \bar{\nu})$ was determined as amounting to $\left(0.80 \begin{smallmatrix} +0.24 \\ -0.36 \end{smallmatrix}\right) \cdot 10^{-3}$.

Card 2/3 Theoretically, $1.02 \cdot 10^{-3} < \rho_2 < 1.80 \cdot 10^{-3}$ was obtained

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(for the A-V interaction). The authors finally thank Academician A. I. Alikhanov for his discussion and interest, M. F. Lomanov, Yu. I. Makarov, and V. I. Smetanina for their assistance, I. S. Bruk for making it possible to carry out computations on the electronic computer of the type M-2 of the Institut elektronnykh i upravlyayushchikh mashin AN SSSR (Institute for Electronic and Control Machines of the AS USSR), and R. A. Ioffe for carrying out these computations. There are 2 figures, 1 table, and 8 references, 1 of which is Soviet.

SUBMITTED: June 9, 1959

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

MESHKOVSKIY, A.G.; SHALAMOV, Ya.Ya.

Nonelastic reactions of π^+-mesons with light nuclei with energies from 80 to 300 MeV. Zhur.eksp.i teor.fiz. 37 no.4:978-982 O '59. (MIRA 13:5)
(Mesons) (Nuclear reactions)

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Shalamov, Ya. Ya.

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AUTHORS: Shalamov, Ya. Ya. and Shebanov, V. A.

TITLE: The Use of Xenon-Freon and Xenon-Propane Mixtures in Bubble Chambers

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No 3, pp 141-142

ABSTRACT: In their search for working substances having a high Z which can be used at room temperature and are not toxic or corroding, the present authors have carried out experiments designed to determine the characteristics of mixtures of xenon with various other substances used as the working liquid in bubble chambers. It was found that mixtures of xenon with freon-12 (CCl_2F_2) and xenon with propane (C_3H_8) were the most satisfactory. The mixtures were tested in a stainless steel chamber having a working volume of 44 cm^3. The characteristics of the mixtures found experimentally at a working temperature of 25°C are given in the following table.

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The Use of Xenon-Freon and Xenon-Propane Mixtures in Bubble Chambers

Mixture	Percentage Composition of Xe (by weight)	Saturation Vapour Pressure of the Mixture at 25°C	Density at 25°C	Radiation length, cm
1. Xe + CCl_2F_2	37.6	23.6	1.5	9.3
2. Xe+C_3H_8	65.0	24.6	0.96	12.0

The first mixture has a high density and a low radiation length. It is non-corrosive. The second mixture has a high density of the free hydrogen, reaching the liquid hydrogen density. Acknowledgments are made to Ye. V. Kuznetsov for discussions and to Yu. I. Makarov for assistance in this work. There are 1 table and 6 references, 1 of which is Soviet and 5 English.

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SHHL-MAPOV, Yu. V.

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B029/B077

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AUTHORS: Barmin, V. V., Krestnikov, Yu. S., Pershin, I. I., Ruzyantseva, V. P., Shalanov, Ya. Ya., Shebanov, V. A.

TITLE: The Asymmetry in the Decay of Λ^0 Hyperons Produced by Negative Pions With a Momentum of 2.8 Bev/c and Observed in a Freon Bubble Chamber

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 5(11), pp. 1229-1251

TEXT: The distribution of decay products of Λ^0 particles with respect to their production level is described by $W(\vec{f})\,d\vec{f} \sim (1 + \alpha\vec{P}\vec{f})\,d\vec{f}$; the asymmetry coefficient α denotes the degree of non-conservation of parity during the decay of Λ^0 particles; $\vec{P}$ denotes the average polarization of the hyperon over all directions of Λ^0, and the following relation is valid too: $\vec{f} = [[\vec{P}_{\pi prim} \cdot \vec{P}_{\Lambda}]\,\vec{P}_{\pi decay}] \cdot \vec{P}_{\Lambda}$. $\vec{P}_{\pi prim}$ and $\vec{P}_{\pi decay}$ are the unit vectors of the momenta of the Λ^0 particle, the primary and the "decay pions". In general, $\alpha\vec{P}$ is calculated from the formula $\alpha\vec{P} = 2(N_+ - N_-)/(N_+ - N_-)$.

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N_+ and N_- denote the number of pions leaving the production level in an upward or downward direction. The values of $\alpha\vec{P}$ at energies above 1 Bev permit conclusions about the polarization of Λ^0 hyperons produced at these energies. Therefore, the authors investigated the asymmetry in the decay of Λ^0 hyperons which were produced on light nuclei by negative pions with a momentum of (2.8 ± 0.5) Bev/c in a 17-liter Freon bubble chamber without a magnetic field. The measurements were made with a beam of negative mesons of the proton synchrotron of OIYaI (Joint Institute of Nuclear Research). For negative pions with a momentum of 2.8 Bev/c, Λ^0 particles were produced mainly according to the reaction $\pi^- + N \to \Lambda^0 + K + n\pi$, and a preliminary estimate yielded $\bar{n} \approx 1.5$. The first examination of about 60,000 stereophotos showed about 1200 "forks" at the end of pion tracks. 183 Λ^0 decays were selected, of which 165 refer to the production of Λ^0 particles by Freon (that is, by nuclei of C,F,Cl). 18 cases refer to production by a propane-xenon mixture, that is, by nuclei of H, C, Xe. The average momentum of the Λ^0 particles used for the measurement was 650 Mev/c in the laboratory system. Results of $\alpha\vec{P}$ measurement:

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APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

86893

The Asymmetry in the Decay of Λ^0 Hyperons Produced by Negative Pions With a Momentum of 2.8 Bev/c and Observed in a Freon Bubble Chamber

S/056/60/039/005/009/051
B029/B077

Filling material of the chamber	Total number of Λ^0 decays	Number of negative pions produced by the decay of a Λ^0 hyperon emitted upward	downward	on the producing level	$\alpha\bar{P}$
Freon	165	67	95	3	-0.3420.16
Xenon-propane	18	9	8	1	+0.1220.47
Total number of cases	183	76	103	4	-0.3020.15

The systematic errors are below 20%. The value of $\alpha\bar{P}$ is most likely negative during the decay of hyperons which gives rise to 3-Bev negative pions. This could be caused by the change of sign of the polarization during the transition from 1 Bev to higher energies of the negative pions produced. But the statistical accuracy of this investigation is not adequate for a definite statement. The authors thank A. I. Alikhanov, A. G. Meshkovskiy,

Card 3/4

86893

The Asymmetry in the Decay of Λ^0 Hyperons Produced by Negative Pions With a Momentum of 2.8 Bev/c and Observed in a Freon Bubble Chamber

S/056/60/039/005/009/051
B029/B077

and I. Yu. Kobzarev for a discussion of the results obtained, V.I. Veksler for making possible the experiments with the proton synchrocyclotron in Dubna, the operators of the synchrocyclotron, and several laboratory assistants of OIYaI. There are 1 table and 8 references: 2 Soviet and 6 US.

SUBMITTED: July 2, 1960

Card 4/4

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAMOV, Ya.Ya.; SHEBANOV, V.A.

Production of π^0-mesons in π^--P collisions with 2, 8 Bev./c π^--mesons. Zhur.eksp.i teor.fiz. 39 no.5:1232-1236 N '60. (MIRA 14:4)

(Mesons) (Protons)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

31799
S/056/61/041/006/053/054
B111/B104

24.6700

AUTHORS: Bayukov, Yu. D., Leksin, G. A., Shalamov, Ya. Ya.

TITLE: Wide-angle scattering of high-energy π-mesons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 6, 1961, 2016 - 2018

TEXT: Results obtained by Ya. Ya. Shalamov and V. A. Shebanov (Ref. 5: ZhETF, 39, 1232, 1960) from measurements of the total cross section of $\pi^- + p \rightarrow \pi^0 + n$ reactions were worked out anew. The cross section of π^0-mesons back-scattered into the angular space of 1 steradian is indicated as < 0.01 millibarn/sterad. The cross section of elastic charge exchange with a π^0-meson departing at an angle > 90° in the c.m.s. was found to be $\lesssim$ 0.002 millibarn/sterad. The scattering cross sections of π^--mesons back-scattered by protons according to $\pi^- + p \rightarrow \pi^- + p$ reactions are also indicated. The momentum of π^--mesons was 2.8 Bev/c. For angles > 90° in the c.m.s., σ < 0.03 millibarn/sterad was measured. I. Ya. Pomeranchuk and V. A. Shebanov are thanked for discussions. There are 1 figure and 6 references: 4 Soviet and 2 non-Soviet. The two

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

31799

Wide-angle scattering of high-energy. S/056/61/041/006/053/054
B111/B104

references to English-language publications read as follows: M. Gell-Mann, F. Zachariasen, Preprint, 1961; C. D. Wood et al. Phys. Rev. Lett. 6, 481, 1961

SUBMITTED: October 16, 1961

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAMOV, Ya.Ya.; SHEBANOV, V.A.; GRASHIN, A.F.

Generation of Y^0 (Λ, Σ^0)-hyperons and K^0-mesons on light nuclei by π^--mesons having a pulse energy of 2.8 Bev/c. Zhur. eksp. i teor. fiz. 40 no.5:1302-1312 My '61. (MIRA 14:7)

1. Institut teoreticheskoy i eksperimental'noy fiziki AN SSSR.
(Hyperons) (Mesons)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

BAYUKOV, Yu.D.; LEKSIN, G.A.; SUCHKOV, D.A.; SHALAMOV, Ya.Ya.; SHEBANOV, V.A.

Backward elastic scattering of 2.8 bev/c π^--mesons on neutrons.
Zhur.eksp.i teor.fiz. 41 no.1:52-55 Jl '61. (MIRA 14:7)

1. Institut teoreticheskoy i eksperimental'noy fiziki AN SSSR.
(Mesons--Scattering) (Neutrons)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

BAYUKOV, Yu.D.; LEKSIN, G.A.; SHALAMOV, Ya.Ya.

Elastic scattering of π^--mesons by 2.8 Bev./c neutrons.
Zhur.eksp.i teor.fiz. 41 no.4:1025-1030 O '61. (MIRA 14:10)

1. Institut teoreticheskoy i eksperimental'noy fiziki AN SSSR.
(Mesons--Scattering) (Neutrons)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

S/056/61/041/006/019/054
B102/B138

AUTHORS: Bayukov, Yu. D., Leksin, G. A., Shalamov, Ya. Ya.

TITLE: Investigation of the reaction $\pi^- + n \rightarrow \pi^- + n + m\pi^0$ with a beam of π^- mesons with a momentum of 2.8 Bev/c

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 6(12), 1961, 1787-1792

TEXT: The reaction $\pi^- + n \rightarrow \pi^- + n + m\pi^0$, m=1,2, was studied by means of a 50 cm long, 17-liter freon bubble chamber without magnetic field. The bombarding pions had a momentum of 2.8 ± 0.3 Bev/c. The gamma quanta arising in π^0 decay were recorded with quite high efficiency. From the stereophotographs taken 221 single-pronged stars were selected, representing pion interactions with quasi-free neutrons. Only in two cases was K^0 formation recorded, so strange particle formation could be neglected in evaluating the results. The gamma and pion angular distributions were measured and the multiplicity of the reaction was determined. Results: In the πN c. m. s. the angular gamma quantum distribution was anisotropic and

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B102/B138

Investigation of the reaction ...

asymmetric, the forward-to-backward ratio was 1.76 ± 0.30. In the laboratory system the angular μ^+ and π^- distributions coincided within the limits of statistical error. The anisotropy in π^- angular distribution increased with the energy of the π^- meson. The anisotropy in gamma distributions tended to decrease with increasing number of gamma quanta: 1.7±0.4 for stars with one quantum, 1.7±0.5 with two and 1.5±0.7 for stars with 3 - 5 μ^+-quanta. In the lab-system it was also greater for stars with $>41^\circ$ π^- emission angles than for $<41^\circ$. The mean efficiency of gamma recording was not dependent on the π^- emission angles, and was to 0.34 ± 0.02. From the contributions of the reactions with m = 1,2,3 the mean multiplicity of π^0 production was found to be 1.47±0.15. The multiplicity tends to increase with the π^- departure angle, and depends on the π^- momentum: 1.33±0.15 for $p_{\pi^-} > 300$ Mev/c and 1.71±0.12 for $p_{\pi^-} < 300$ Mev/c. The results are in good agreement with V. M. Maksimenko's statistical theory (Dissertatsiya, FIAN 1960). The anisotropy can be explained by assuming peripheral $\pi\pi$ interactions. Among others, V. S. Barashenko and V. A. Belyakov et al. (ZHETF, 39, 937, 1960) have indicated

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this possibility and Ya. Ya. Shalamov and V. A. Shebanov (ZhETF, 39, 1232, 1960) have used it to explain the anisotropy observed in $\pi^- + p \rightarrow n + m\pi^0$ reactions at 2.8 Bev. The authors thank Yu. S. Krestnikov, V. A. Shebanov, N. S. Khropov, M. U. Khodakova, V. A. Krutilina, Z. I. Pal'mina and Yu. S. Petrykin for assistance and N. G. Birger for discussion. There are 5 figures, 2 tables, and 11 references: 7 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: W. D. Wolker. Phys. Rev., 108, 852, 1957; L. C. Grote et al. Nucl. Phys. 24, 300, 1960; G. Maenchen, W. Fowler et al. Phys. Rev. 108, 850, 1957; R. C. Whitten, M. M. Block. Phys. Rev. 111, 1676, 1958.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences, USSR)

SUBMITTED: July 18, 1961

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

BAYUKOV, Yu.D.; LEKSIN, G.A.; SHALAMOV, Ya.Ya.

Large-angle scattering of high-energy π-mesons. Zhur. eksp. i teor. fiz. 41 no.6:2016-2018 D '61. (MIRA 15:1)
(Mesons--Scattering)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

37126

S/056/62/042/004/032/037
B125/B102

24.6610

AUTHORS: Shalamov, Ya. Ya., Grashin, A. F.

TITLE: Data on ππ-interaction pion production in πp-collisions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 4, 1962, 1115-1121

TEXT: The authors studied the multiple pion production modes

$$\pi^- + p \to \pi^- + \pi^0 + p, \quad (1),$$
$$\pi^- + p \to \pi^- + \pi^0 + \pi^0 + p, \quad (2),$$
$$\pi^- + p \to \pi^- + \pi^- + \pi^+ + p, \quad (3),$$
$$\pi^- + p \to \pi^- + \pi^- + \pi^+ + \pi^0 + p \quad (4)$$

with π^- momenta of 2.8 ± 0.3 Bev/c by means of a 17-liter propane-xenon bubble chamber to obtain information on ππ-interaction. The events on bound protons yield only a small contribution (20-30%). The angular and energy distributions are similar to those for hydrogen. The energy distribution of protons and the angular distribution of γ-quanta greatly differ from the spectra calculated with the statistical model. The mean

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proton energy is lower in the production of two than of three pions. Reaction (1) is a two-particle reaction as to its kinematic parameters. The neutral pions produced in the reactions (1) and $\pi^- + p \rightarrow \pi^0 + \pi^0 + n$ (5) keep the direction of the incident pion. The total cross section of the reaction calculated by the method of differences is $\sigma = 2.3 \pm 0.4$ mb for $10 \leqslant E_p \leqslant 200$ Mev, and $\sigma = 1.8 \pm 0.4$ mb for $10 \leq E_p \leq 100$ Mev. The total cross section of reaction (2) for $10 \leq E_p \leq 200$ Mev is $\sigma = 1.0 \pm 0.3$ mb. The hypothesis of the pole diagrams yielding a significant contribution to the cross section explains satisfactorily all experimentally observed properties of reactions (1), (2), (3), (5), and $\pi^- + p \rightarrow \pi^0 + \pi^0 + \pi^0 + n$ (6). Reaction (1) can be defined more accurately with the amplitude $\hat{A}(s,t) = A_p(s,t)\,\vec{\sigma}\vec{p} - B\vec{\sigma}\vec{p}_0$, where $A_p(s,t)$ is the pole amplitude, $t = -2m\mu_p$ the square transferred momentum, $\vec{p}_0$ and $\vec{p}$ the momenta of the incident meson and proton in the laboratory system, $\vec{\sigma}$ the Pauli matrix of the proton, m the proton mass. The angular distributions of the γ-quanta can also be explained by the pole approximation in a simple way. A. I. Alikhanov, I. Yu. Kobzarev, I. Ya. Pomeranchuk are thanked for discussion, V. I. Smetanina and V. A. Kutilina for assistance. There are 6 figures.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

The most important English-language references read as follows: J. A. Anderson, Vo. X. Bang, P. G. Burke, D. D. Carmony, N. Schmitz. Phys. Rev. Lett., 6, 365, 1961; Rev. Mod. Phys., 33, 431, 1961; A. R. Erwin, R. March, W. D. Walker, E. West. Phys. Rev. Lett., 6, 628, 1961; E. Pickap, D. K. Robinson, E. O. Salant. Phys. Rev. Lett., 7, 192, 1961; B. C. Maglico, L. W. Alwarez, A. H. Rosenfeld, M. L. Stevenson. Phys. Rev. Lett., 7, 178, 1961.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)

SUBMITTED: November 22, 1961

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

S/056/62/042/004/036/037
B102/B108

AUTHORS: Grashin, A. F., Shalamov, Ya. Ya.

TITLE: The spin of the ρ-meson

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 4, 1962, 1140 - 1141

TEXT: The authors have measured the c. m. s. π^- angular distribution in the reaction $\pi^- + p \rightarrow \pi^- + \pi^0 + p$, studied in previous work (ZhETF, 42, 4, 1121). The angular distribution can be described by a $\cos^2\vartheta^*$ curve and is similar to that obtained for π^- in π^0 production on quasifree protons. This fact indicates that the above reaction can be studied in collisions with nuclei. These distributions can be considered the first measurements of the resonance moments of two pions at $\approx 5\mu$ (J=1); this resonance can also be interpreted by the reaction $\pi^- + p \rightarrow \rho^{0,-} + (np) \rightarrow \pi^- + \pi^{+,0} + (np)$. The $\cos^2$-type distribution indicates that the ρ meson production takes place with zero spin projection upon the $J_z=0$ direction (peripheral

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collision). The mesons produced are emitted in a narrow forward cone ($\leq 15^{\circ}$ for p_0=2.6 Bev/c and $\leq 7^{\circ}$ for p_0=7.2 Bev/c) and the zero orbital angular momentum projection (l_z=0) is conserved. Also the spin of the nucleon remains unchanged. The law of conservation of total momentum projection upon the initial direction J_z=0. I. Yu. Kobzarev and L. B. Okun' are thanked for discussions. There are 2 figures.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki (Institute of Theoretical and Experimental Physics)

SUBMITTED: February 12, 1962

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

S/056/62/042/006/042/047
B104/B112

AUTHORS: Kuznetsov, Ye. V., Kuznetsov, Ye. P., Shalamov, Ya. Ya., Grashin, A. F.

TITLE: Experimental data on the existence of resonance in the $K^o\Lambda^o$ system at 1650 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 6, 1962, 1675-1677

TEXT: Previous papers (Ya. Ya. Shalamov et al., ZhETF, 40, 1302, 1962; I. A. Ivanovskaya et al., IX. Intern. Ann. Conf. on High Energy Physics, Kiev, 1960. Plenary sessions I-V, Moscow, 1960, p. 459) have shown that in the pair production of K^o and Λ^o particles by 2.8-Mev π^- mesons on complex nuclei (C, Cl, F), i.e., in the reaction $\pi^- + (A,Z) \rightarrow \Lambda^o + K^o + m\pi + (AZ)^*$ ($m = 1,2, \ldots$) (1), the angular distribution of the Λ^o particles in the center-of-mass system of πN is directed backward and that the angular distribution of the K^o particles is nearly isotropic. These angular distributions cannot be attributed to the production of $Y^* + K^o$, $Y^* + K^*$, or $\Lambda^o + K^*$ with the subsequent decay reactions

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$Y^* \rightarrow \Lambda^0 + \pi$ and $K^* \rightarrow K^0 + \pi$. The angular distributions are explained by assuming, in (1), the intermediate reaction $\pi^- + N \rightarrow Z^0 + m\pi$, where $m = 1, 2, \ldots$ and $Z^0 \rightarrow \Lambda^0 + K^0$. In the center-of-mass system, the Z^0 particle travels from πN to the rear hemisphere. Results: $M_Z \approx 1650$ Mev; strangeness $S = 0$; spin $I = 1/2, 2/3, \ldots$; isotopic spin $I = 1/2$. Z^0 interacts as an individual particle with the nucleus. There are 2 figures.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)
Fizicheskiy Institut im. P. N. Lebedeva AN SSSR (Physics Institute imeni P. N. Lebedev AS USSR)

SUBMITTED: March 24, 1962

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAMOV, YA. YA.

KUZNETSOV, Ye. V., SHALAMOV, Ya. Ya., and GRASHIN, A. F., KUZNETSOV, E. P.

"Evidence for the Resonances in $K^{\pm}\gamma(\gamma,\Lambda)$ Systems at 1650 and 1920 MeV."

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

Institute of Theoretical and Experimental Physics, Moscow, USSR (Kuznetsov, Shalamov, Grashin)

Lebedev Institute of Physics, Moscow, USSR (Kuznetsov, E.P.)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

GRASHIN, A. F. and SHALAMOV, Ya. Ya.

"The Resonances in Two-Pion System"

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

Inst. of Theoretical and Experimental Physics, Moscow, USSR

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

S/056/62/043/001/004/056
B181/B102

AUTHORS: Shalamov, Ya. Ya., Grashin, A. F.

TITLE: Data on $\pi\pi$-interaction collected in pion production through πp-collisions. II. Production of ρ^0-mesons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 1(7), 1962, 21 - 24

TEXT: The reactions $\pi^- + p \rightarrow \pi^- + \pi^+ + n$ and $\pi^- + p \rightarrow \pi^- + \pi^+ + n + m\gamma$ ($m = 1,2,\ldots$) with free or quasi-free protons in the C_3H_8 + Xe working mixture of a 17-liter propane-xenon bubble chamber were studied for initial π^- momenta of 2.8 ± 0.3 Bev/c. This study is the continuation of a previous publication (ZhETF, 42, 1115, 1962) on the reaction $\pi^- + p \rightarrow \pi^- + \pi^0 + p$ (ρ^--meson production). The angle $\theta_{\pi\pi}$ enclosed by the two mesons emitted was measured. Neglecting meson-neutron interaction, the measured pion angular distribution was converted into a mass spectrum with resonance peaks at $M_{\pi\pi} \approx 0.8$ Bev and ≈ 1.4 Bev. The distribution of the two pions of the first maximum was found to be $\sim \cos^2 \varphi_\pi^*$ in the c.m.s.

Card 1/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

Data on $\pi\pi$-interaction collected in ... S/056/62/043/001/004/056
B181/B102

The production of a vector ρ-meson, aligned along the original direction, proceeds under the same conditions. The second maximum has a virtually isotropic distribution. The probability of producing a mass of the two mesons of $0.35 \leqslant M_{\pi\pi} \leqslant 0.5$ Bev does not exceed a few percent of the total cross section of the process. There are 5 figures.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)

SUBMITTED: February 9, 1962

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

S/056/62/043/002/050/053
B108/B102

AUTHORS: Shalamov, Ya. Ya., Grashin, A. F.

TITLE: Experimental data on new pion resonances

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 2(8), 1962, 726-728

TEXT: The reaction $\pi^- + p \rightarrow \pi^- + \pi^0 + p$ with an initial pion momentum of 2.6 Bev/c was studied with the aid of a 17-liter xenon-propane bubble chamber. The mass spectrum showed resonances at $M_{\pi\pi} \approx 0.77$ Bev (corresponding to the ρ^--meson), $M_{\pi\pi} \approx 0.99$ Bev and ≈ 1.16 Bev (widths $\Gamma \approx 100$ Mev). The reaction $\pi^- + n \rightarrow \pi^- + \pi^- + p$ yielded four resonance peaks at approximately 0.59, 0.78, 0.98, and 1.2 Bev. If these peaks were really the result of $\pi\pi$ resonant interaction this would mean that bipion resonances at similar energies could be observed simultaneously for the isotopic spins I = 1 and I = 2. There are 2 figures.

Card 1/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

Experimental data on new pion ... S/056/62/043/002/050/053
B108/B102

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)

SUBMITTED: June 1, 1962

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

S/056/62/043/005/055/058
B125/B104

AUTHORS: Kuznetsov, Ye. V., Shalamov, Ya. Ya.

TITLE: The resonance types in a baryon system having the strangeness |S| = 1

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 5(11), 1962, 1979 - 1980

TEXT: Xenon and Freon bubble chambers were used to investigate the spectrum of mass defects determined from the K_1^0-meson in the reaction $\pi^- + N \rightarrow K^0(\bar{K}^0) + Y(K,N) + m\pi$ (m = 0,1,...). In examining the pictures only such stars were selected as were accompanied by V^0 events (that are correlated with the point of interaction). The momentum of the incident negative pions is 2.3 Bev/c. In this reaction the energy, momentum and effective mass m of the system $Y(K,N)+m\pi$ can be determined from the momenta of the K^0-meson and of the incident negative pion. The latter is assumed to collide with the bound quasi-free nucleon. The spectrum of the effective masses obtained from ~700 events of K_1-meson decays is shown in the Figure. The masses of the hyperons, and the resonances known at

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S/056/62/043/005/055/058
B125/B104

The resonance types in a...

present, are marked by arrows. The statistical guarantee for the newly observed maxima 1680, 1720, 1900 and 1960 Mev is small. According to the experimental data the K^0-mesons of the reaction $Z^0 \rightarrow K^0 + \Lambda + \gamma$ yield effective masses varying between 1.6 and 1.97 Bev, which values approach closely the maximum value $m^* = 1.97$ Bev. There is 1 figure.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki (Institute of Theoretical and Experimental Physics)

SUBMITTED: August 20, 1962

Card 2/3

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The resonance types in a...

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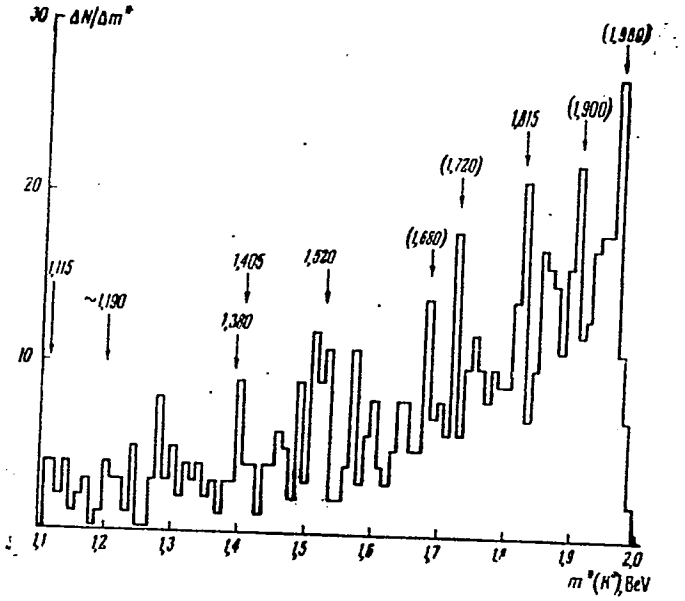
Figure. Distribution of the number of events with respect to the effective mass of the particle system Y(K,N)+mπ (m = 0,1,2)



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S/056/63/044/001/013/067
B108/B180

AUTHORS: Shalamov, Ya. Ya., Grashin, A. F.

TITLE: Data on three-pion interaction

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 1, 1963, 65 - 67

TEXT: The reaction $\pi^- + n \rightarrow \pi^- + \pi^- + \pi^0 + p$ with initial π^--meson momentum $p_0 = 2.8$ Bev/c was studied with a 17-liter bubble chamber filled with a freon mixture. Events of the type $\pi^- + n \rightarrow \pi^- + \pi^- + p + m\gamma$ ($m = 1,2,\ldots$), with the proton remaining in the working medium of the chamber, were chosen from the photographs (ZhETF, 42, 1115, 1962 and 43, 726, 1962). For $m = 1$ and $m = 2$, the distribution of the particles with respect to the mass M_π was calculated from the formula

$$M_\pi = \left[2p_0 p_p \cos\theta_p - (\omega_0 + m)E_p + \mu^2\right]^{1/2},$$

where ω_0 is the energy of the incident pion, m, p_p, E_p, and θ_p are the mass, momentum, kinetic energy, and angle of departure respectively, of

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Data on three-pion interaction

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the recoil proton. At $M_p \approx 0.45$, 0.63, 0.87, and 1.05 Bev three-pion resonances may exist for the isospin I = 2. There are 3 figures. The English-language references are: E. Pickup et al. Phys. Rev. Lett., 8, 329, 1962; B. Sechi Zorn. Phys. Rev. Lett., 8, 282, 1962.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki (Institute of Theoretical and Experimental Physics)

SUBMITTED: July 12, 1962

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

DEMIDOV, V.S.; ZHIZHIN, Ye.D.; KIRILLOV-UGRYUMOV, V.G.; PONOSOV, A.K.; SERGEYEV, F.M.; SHALAMOV, Ya.Ya.

Effect of the nucleus on π^0-meson production. Zhur. eksp. i teor. fiz. 45 no.3:437-442 S '63. (MIRA 16:10)

1. Institut teoreticheskoy i eksperimental'noy fiziki i Moskovskiy inzhenerno-fizicheskiy institut.
(Mesons) (Collisions (Nuclear physics)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

5

L 58953-65 EPF(c)/EWT(1)/EEC(t) Pi-4 IJP(c) GG/WW
ACCESSION NR: AT5010455 UR/3138/64/000/273/0001/0008

31
29
B+1

AUTHORS: Verebryusov, V. S.; Veselovskiy, G. S.; Grashin, A. F.; Demidov, V. S.; Kuznetsov, Ye. V.; Kuznetsov, Ye. P.; Ponosov, A.K.; Protasov, V. P.; Sergeyev, F. M.; Shalamov, Ya. Ya.

TITLE: Data on pp resonance with Q = 148 MeV

27

SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Institut teoreticheskoy i eksperimental'noy fiziki. Doklady no. 273, 1964, Dannyye o pp-rezonanse s Q = 148 Mev, 1-8

TOPIC TAGS: proton,proton resonance, diproton resonance, pion nucleon resonance, excitation energy

ABSTRACT: The authors present data on a possible new photon resonance with excitation energy 148 MeV. The photographs were obtained with a 17-liter bubble chamber filled with a freon mixture (without magnetic field), using the extracted beam of π^+ mesons of the OIYaI(Joint Institute of Nuclear Research) synchrocyclotron with energy E_0 = 80 MeV.

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Absorption of positive pions with formation of 1, 2, and 3 heavy particles (p, d, etc.) was investigated. The meson energy at the instant of absorption was 60 ± 20 MeV. Distributions of the event with production of two particles shows peaks at excitation energy values of 148 and 128 MeV. The same spectrum plotted for more symmetrical stars shows the 148 MeV peak more clearly. It is shown that the spectra can contain, besides the distribution with respect to the diproton mass, also components due to pd, dd, and similar stars, which can be mistaken for pp stars. The 128-MeV peak may be due to the presence of pd stars. The results indicate the possible existence of a diproton resonance with excitation energy 148 ± 3 MeV and width ~5 MeV, and also a pd resonance with approximate excitation energy 143 ± 3 MeV and width ~5 MeV. Such resonances could be observed in the presence of πN resonance with mass 938 ± 150 MeV, producing 'hypernuclei' by interacting with other nucleons. Work on a direct observation of the possible new πN resonance is continuing. 'The authors thank I. A. Alikhanov for a discussion of the results.' Original article has: 2 figures

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ACCESSION NR: AT5010455

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki GKAE (Institute of Theoretical and Experimental Physics, GKAE)

SUBMITTED: 01Aug64 ENCL: 00 SUB CODE: NP

NR REF SOV: 001 OTHER: 002

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

VESELOVSKIY, G.S., GRASHIN, A.F., DEMIDOV, V.S.; KUZNETSOV, Ye.V. [deceased]; KUZNETSOV, Ye.F.; PONOMOV, A.K., PROTASOV, V.F.; SERGEYEV, F.M.; SHALAMOV, Ye.Ye.

Production of slow π^--mesons on light nuclei, and $\pi\pi$-interaction. Izd. fiz. 2 no.3:496-500 S '65. (MIRA 18:9)

1. Institut teoreticheskoy i eksperimental'noy fiziki Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAMOVA, D., inzh.

Effectiveness of the brigade system of servicing the Amur River beacons. Rech. transp. 21 no.10:52-53 O '62. (MIRA 15:10)

1. Khabarovskiy tekhnicheskiy uchastok.

(Amur River—Beacons)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

KAZIYEV, M.; AZIZBEKOVA, P.; TAIR-ZADE, N.; GUSEYNOV, A.; GADZHINSKIY, D.; MAMEDOV, R.; DADASH-ZADE, A.; SHALAMOVA, L.; ABILOVA, G., red.; VARYNTSYAN, I., red.izd-va; AGAYEVA, Sh., tekhn.red.

[The Azerbaijan; historical and noteworthy places] Azerbaidzhan; istoricheskie i dostoprimechatel'nye mesta. Pod obshchei red. M.A.Kazieva. Baku, 1960. 146 p. (MIRA 13:4)

1. Baku. Muzey istorii Azerbaydzhana.
(Azerbaijan--Description and travel)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

GUSHCHIN, G.P.; TANYGINA, I.I.; SHALAMYANSKIY, A.M.

Ozone measurements at Karadag (Crimea) during the total solar eclipse o February 15, 1961. Trudy GGO no.141:72-79 '63. (MIRA 17:4)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALANIN, P.D.

From Moscow to Ilovaiskoye without changing the locomotive. Elek.i tepl.tiaga 6 no.1:21 Ja '62. (MIRA 15:1)

1. Pomoshchnik mashinista depo Moskva-Passazhirskaya.
(Locomotives--Performance)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

TSAREV, B.P., inzh.; STASENKO, I.K., inzh.; SHALANIN, P.D., inzh.; SOKOLOV, P.P., inzh.; TITOV, R.P., inzh.; YAKOBSON, R.V., kand.tekhn.nauk; TITOV, S.N., kand.tekhn.nauk

Determining consolidated material consumption norms for locomotive and car repairs. Vest. TSNII MPS 20 no.6:62-64 '61. (MIRA 14:10)

(Railroads--Repair shops)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

KABENIN, N.G., kand.tekhn.nauk; STASENKO, I.K., inzh.; SHALANIN, P.D., inzh.

Methods for establishing expenditure norms for wheel pair parts in locomotive repair. Vest. TSNII MPS 22 no.2:35-39 '63. (MIRA 16:4)

(Locomotives—Maintenance and repair)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALANIN, V.P.

Simplified and accelerated system for the regulation of electromagnetic speedometers. Elek. i tepl. tiaga 7 no.10:21 O '63. (MIRA 16:11)

1. Starshiy master laboratorii otdeleniya elektrifikatsii Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

KOSHTOYANTS, Kh.S.; SHALANKI, Ya.

Data on the physiological basis of periodical activity in the Anodonta [with summary in English]. Zhur.ob.biol. 19 no.3:212-216 My-Je '58. (MIRA 11:6)

1. Moskovskiy gosudarstvennyy universitet im. Lomonosova. Kafedra fiziologii zhivotnykh.
(PERIODICITY) (POTASSIUM--PHYSIOLOGICAL EFFECT)
(LAMELLIBRANCHIATA)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAMKI, Yanosh, Cand of Bio Sci -- (diss) "Physiological and Biochemical Analysis of the Periodic Activity of Edentate," Moscow, 1959, 12 pp (Moscow State Univ im Lomonosov; Chair of Animal Physiology) (KL, 2-60, 112)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALANKI, Ya. (Vengriya, Debretsen, institut fiziologii)

Relation between the slow rhythm of periodical activity of Anodonta cygnea and the state of sulfhydryl groups in protein bodies. Zhur. ob. biol. 21 no.3:229-232 My-Je '60. (MIRA 13:7)

1. Department of Animal Physiology, Moscow State University.
(MERCAPTO GROUP) (LAMELLIBRANCHIATA)
(ANIMAL MECHANICS)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

LISHSHAK, K. [Lisnák, K.], akademik; SHALANKI, Ya. [translator]

Some problems in neuro-endocrinic regulation of behavior. Zhur. ob.biol. 20 no.4:276-284 Jl-Ag '59. (MIRA 12:11)

1. Vengerskaya Akademiya nauk i Meditsinskiy universitet, g.Pech (for Lishshak).
(HORMONES) (ANIMALS, HABITS AND BEHAVIOR OF)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

FLERKO, B. (g. Pech); SHALANKI, Ya. [translator]

International symposium in Tihany (Hungary) devoted to the system hypothalamus - hypophysis and neurohormones. Usp.sovr.biol. 47 no.1:126-130 Ja-F '59. (MIRA 12:2)

(TIHANY, HUNGARY--ENDOCRINOLOGY--CONGRESSES)
(HYPOTHALAMUS)
(PITUITARY BODY)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALANKI, Ya.

Data on the peripheral regulation of slow rhythm of periodical activities of Anodonta. Fiziol. zhur. 47 no.9:1194-1198 S '61. (MIRA 14:9)

1. From the Department of Physiology, M.V.Lomonosov University, Moscow.

(PERIODICITY)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAPENAK, A.S.

Snout beetle species of the genus Apion occurring in the crowns of trees and shrubs in White Russia. Vestsi AN BSSR. Ser.biial. nav. no.2:92-101 '60. (MIRA 13:7)
(WHITE RUSSIA--WEEVILS) (FOREST INSECTS)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAPENOK, Ye.S.

Distribution of Protapion flavipes Payk in different habitats. Nauch. dokl. vys. shkoly; biol. nauki no.2:30-33 '58. (MIRA 11:10)

1.Predstavlena kafedroy zoologii Belorusskogo gosudarstvennogo universiteta imeni V.I. Lenina.
(Seed weevil)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAPENOK, Ye.S.

Effect of climatic factors on the development of the willow-seed weevil (Eutrichapion minimum Hbst., Coleoptera, Curculionidae). Dokl.AN BSSR 3 no.9:387-389 S '59. (MIRA 13:2)

1. Predstavleno akademikom AN BSSR T.N.Godnevym.
(Weevils)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAPENOK, Ye.S.

Food specialization and distribution on forage plants of the yellow-legged clover seed weevil (Protapion flavipes Rayk.). Dokl.AN BSSR 4 no.4:181-183 Ap '60. (MIRA 13:10)

1. Belorusskiy gosudarstvennyy universitet im. V.I.Lenina. Predstavleno akademikom AN BSSR T.N. Godnevym.
(Seed weevil)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAPENOK, Ye.S.; ROMASHOV, D.D.

Weevils of the genus Apion (Coleoptera, Curculionidae) inhabiting the crowns of trees and shrubs in Moscow Province. Zool. zhur. 39 no.9:1350-1361 S '60. (MIRA 13:9)

1. Belorussian State University, Minsk and Zoological Museum of Moscow State University.
(Moscow Province--Weevils) (Forest insects)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAPENOK, Ye. S.

Cand Biol Sci - (diss) "Snout beetles of the Apion variety inhabiting the crowns of trees in Belorussia." Minsk, 1961. 16 pp with diagrams; (Academy of Sciences Belorussian SSR, Inst of Biology); 220 copies; price not given; (KL, 5-61 sup, 186)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAPENOK, Ye.S. [Shalapionak, Ye.S.]; TROSHINA, S.A. [Troshyna, S.A.]

Population dynamics and feeding habits of clover seed weevil. Vestsi AN BSSR. Ser. biial. nav. no.2:95-100 '65. (MIRA 18:12)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

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[illegible] in [illegible] of Moldavia. Bibl. [illegible] vod. Mold. (MIRA 18:10)
[illegible] '64.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAR', V.M.

Studying the phytoplankton in Dubossary Reservoir. Trudy Inst. biol.Mold.fil.AN SSSR 2 no.1:25-34 '60. (MIRA 16:4)
(DUBOSSARY RESERVOIR--PHYTOPLANKTON)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAR', V.M.

Species of phytoplankton in the reservoirs of Moldavia. Izv.AN Mold. SSR no.4:87-106 '62. (MIRA 18:1)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALAR, V.M.

Effect of some ecologic factors on the development and distribution of phytoplankton in Dubossary Reservoir. Vop. ekol. 5:244-245 '62. (MIRA 16:6)

1. Institut biologii AN Moldavskoy SSR, Kishinev.
(Dubossary Reservoir—Phytoplankton)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

BYZGU, S.Ye., mlad. nauchn. sotr.; DYMCHISHINA-KRIVENTSOVA, T.D., mlad. nauchn. sotr.; NABEREZHNYY, A.I., kand. biol. nauk; TOMNATIK, Ye.N., kand. biol. nauk; SHALAR', V.M., mlad. nauchn. sotr.; YAROSHENKO, M.F., doktor biol. nauk;

[Dubossary Reservoir; development and piscicultural significance] Dubossarskoe vodokhranilishche; stanovlenie i rybokhoziaistvennoe znachenie. [By] S.E.Byzgu i dr. Moskva, Nauka, 1964. 228 p. (MIRA 18:3)

1. Chlen-korrespondent Akademii nauk Moldavskoy SSR (for Yaroshenko).

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALASHILIN, I. Ye.

27830. Shalashilin , I. Ye. Pobeda sotsialisticheskogo khlopkovodstva v uzbekistane. Trudy in-ta Ekonomiki (Akad. Nauk Uzb. SSR), Vyp. 2, 1949, s. 3-23.

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

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

BUDNIK, G.I., kand.ekon.nauk; AVDAKOV, Yu.K., dotsent, kand.ekon.nauk; SARYCHEV, V.G., kand.ekon.nauk; PREOBRAZHENSKIY, A.A., kand. istor.nauk; AVDAKOV, Yu.K., dotsent, kand.ekon.nauk; POLYANSKIY, F.Ye., prof., doktor istor.nauk; ZUTIS, Ya.Ya. [Zutis, J.]; GULANYAN, Kh.G., prof., doktor ekon.nauk; GULANYAN, Kh.G., prof., doktor ekon.nauk; KONYAYEV, A.I., dotsent, kand.ekon.nauk; KHROMOV, P.A., prof., doktor ekon.nauk; SHALASHILIN, I.Ye., dotsent, kand.ekon.nauk; SHEMYAKIN, I.N., dotsent, kand.ekon.nauk; POGREBINSKIY, A.P., prof., doktor ekon.nauk; ORLOV, B.P., dotsent, kand. ekon.nauk; TYUSHEV, V.A., kand.ekon.nauk; BALASHOVA, A.V., kand. ekon.nauk; MOZHIN, V.P., kand.ekon.nauk; MINDAROV, A.T., dotsent, kand.ekon.nauk; SHIGALIN, G.I., prof., doktor ekon.nauk; GOLUBNICHIY, I.S., prof., doktor ekon.nauk; VOSKRESENSKAYA, T., red.; BAKOVETSKIY, O., mladshiy red.; MOSKVINA, R., tekhn.red.

[History of the national economy of the U.S.S.R.; lecture course] Istoriia narodnogo khoziaistva SSSR; kurs lektsii. Moskva, Izd-vo sotsial'no-ekon.lit-ry, 1960. 662 p. (MIRA 13:5)

1. Deystvitel'nyy chlen AN Latviyskoy SSR (for Zutis).
(Russia--Economic conditions)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

ACCESSION NR: AP4041422 S/0179/64/000/003/0132/0137

AUTHOR: Shalashilin, V. I. (Moscow)

TITLE: Design of corrugated shells

SOURCE: AN SSSR, Izv. Mekhanika i mashinostroyeniye, no. 3, 1964, 132-137

TOPIC TAGS: corrugated shell, anisotropic shell, corrugated shell buckling, corrugated shell design, axisymmetrical deformation, axially asymmetrical deformation

ABSTRACT: The design of shallow shells made of a corrugated material is reduced to the design of equivalent anisotropic plain shells which will deform identically under identical conditions of loading. It is assumed that the length and height of the corrugation wave are small in comparison with the radius of the middle surface of the shell, that the direction of corrugation coincides with one of the principal curvatures of the shell, and that the Kirchhoff-Love hypothesis is valid. The system of equations of a shallow shell, obtained by

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transformation of equations for equilibrium and for continuity of deformations, is used to determine the upper buckling load of a cylindrical shell with longitudinal corrugation under axial compression by uniform continuous loading on shell faces in cases of axially symmetrical and asymmetrical deformations. Orig. art. has: 3 figures and 45 formulas.

ASSOCIATION: none

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SUB CODE: AS	NO REF SOV: 002	OTHER: 001

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L 61810-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/EWP(k)/EWA(h) Pf-4/Peb WW/EM

ACCESSION NR: AP5016237 UR/0373/65/000/003/0131/0135

28
B

AUTHOR: Shalashilin, V. I. (Moscow)

TITLE: Stability and above-critical deformation of longitudinally corrugated cylindrical shells

SOURCE: AN SSSR. Izvestiya. Mekhanika, no. 3, 1965, 131-135

TOPIC TAGS: cylindrical shell, corrugated shell, shell deformation, shell stability/ EVTsM BESM 2M digital computer

ABSTRACT: Previous work of the author (K raschetu obolochek, vypolnenykh iz gofrirovannogo materiala. Izv. AN SSSR, Mekhanika i mashinostroyeniye, 1964, No. 3) on corrugated shells was extended to the case of above-critical deformation of longitudinally corrugated shells, and the lower critical loads were evaluated. As in previous work (above reference) the corrugated shell was replaced by an equivalent anisotropic smooth shell and Hook's law, continuity of deformations and the potential energy of deformation were derived as a function of the load function and deformation function. After reviewing the different deformation functions assumed in the literature, the P. G. Burdin function (A. S. Vol'mir, Ustoychivost' uprugikh sistem. Fizmatgiz, 1963) in the form $w = f_0 + f_1 \sin Mx \sin Ny + f_2 \sin^2 Mx, \quad M = \frac{m\pi}{L}, \quad N = \frac{n}{R}$

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was assumed in this treatment. For the case of uniform end load p^o and external pressure q^o, the work performed by the load forces p^o (W_1) and the pressure forces $q^o(W_2)$ in deforming the shell was evaluated, and the energy of the shell was then expressed as $\vartheta^o = U - W_1 - W_2$ (where U = potential energy of deformation found by using the assumed deformation function and appropriate stress function). After nondimensionalizing, the equations for $p = p^oR/Eh$ were found as a function of $\zeta = \frac{f_1}{h}$, $\xi = \frac{f_2}{h}$, $\vartheta = \left(\frac{M}{N}\right)^2$, $\eta = \frac{n^2h}{R} = N^2Rh$. A digital computer (EVTsM BESM-2M) was used to determine the minimum p which was found to be 0.186 for a smooth shell (which is in agreement with Burdin's results). It was found that for sinusoidal corrugations the critical load was almost independent of H/h and R/h and was in the range 0.165-0.19 (for R/h = 240, R/H = 30, ℓ/h = 16.1). It was also found that corrugated shells become more desirable weight-wise (i.e., $p/k > p_o$ where p_o = 0.18, k_1 = ratio of profile length of corrugation to length of equivalent smooth shell) only for short shells. Orig. art. has: 4 figures and 19 formulas.

ASSOCIATION: none

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ACCESSION NR: AP5016237

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TRUBNIKOV, V.P.; CHERMAN, M.S.; SHALASHINA, M.I.; SHARAFUTDINOV, R.Kh.; MAKHMUDOV, M., red.

[I am enchanted by you, Uzbekistan!] Uzbekiston - bizni maftun etdi. Toshkent, Uzdavnashr, 1964. 137 p. [In Uzbek] (MIRA 17:11)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALASHNIKOV, A.N., inzh.

Substituting end ring packings for stuffing boxes. Khim.mashinostr. no.2:38-39 Mr-Ap '64. (MIRA 17:4)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

SHALASHOV, F.V.

Organization of routine inspection and repair of automatic communication lines with continuous operation of apparatus. Vest.sviazi 14 no.2:21-23 F '54. (MLRA 7:5)

1. Glavnyy inzhener Kiyevskogo tsentral'nogo telegrafa.
(Kiev--Telegraph) (Telegraph--Kiev)

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[illegible], [illegible].V.

Automatic switching-in of a distortion meter into telegraph channels. Vest.sviazi 19 no.6:31 Je '59. (MIRA 10:8)

1. Glavnyy inzhener Biyskogo tsentral'nogo telegrafa.
(Telegraph--Apparatus and supplies)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001548410014-3

[illegible]

AUTHORS: Shalashov, F.V., Chief Engineer Livshit, Ye.A., Laboratory Engineer

TITLE: The Practice of Using Telegraph Communications Without a Transmission Regulating Apparatus (Opyt ekspluatatsii telegrafnykh svyazey bez kontrol'nogo apparata peredach). In the Kiyev Central Telegraph Office (Na Kiyevskom tsentral'nom telegrafe)

PERIODICAL: Vestnik svyazi, 1958, Nr [illegible], pp 24-25 (USSR)

ABSTRACT: The authors discuss the advantages of the method of transmitting telegrams without transmission regulation. For the purposes of checking the accuracy of their telegraph service, periodic ten-minute checks of the various operators are made with a pick up which may be plugged into any of the telegraph transmitting benches. The receiving channel is also checked with an ELS-2 electronic distortion meter which can also be used for evaluating the transmitter operation. A study of telegrams dispatched from the Kiyev office revealed that the number of mistakes has gradually decreased since the introduction of this system; in the ultimate analysis, accuracy rests with the efficiency of the operator.

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111-58-7-16/27

The Practice of Using Telegraph Communications Without a Transmission Regulating Apparatus In the Kiyev Central Telegraph Office

There is 1 table.

ASSOCIATION: Kiyevskiy tsentral'nyy telegraf (Kiyev Central Telegraph Office)

1. Telegraph systems--Operation 2. Monitors--Applications

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SHCHEKIN, G.A.; PAVLOV, A.V., inzh.; DRUKKER, Ye.M.; GERKULESOV, A.D.; SHALASHOV, F.V.; LIVSHIT, Ye.A., inzh.

Operation of telegraph communications without control apparatus. Vest. sviazi 18 no.7:22-25 Jl '58. (MIRA 11:9)

1.Nachal'nik laboratorii Leningradskogo tsentral'nogo telegrafa (for Shchekin). 2.Laboratoriya Leningradskogo tsentral'nogo telegrafa (for Pavlov). 3.Nachal'nik sluzhby magistral'nykh svyazey Leningradskogo tsentral'nogo telegrafa (for Drukker). 4.Pomoshchnik nachal'nika smeny Leningradskogo tsentral'nogo telegrafa (for Gerkulesov). 5.Glavnyy inzh. Kiyevskogo tsentral'nogo telegrafa (for Shalashov). 6.Laboratoriya Kiyevskogo tsentral'nogo telegrafa (for Livshit).
(Telegraph)

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SHALASHOV, F.V.; TISHCHENKO, O.D.

Contribution of the efficiency promoters of the Kiev telegraph to the seven year plan. Vest. sviazi 21 no.8:29-30 Ag '61. (MIRA 14:9)

1. Glavnyy inzhener Kiyevskogo tsentral'nogo telegrafa (for Shalashov). 2. Inzhener po ratsionalizatsii Kiyevskogo tsentral'nogo telegrafa (for Tishchenko).
(Kiev--Telegraph--Employees)

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