verter circuits using transistors. Special attention is given to the operation and design of inverter circuits with a signal generator. There are no references.

B.N. Kononov. Voltage Stabilizers Using Semiconductor Devices 215
The author discusses voltage stabilizing circuits using silicon crystal diodes and transistors. He also explains equations for series and feedback stabilization and discusses transistor stabilizing circuits with temperature compensation. There are 4 references of which 1 is Soviet and 3 English.

AVAILABLE: Library of Congress

JP/sfm
5-26-59

21.1910

S/089/60/008/06/01/021
B006/B063 82302

AUTHORS: Feynberg, S. M., Konobeyevskiy, S. T., Dollezhal', N. A., Yemel'yanov, I. Ya., Tsykanov, V. A., Bulkin, Yu. M., Zhirnov, A. D., Filippov, A. G., Shchipakin, O. L., Kartil'yev, V. P., Samoylov, A. G., Ageyenkov, V. I.

TITLE: The CM(SM) Research Reactor With a Capacity of 50 Mw 19

PERIODICAL: Atomnaya energiya, 1960, Vol. 8, No. 6, pp. 495-504

TEXT: The present article gives a detailed description of the Russian 50-Mw research reactor which has a neutron flux of $2.2\cdot10^{15}$ n/cm²sec. It is used both for research work in nuclear physics and reactor engineering; obtaining of new transuranic elements, testing of fission and building materials under neutron and gamma bombardment, within the temperature range 20°K - 2000°C, and in various media; spectrometric examination of intermediate neutrons; examination of the gamma spectrum of the (n,γ) reaction; examination of short-lived isotopes and neutron diffraction analyses. The authors first discuss some characteristic data.

Card 1/5

The water-cooled, reflected reactor works with U^{235} enriched to 90%. The critical mass (without the experimental holes) is 7.3 kg of U^{235}, and including the experimental holes, it amounts to 9.5 kg (loading: ~11.7 kg). The maximum heat flow from the fuel element attains $5.5\cdot10^{6}$ kcal/m².h; the surface temperature does not exceed 195°C. Fig. 1 shows the distribution of the neutron flux in the cross section of the reactor; the flux has two maxima, one in the center of the cooling-water cavity ($2.2\cdot10^{15}$), and the other in the lateral reflector ($5\cdot10^{14}$ n/cm²sec). The flux/power ratio is $4.4\cdot10^{10}$ n/cm².sec.kw. With a 25% submersion depth of the fuel elements, the reactor can be in continuous operation for a period of 60-65 days. Several details are dealt with next. Experimental holes: The reactor has five horizontal and fifteen vertical holes. The horizontal ones are in the central part of the active zone, whose longitudinal and cross sections are shown in Figs. 2,3. At the output of the holes the neutron flux amounts to $\sim3\cdot10^{10}$ n/cm²sec. The vertical holes are located in the reflector with the exception of the central ones. Three of them serve for obtaining transuranic elements (one of these being in the center), two low-temperature holes serve for metal

Card 2/5

tests, two high-temperature holes for the testing of fuel elements, chemical analyses of the cooling water, and corrosion tests. All of these holes are water-cooled. Furthermore, five gas-cooled holes serve for testing fission and building materials in the range of 0 - 600°C; one hole (cooled with helium gas or liquid H_2) serves for material tests at low temperatures; one gas-cooled hole for material tests at ~2000°C; one hole cooled with liquid metal (1000°C) for testing fuel elements and coolants. Construction: The following demands were made on construction: creation of a small active zone that would withstand high thermal loads for a long time, and its cooling; application of a maximum number of experimental holes (their distribution is shown in Fig. 3); possible exchange of fuel assemblies without pressure drop. Figs. 2-5 illustrate particulars of the construction. Reactor body and cover: Fig. 2 is described. The cylindrical part is made of 36 mm thick stainless steel of the grade 1X18H9T (1Kh18N9T). The reflector consists basically of beryllium oxide; it is made up of blocks comprising about 65 different types, which are enclosed by steel plates on top and at the bottom. Fuel element assemblies: The element itself has the shape of a plate with a

Card 3/5

The CP-5(SW) Research Reactor With a S/089/60/008/06/01/021
Capacity of 50 Mw B006/B063 B202

core, pressed from uranium oxide powder and electrolytic nickel; the core is contained in a nickel can. Fig. 6 shows a section through the assembly, Fig. 7 another through a fuel element. Data of one such element are compiled in Table 2; it contains 12.5 g U235. The cylindrical body shield (Fig. 1) divides the inner reactor cavity into two rooms. The functions of this shield are briefly discussed, and the cooling water circulation is described next. The control system is described in greater detail. This system consists of two automatic regulators with two regulation rods each, four safety rods which can also be used as shim rods. The automatic regulation is operated by 13 ionisation chambers located outside the reactor body; it covers the power range from 0.5 to 100%. Several details concerning safety and shim rods are thoroughly discussed. Reactor shield: Fig. 8 shows a cross section through reactor plus shield. The latter consists of steel and heavy concrete. A few details are described, and the process of fuel extraction is briefly dealt with. The cooling system is finally discussed. It consists of four closed, separate loops. The water is kept flowing by circulating pumps (500 t/h, 10 atü); the heat exchange power is 15 Mw.

Card 4/5

There are 8 figures and 1 [illegible] reference.

SUBMITTED: March 15, 1960

Card 5/5

21227

S/142/61/004/001/006/008
E140/E163

9.7100

AUTHOR: Filippov, A.G.

TITLE: Unsaturated transistor pulse amplifier for digital computers

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1961, Vol.4, No.1, pp. 77-83

TEXT: The author finds the following basic requirements for pulse amplifiers used in digital computers: 1) high-power gain; 2) standardized output pulse amplitude for variable input pulse amplitude; 3) maintenance of correct pulse width; 4) independence of pulse duty cycle - identical operation for individual pulses or pulse trains. Amplifiers described in Western literature (Refs. 1-4) show in varying degrees the following defects: broadening of the pulse, low-power gain, circuit complexity. The author proposes a circuit with nonlinear autotransformer feedback, and reports the experimental results of a comparison between the performance of this circuit and other circuits known from the literature. The proposed circuit is shown in Fig.1. The essential feature is the presence of the autotransformer and the diode Д.

Card 1/3

This forces a negative potential at the collector, regardless of input signal. This ensures nonsaturating operation, and standardized pulse output. The following parameters of the circuit were measured in comparison with the other known circuits, using drift transistor type П402 (P 402) and diode Д10 (D 10). 1) pulse duration as function of input pulse amplitude, load current and generator impedance; 2) output pulse amplitude as function of load current; 3) power gain; 4) input current as function of input pulse amplitude; 5) temperature dependence of the more important parameters. The scatter of characteristics with change of transistor was also examined. The experimental curves published indicate that the present circuit is the most satisfactory. There are 8 figures, 2 tables and 4 English references, which read as follows:

Ref.1: G.J. Prom, R.L. Crosby. Junction Transistor Switching Circuits for High-speed Digital Computer Applications. IRE Trans. 1956, EC-5, No.4, 192.

Ref.2: G.W. Both, T.P. Bothwell. Logic Circuits for a Transistor Digital Computer. IRE Trans. 1956, EC-5, No.3, 132.

24227

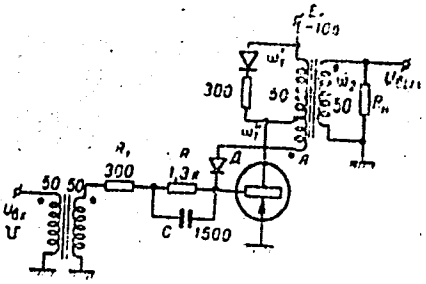
Unsaturated transistor pulse S/142/61/004/001/006/008
E140/E163

Ref.3: J.N. Barry, D.M. Leakey. Transistorized Pulse Amplifier. Electronic and Radio Engineer, 1959, V.36, No.6, 200.
Ref.4: I. Krajewski. Transistor Circuits for a 1 Mc/S Digital Computer. Electronic Eng., 1959, V.31, No.377, 403.

ASSOCIATION: Kafedra elektroniki, Moskovskogo inzhenerno-fizicheskogo instituta
(Department of Electronics of the Moscow Engineering Physics Institute)

SUBMITTED: June 14, 1960

Fig. 1



Card 3/3

YEMEL'YANOV, I. Ya.; FILIPPOV, A. G.

"Reactor control systems."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

22c

L 25212-65 EWT(m)/EPF(c)/EPF(n)-2/EPR Pr-4/Ps-4/Pu-4 IM

ACCESSION NR: AP5001265 S/0089/64/017/006/0439/0448

AUTHOR: Polushkin, K. K.; Yemel'yanov, I. Ya.; Delens, P. A.; Zvonov, N. V.; Aleksenko, Yu. I.; Grozdov, I. I.; Kuznetsov, S. P.; Sirotkin, A. P.; Tokarev, Yu. I.; Lavrovskiy, K. P.; Brodskiy, A. M.; Belov, A. R.; Borisyuk, Ya. V.; Gryazev, V. M.; Tetyukov, V. D.; Popov, D. N.; Koryakin, Yu. I.; Filippov, A. G.; Petrochuk, K. V.; Khoroshavin, V. D.; Savinov, N. P.; Meshcheryakov, M. N.; Pushkarev, V. P.; Suroyegin, V. A.; Gavrilov, P. A.; Podlazov, L. N.; Rogozhkin, I. N.

TITLE: Atomic electric power installation "Arbus" with organic coolant and moderator

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 439-448

TOPIC TAGS: small nuclear reactor, organic coolant, organic moderator, reactor economy, nuclear reactor

ABSTRACT: The paper is a summary of the SSSR # 307 report at the Third Inter-

Card 1/2

L 24212-65

ACCESSION NR: AP5001265

national Conference on Peaceful Uses of Atomic Energy, 1964. It describes an installation of a reactor in which organic liquid serves as the coolant, and as the moderator. The low-power reactors of about 5 Mw are expected to be economical in the remote regions where the usual energy sources are not available. A regeneration system is described for the coolant which removes the products of radiolysis. Orig. art. has: 7 figures

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 000 OTHER: 000

Cord 2/2

14C

L 24218-65 EWT(m)/EPF(c)/EPF(n)-2/EPR Pr-4/Ps-4/Pu-4 DM

ACCESSION NR: AP5001268 S/0089/64/017/006/0463/0474

B

AUTHOR: Kurchatov, I. V. (deceased); Feynberg, S. M.; Dollezhal', N. A.; Aleshchenkov, P. I.; Drozdov, F. S.; Yemel'yanov, I. Ya.; Zhirnov, A. D.; Kazachenko, M. A.; Knyazeva, G. D.; Kondrat'yev, F. V.; Lavrenikov, V. D.; Morgunov, N. G.; Petunin, B. V.; Smirnov, V. P.; Talyzin, V. M.; Filippov, A. G.; Chikhladze, I. L.; Chulkov, P. M.; Shevelev, Ya. V.

TITLE: Pulse graphite reactor IGR

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 463-474

TOPIC TAGS: pulse graphite reactor, high neutron flux pulse, nuclear reactor

ABSTRACT: The paper is a summary of the SSSR #322a report at the International Conference on Peaceful Uses of Atomic Energy in Geneva, 1964. It represents an elaboration of the description of the pulse graphite reactor IGR given by S. M. Feinberg at the Second International Conference. The pulse reactors are used when a high neutron flux is desirable. The described reactor was in opera-

Card 1/2

L 24218-65

ACCESSION NR: AP5001268

tion for several years, and is still working without failure. Orig. art. has: 6 figures

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 002 OTHER: 001

Card 2/2

L 27076-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AT5025640 SOURCE CODE: UR/2657/65/000/013/0248/0272

AUTHOR: Filippov, A. G.

33
B+1

ORG: none

TITLE: Transistorized dynamic inhibiting element with storage capacitor

SOURCE: Poluprovodnikovyye pribory i ikh primeneniye; sbornik statey, no. 13, 1965, 248-272

TOPIC TAGS: logic element, transistorized logic element, information storage and retrieval

ABSTRACT: Of the three known methods of half-cycle delaying used in pulsed dynamic NOT elements, the transistor-base charge accumulation has a large spread and strong dependence on temperature, and the delay lines are cumbersome and unreliable. The third method — storing information in a capacitor — is free from the above shortcomings; a dynamic NOT element of this class (Author's Certificate 161571, "Bull. izobr.," no. 7, 1964) has been theoretically and experimentally investigated. These findings are reported: (1) The series connection of the storage capacitor between the diode logical circuit and the amplifying-transistor base does not require matching or

Card 1/2 UDC: 681.142.67.3

interrogating devices and permits, in principle, storage and retrieval of information without any energy loss; (2) Unlike the static trigger, the dynamic NOT element has no d-c coupling and, therefore, has good temperature stability; (3) Supply-voltage variations of 30% are tolerable within a temperature range of −60+60C; (4) Up to 10 NOT elements can operate from one NOT element; (5) All components of the NOT element operate with low voltages and small currents, thus assuring reliability. Orig. art. has: 10 figures and 47 formulas.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 003 / OTH REF: 001

ACC NR: AP7000780 (A,N) SOURCE CODE: UR/0089/66/021/ 5/0363/0368

AUTHOR: Bulkin, Yu. M.; Zhirnov, A. D.; Zhemchuzhnikov, G. N.; Konstantinov, L. V.; Nikolayev, V. A.; Stenbok, I. A.; Lobanov, V. S.; Filippov, A. G.; Khryantov, N. A.

ORG: none

TITLE: Research and educational reactor IR-100

SOURCE: Atomnaya energiya, v. 21, no. 5, 1966, 363-368

TOPIC TAGS: research reactor, nuclear reactor characteristic/ IR-100 reactor

ABSTRACT: The authors describe the construction, the physical and technical characteristics, and the experimental capabilities of a research reactor with thermal rating of 100 kw, intended for scientific research work and also for training of specialists in the field of atomic energy. This is a water-cooled and water-moderated swimming-pool reactor with all the equipment situated in a central building. It uses enriched UO_2 (10%), with a minimum critical mass of 2.6 kg of U^{235}, and a graphite reflector. The maximum thermal and fast neutron fluxes are 2×10^{12} and 2.2×10^{12}, respectively. The various channels and the possible research that can be carried out with the reactor, as well as the general construction, are described in some detail. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 18/ SUBM DATE: 28Jul66/ ORIG REF: 002/ OTH REF: 003

UDC: 621.039.520.21

Card 1/1

FILIPPOV, A. I.

135-2-10/12

SUBJECT: USSR/Welding

AUTHOR: FILIPPOV, A.I. Engineer.

TITLE: Welding Institute in London and the British Welding Research Association. (Institut svarki v Londone i Britanskaya nauchno issledovatel'skaya assotsiatsiya svarki)

PERIODICAL: "Svaroohnoye Proizvodstvo", 1957, # 2, pp 27-29 (USSR)

ABSTRACT: The author was a member of one of the two Soviet groups of specialists of the Ministry of Shipbuilding Industries which visited the British Welding Association in 1955 and in the beginning of 1956. The article describes the general organization of the Association, its buildings, funds and sources.

The author states in his conclusions that the acquaintance with a number of British shipbuilding companies reveals an inferior level of welding technique in Britain as compared to his country's. However, the increasingly assigned funds for welding research work by the government as well as by private industry, the setup of research work, the new laboratory buildings being built and their first-rate equipment show a high level of scientific work on welding being done in Britain.

Card 1/2

Filippov, A.I

86-58-3-14/37

AUTHOR: Zatsepa, N.S. Col, Filippov, A.I., Maj, and Chuvikov, B.S., Capt

TITLE: Bombing from Low Altitudes (Bombometaniye s maloy vysoty)

PERIODICAL: Vestnik vozdushnogo flota, 1958, Nr 3, pp 35-41 (USSR)

ABSTRACT: The article deals with low-altitude bombing and consists of the following two parts: 1. "Approaching the Target" by N.S. Zatsepa and 2. "Release of Bombs" by A.I. Filippov and B.S. Chuvikov. In the first part the authors, on the basis of the experience gained during low-altitude bombing missions under various weather conditions, deal mostly with the special features of air navigation at low altitudes. The second part deals with low-altitude bombing. The authors state that before the crews are permitted to do actual low-altitude bombing, they must carry out some preliminary practice. First, the crews begin with low-altitude flights in the bombing-range area in order to become familiar with the relief and visibility of targets. According to the authors, the targets on their bombing

Card 1/2

range are built of vertical panels, 2.5 - 3 m high, in the form of fences. Second, the crews practice photo-bombing. When starting actual low-altitude bombing, the authors recommend that the crews should determine in time the necessary aiming data. This should be done at a distance not greater than 50 km from the target on a course parallel to the bomb-run course. The authors also mention briefly some special features in the operation of the optical bombsight at low altitudes.

AVAILABLE: Library of Congress

Card 2/2

KAPULKIN,N.A., inzhener; MISYUROV,I.P., inzhener; FILIPPOV,A.I., inzhener

Plate material for GOST 2523-51 electrode testing. Svar.proizv. no.3:29 Mr '55. (MLRA 8:9)

(Electrodes--Testing)

FILIPPOV, A.I., inzh.

Defect in the control circuit of oil switches. Energetik 8 no.1:21-22 Ja '60. (MIRA 13:5)
(Electric circuit breakers)

FILIPPOV, A.I. Cand. Agricult. Sci.

Dissertation: "Concerning the Mineral Nutrition of Alkaloid and Drug-bearing Plant Cultures." All-Union Sci Res Inst of Fertilizers, Agricultural Engineering and Soil Science imeni K.K. Gedroyets, 8 Apr 47.

SO: Vechernyaya Moskva, Apr, 1947 (Project #17836)

FILIPPOV, A. I., FEDOSEYEV, B. V.

Seed Industry

Mechanized harvest of grass seeds. Korm.baza 3, No. 6, 1952

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

FILIPPOV, A[illegible] and FEDOSEYEV, B.

"Harvesting Seed of Perennial Grasses," Kolkh.proiz., 12, No.7, 1952

FILIPPOV, A. I.

FILIPPOV, A. I.: "Investigation of the technological process of harvesting the seed pods of grasses requiring the wiping dry of seeds." Joint Academic Council, All-Union Sci Res Inst of the Mechanization of Agriculture (VIM) and All-Union Sci Res Inst of the electrification of Agriculture (VIESKh). Moscow, 1956 DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCE.

SO: Knizhnaya Letopis', No. 18, 1956

FILIPPOV, A.I.

Conference on harvesting in separate stages. Mekh. i elek. sots. sel'khoz. 16 no.3:58-59 '58. (MIRA 11:6)
(Grain--Harvesting)

GRINCHUK, I.M., inzh.; FEDOSEYEV, B.V., kand. tekhn. nauk.; FILIPPOV, A.I., kand. tekhn. nauk.

Investigating clover hulling machinery. Mekh.i elek.sots.sel'khoz. 16 no.5:26-30 '58. (MIRA 11:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kormov imeni V.R. Vil'yamsa (for Grinchuk). 2. Zonal'nyy nauchno-issledovatel'skiy institut zemledeliya nechernozemnoy polosy (for Fedoseyev). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut mekhanizatsii sel'skogo khozyaystva (for Filippov).
(Agricultural machinery) (Clover)

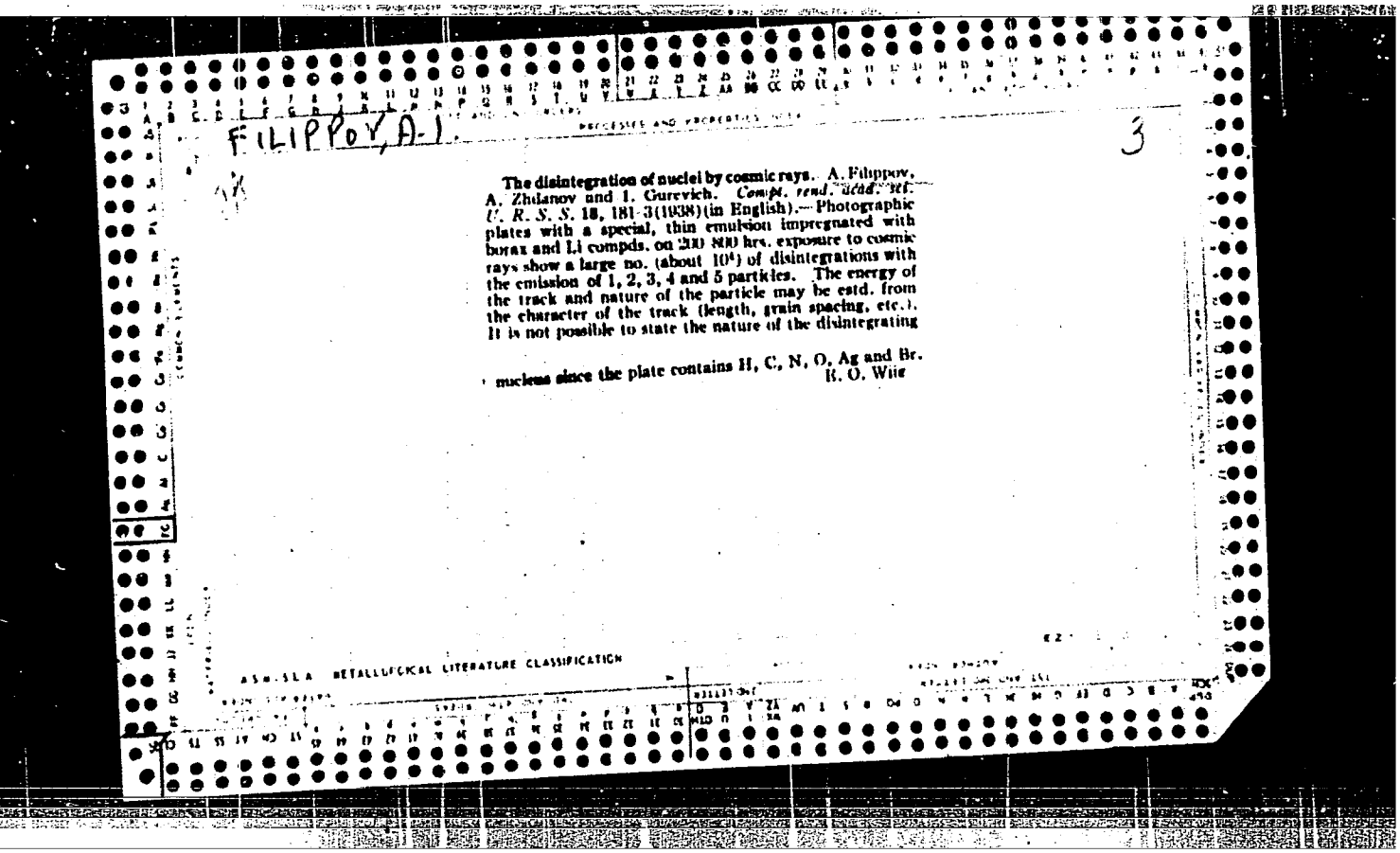
BOLTINSKIY, V.N., akademik; GENIKHOVICH, M.I.; KOGAN, Ye.A.; NIKIFOROV, P.Ye.
PLISHKIN, A.A.; POLYAK, A.Ya.; SOLOVEYCHIK, A.G.; FILIPPOV, A.I.;
SHCHUPAK, A.D.; YAKOBI, M.A.

Performance of machine-tractor units at increased speeds. Mekh.
i elek.sots.sel'khoz. 17 no.3:1-19 '59. (MIRA 12:8)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im.
Lenina (for Boltinskiy).
(Agricultural machinery)

IVANOV, Nikolay Yakovlevich; LEBEDOV, Sergey Sergeyevich; FILIPPOV, Aleksandr Il'ich; ZELENETSKAYA, L.V., red.; LEVINA, L.G., tekhn. red.

[Methods and means for pulse crop harvesting] Sposoby i sredstva uborki zernobobovykh kul'tur. Moskva, Izd-vo M-va sel'khoz. RSFSR, 1961. 66 p. (MIRA 15:10)
(Legumes--Harvesting)

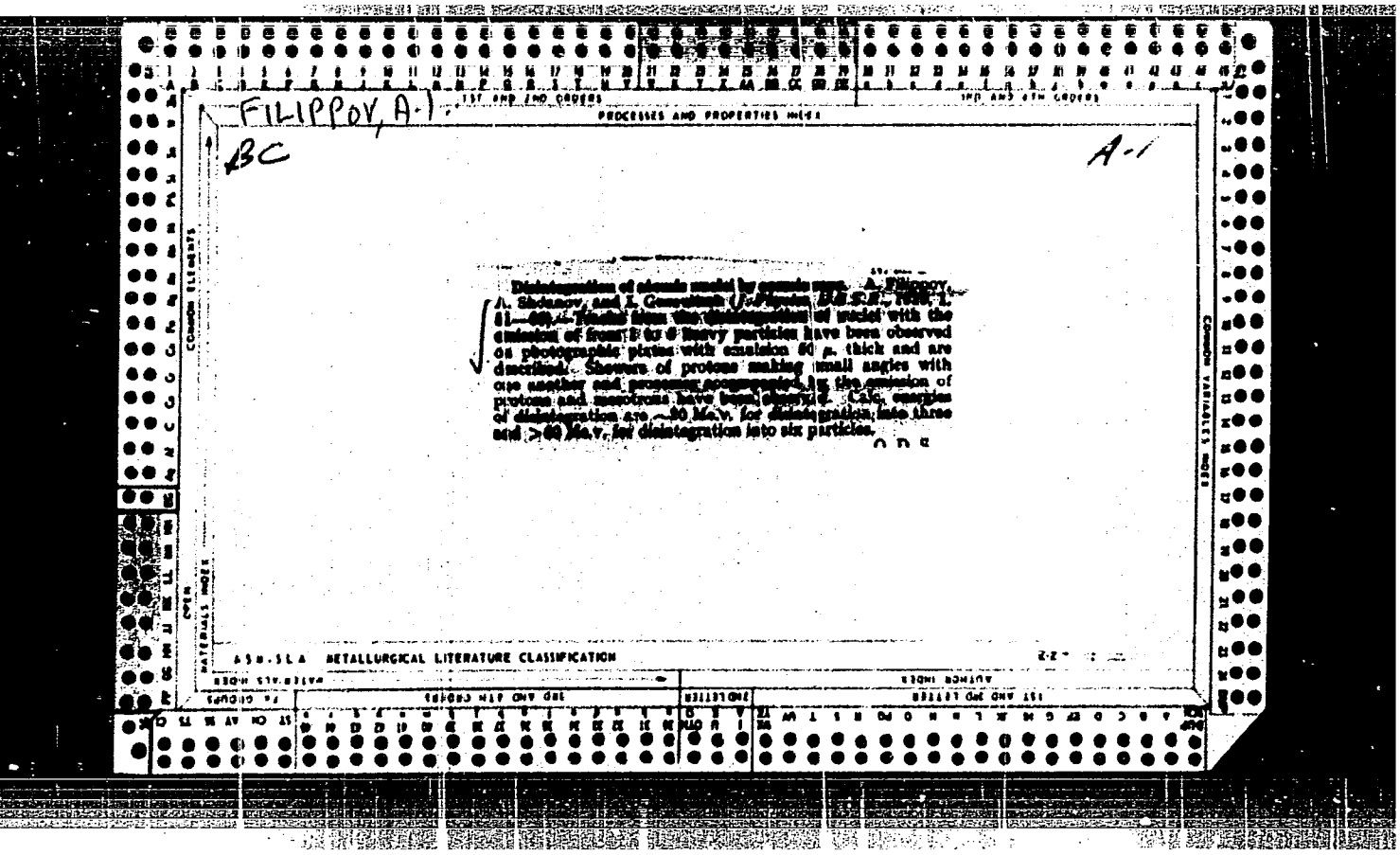


FILIPPOV, A.J.

3

The disintegration of nuclei by cosmic rays. A. Filippov, A. Zhdanov and I. Gurevich. *Compt. rend. acad. sci. U. R. S. S.* **18**, 181-3(1938)(in English).—Photographic plates with a special, thin emulsion impregnated with borax and Li compds. on 200 800 hrs. exposure to cosmic rays show a large no. (about 10^4) of disintegrations with the emission of 1, 2, 3, 4 and 5 particles. The energy of the track and nature of the particle may be estd. from the character of the track (length, grain spacing, etc.). It is not possible to state the nature of the disintegrating nucleus since the plate contains H, C, N, O, Ag and Br. R. O. Wiig

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Measurement of the mass of cosmic ray particles by means of Wilson chambers. M. S. Kozodaev and A. I. Filippov. *Bull. Acad. Sci. U.S.S.R., Phys. Ser.* 6, 643-7 (1955)(English translation).—See *C.A.* 50, 7617i.

R.M.R.

KOZODAYEV, M.S.; FILIPPOV, A.I.

Measuring the masses of cosmic-ray particles by means of the cloud chamber. Izv.AN SSSR.Ser.fiz.19 no.6:711-714 N-D '55. (MLRA 9:4)

1.Institut yadernykh problem Akademii nauk SSSR.
(Cosmic rays) (Nuclear physics)

FILIPPOV, A.I.

19

Study of the scattering of negative π mesons in hydrogen by means of diffusion chamber. M. S. Kozodaev, R. [illegible] Sulyaev, A. I. Filippov, and Yu. Shcherbakov [illegible] Phys. "Doklady" [illegible]

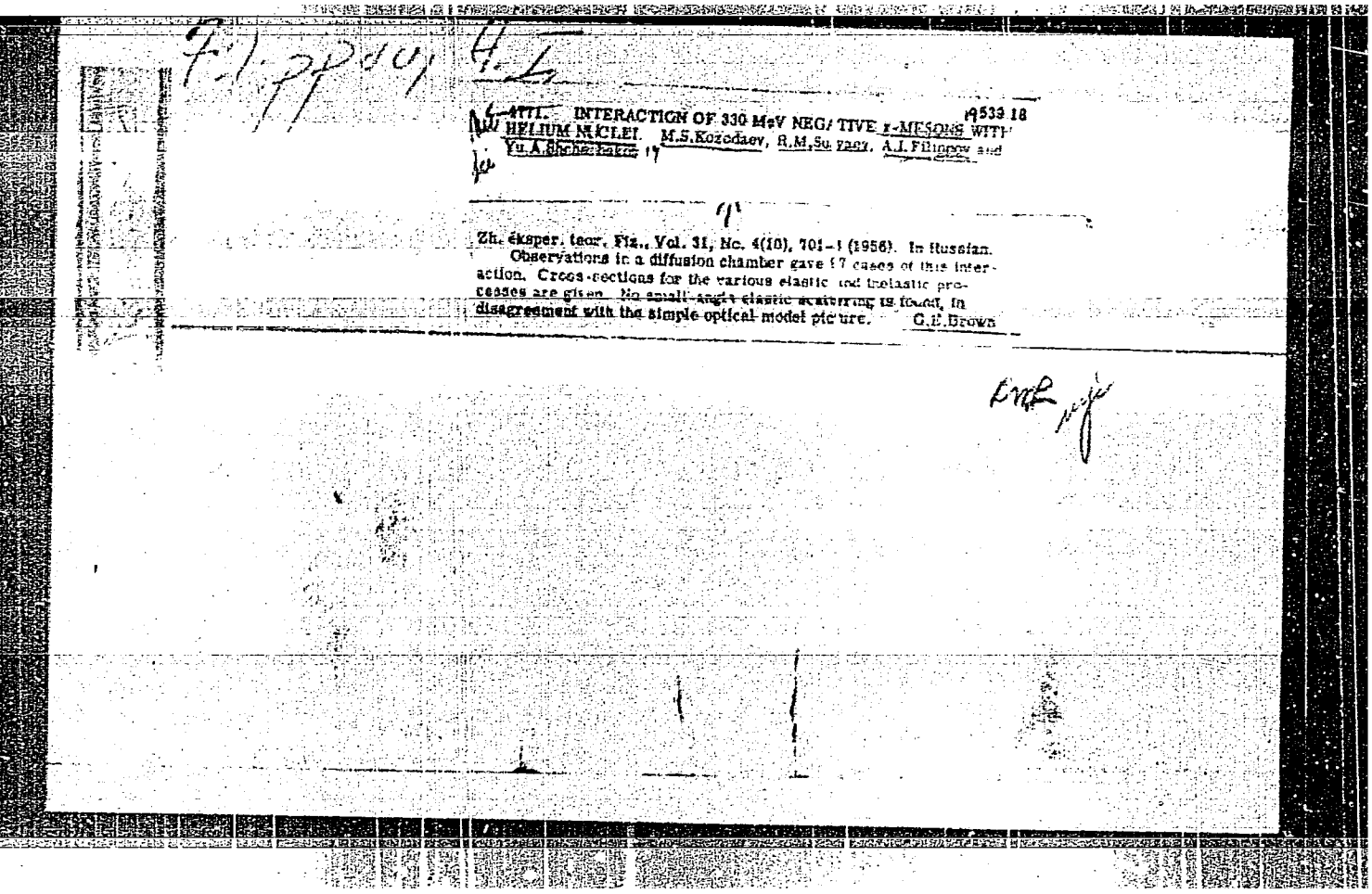
C.A. 51, 883c

FILIPPOV, A.E.

Measurement of the mass of particles by aid of the Wilson chamber

... presented for the ... also an analysis of the error in the measurement of the mass of the particles. A formula is ...

1. Inst. Yadernykh Problem AN SSSR
(Cloud Chambers) (Atomic mass-measurement)
(Particles, Elementary)



9533 18

4TTI. INTERACTION OF 330 MeV NEGATIVE π-MESONS WITH HELIUM NUCLEI. M.S.Kozodaev, R.M.Sulyaev, A.I.Filippov and Yu.A.Shcherbakov. 17

Zh. éksper. teor. Fiz., Vol. 31, No. 4(10), 701-1 (1956). In Russian.

Observations in a diffusion chamber gave 17 cases of this interaction. Cross-sections for the various elastic and inelastic processes are given. No small-angle elastic scattering is found, in disagreement with the simple optical model picture. G.E.Brown

FILIPPOV, A.

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

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 391

Author : Kozodayev, M., Sulyayev, P., Filippov, A., Shcherbakov, Yu.
Inst : Inst. of Nuclear Problems, USSR Acad. of Sciences
Title : Study of the Scattering of Negative π-Mesons in Hydrogen with the Aid of a Diffusion Chamber.

Orig Pub : Dokl. AN SSSR, 1956, 107, No 2, 236-239

Abstract : Elastic scattering of 330±6 Mev π^--mesons was studied. Eleven cases of elastic scattering by protons and 13 cases of charge exchange were obtained. The corresponding cross sections are 11 ± 4 and 13 ± 4 millibarns, and the total section is 24 ± 5 millibarns. The ratio $\sigma_{ch.e}/\sigma_{elast.}$ = 1.2 ± 05, while at lower energies it equals 2. The change in the value of the ratio $\sigma_{ch.e}/\sigma_{elast.}$ indicates that for 330-Mev π -mesons one no longer sees a predominant interaction in the state with isotopic spin 3/2; the interaction in the state with T = 1/2 becomes just as important.

Card : 1/1

Filippov, A. F.

ELASTIC SCATTERING OF π^+ AND π^- MESONS ON He NUCLEI AT 300 MEV. M. G. Kozodaev, R. M. Sulyaev, A. I. Filippov and Yu. A. Shcherbakov [illegible]

7 Exp

Investigations were made of the elastic scattering of π^+ and π^- mesons in the He nuclei at 300 Mev to determine the angular distribution and to check the previous [illegible] about the effects of Coulomb interference. [illegible]

FILIPPOV, A.I.

INTERACTION BETWEEN NEGATIVE PIONS AND HELIUM NUCLEI AT 330 Mev ENERGY. M. S. Kozodaev, R. M. Sulaev, A. I. Filippov, and Iu. A. Shcherbakov. Soviet Phys. JETP 4, 580-2(1957) May.

The results of an analysis of 97 events of interaction obtained from an examination of approximately 13,000 photographs are given. The cross sections obtained in the various processes are included. (M.H.R.)

FILIPPOV A. I.

120-6-7/36

AUTHORS: Vasilenko, A.T., Kozodayev, M.S., Sulyayev, R.M., Filippov, A.I. and Shcherbakov, Yu.A.

TITLE: Reprojector for Evaluating Stereographic Exposures (Reproyektor dlya obrabotki stereofotografiy)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.6, pp. 34 - 37 (USSR)

ABSTRACT: Due to the development of methods of recording nuclear processes by means of diffusion and bubble chambers, it is possible to obtain within a relatively short time hundreds of thousands of photographs depicting the traces of charged particles. As a result of this, the people concerned with the experiments are faced with the problem of using effective methods of evaluation of the obtained material. Usually, it is necessary to determine the co-ordinates of some points, the curvatures of the traces and the spatial angle between some such traces. In this paper, an instrument is described for measuring the spatial co-ordinates, the angles and curvatures of the trajectories of charged particles by reproducing the traces of the particles photographed on two stereoscopic exposures by the method of reprojection on to a mobile screen, using the same optical system which was used for taking photographs. This permits observation on the instrument screens

Card1/2

Card 2/2

FILIPPOV, A.I.

56-4-35/54

AUTHORS: Kozodayev, M.S., Sulyayev, R.M., Filippov, A.I., Shcherbakov, Yu.A.

TITLE: The Elastic Scattering of $\pi^{\pm}$-Mesons on Helium Nuclei at an Energy of 300 MeV (Uprugoye rasseyaniye $\pi^{\pm}$ - mezonov na yadrakh geliya pri energii 300 MeV)(Letter to the Editor)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 4, pp. 1047 - 1049 (USSR)

ABSTRACT: The elastic scattering was investigated by means of a diffusion chamber (filled with helium of 15 atmospheres absolute pressure). 24000 photographs were taken and investigated for π^--mesons with 300 $\pm$ 6 MeV and 11000 photographs for π^+-mesons with 273 $\pm$ 7 MeV. The absolute scattering cross section for the π^- - mesons was measured with 45 $\pm$ 5 mb and that for π^+ - mesons with 72 $\pm$ 11 mb. From the measured angular distribution it may be concluded that on the occasion of the scattering within small angles an interference effect is present between the coulombian scattering and the nuclear scattering. In a supplement the authors define their attitude regarding the recently again discussed problem that the π-mesons have a spin differ-

Card 1/2

The Alastic Scattering of $\pi^{\pm}$ - Mesons on Helium Nuclei at an Energy of 300 MeV

ent from zero. More experimental material is gathered, in order to bring about a solution of this problem. There are 3 figures and 3 Slavic references.

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

SUBMITTED: June 21, 1957 (initially) and July 25, 1957 (after revision)

AVAILABLE: Library of Congress

Card 2/2

SOV/120-58-6-8/32

AUTHORS: Kozodayev, M.S., Kulyukin, M. M., Sulyayev, R. M., Filippov, A. T. and Shcherbakov, Yu. A.

TITLE: A High Pressure Diffusion Chamber in a Pulsed Magnetic Field (Diffuzionnaya kamera vysokogo davleniya v impul'snom magnitnom pole)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 6, pp 47-55 (USSR)

ABSTRACT: At the present time diffusion chambers are widely used in studies with accelerators. They have turned out to be sufficiently efficient for studying the interaction of neucleons and mesons with separate neucleons and light nuclei (Refs.1 and 2). An installation is described in the present paper which includes a diffusion chamber in a magnetic field which has been used in studying the interaction of protons and mesons with light nuclei. In distinction to other chambers, e.g. those described in Refs.4-6, the necessary temperature distribution in the sensitive layer is set up by means of an internal plexiglass cylinder, as described by Kozodayev et al (Refs.7 and 8). By this means it is possible to reduce the magnitude of horizontal gradients which are the main source of undesirable convections in the chamber. Such a reduction in convective distortion of tracks leads to an increase in the

Card 1/4

A High Pressure Diffusion Chamber in a Pulsed Magnetic Field

accuracy in the measurement of momenta. Because of the strong equalising action of the plexiglass cylinder it was found possible to reduce the distance between the side boundaries of the sensitive layer and the outer walls of the chamber and thus improve the utilisation of the working volume of the magnet. Such a construction of the windows means that it is possible to remove the chamber from the magnet without dismantling the latter. It also means that it is possible to use selenoid magnets with small gaps between the coils which in turn makes it easier to obtain large magnetic fields with good homogeneity and economy of supplies. The installation described in this paper consists of a selenoid magnet MS-4, a system for evacuating and filling the chamber and a control panel which controls the accelerator, the chamber and the magnet. The external view of the installation is shown in Fig.1. The chamber was built in 1955 (Ref.3). The diameter of the working region of the chamber is 30 cm, the external diameter being 45.6 cm. The chamber was designed

A High Pressure Diffusion Chamber in a Pulsed Magnetic Field

for work with light gases such as hydrogen, deuterium and helium at pressures up to 25 atm. The magnetic field in the sensitive region, which is produced by the selenoid magnet, MS-4, reaches up to 11 200 oersted, in continuous operation and 16 000 oersted in pulsed operation. The MS-4 magnet is illustrated in Fig.2, in which 1 is the photographic camera, 2 is the chamber, 3 are illuminators and 4 is the coil of the selenoid. There are 2 coils which consist of sectionalised windings of copper tubes. The gap between the coils in the magnet may be varied between 50 and 100 mm. The windings are cooled by distilled water under pressure of 5 atm. A sectional drawing of the diffusion chamber itself is given in Fig.4. The body of the chamber, 1 , is of stainless steel, and is made from a single piece. Tubes are attached to the lower part of the body at 2 , in which acetone is circulating and thus cools the body. A reservoir, 4 , is included and collects condensed methyl alcohol, which is the working liquid. At the bottom of the chamber there is a copper disc, 5 , which is used to equalise the temperature. The surface of the disc is electrolytically blackened. A plexiglass cylinder 7 is set up on this disc and,

 as was mentioned above, this cylinder produces the necessary

A High Pressure Diffusion Chamber in a Pulsed Magnetic Field

temperature gradient. Experiments have shown that glass containing potassium salts gives a strong electron background. Estimates carried out for various kinds of glasses have shown that the main source of the background tracks is K^{40}. The magnetic field strongly localises the tracks of background electrons in the central part of the chamber. However, near the walls there is a non-sensitive zone 2-3 cm wide. The authors thank the following persons for help in the design and the construction of the installation: V.M.Soroko, K.A.Baycher, I.A.Shtyrin and P.T.Pavlov. Acknowledgments are also made to A.G.Potekhin and G.P.Zorin. There are 9 figures and 12 references, of which 7 are English and the rest are Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy. (Joint Institute for Nuclear Studies)

SUBMITTED: December 9, 1957.

VOLOSHCHUK, V.I.; KUZNETSOV, V.V.; SULYAYEV, R.M.; FILIPPOV, A.I.; SHCHERBAKOV, Yu.A.

Measurement of particle ionization by the relative photometry of track photographs. Prib. i tekh. eksp. no.3:34-36 My-Je '60. (MIRA 14:10)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Photography, Particle track)
(Ionization)

KOZODAYEV, M.S.; KLYUKIN, M.M.; SULYAYEV, R.M.; FILIPPOV, A.I.; SHCHERBAKOV, Yu.A.

Inelastic interaction of $K^{\pm}$ -mesons with helium nuclei at an energy of about 300 Mev. Zhur.eksp.i teor.fiz. 38 no.2:409-422 F '60. (MIRA 14:5)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Mesons) (Helium)

Filippov, A. I.

82409

S/056/60/038/03/07/033
B006/B014

24.6600

AUTHORS: Kozodayev, M. S., Kulyukin, M. M., Sulyayev, R. M., Filippov, A. I., Shcherbakov, Yu. A.

TITLE: Interaction of Protons With He^4 Nuclei at an Energy of 630 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 3, pp. 708-715

TEXT: In the present paper the authors report on their investigations of the scattering of 630-Mev protons on helium nuclei. These investigations were conducted with a high-pressure diffusion cloud chamber. This method made it possible to investigate elastic and inelastic scattering in one and the same experiment. Fig. 1 provides a scheme of the experimental setup. The experimental area was 30 cm in diameter, and the height of the sensitive layer was 5 - 7 cm. The chamber was filled with helium up to 15 - 20 atm. The proton energy was a little lower than the maximum energy supplied by the synchrocyclotron, and amounted to (630±15)Mev. A picture was taken every 15 - 20 sec, and a total of 20,000 stereophotographs was thus obtained. Interaction events were isolated by interpreting the pictures three times with a stereomagnifier;

Card 1/4

82409

Interaction of Protons With He^4 Nuclei at an Energy of 630 Mev

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B006/B014

a total of 444 scatterings of protons on helium nuclei was found. For the most part, interactions were found in two- and three-pronged stars, while only 8 and 4 interactions were found in four- and five-pronged stars, respectively. The total cross section was found to be $(150 \pm 13).10^{-27}$ cm^2. Table 1 contains the reactions that may take place in the scattering of 630-Mev protons on helium nuclei. They are compiled in four groups and are discussed individually. Fig. 2 shows a picture of a pion pair production. Fig. 3 depicts the angular distribution of elastically scattered protons; $d\sigma/d\Omega$ decreases rapidly with increasing angle. The smallest angle used was 5° in the center-of-gravity system. The elastic cross section was found to be $(22.0 \pm 4.5).10^{-27}$ cm^2 without correcting for small angles, and $(24.0 \pm 5.0).10^{-27}$ cm^2 with a correction. The cross section in the range of from 315 to 630 Mev hardly depended on energy. The angular distribution of elastically scattered protons was also computed within the optical model in Born approximation without considering the spin-orbit- and Coulomb interactions, both for 630 and 315 Mev; the distribution curves obtained are likewise drawn in the diagram (Fig. 3). Inelastic collisions are divided into two groups and separately

Card 2/4

Interaction of Protons With He^4 Nuclei at an Energy of 630 Mev

S/056/60/038/03/07/033
B006/B014

discussed on this basis: multiple collisions in the helium nucleus and quasi-free scattering.

$N_{pn}^{nucl} = N_{pn} + N_{pn}^{k} = N_2' + N_4 + N_5 + N_{pn}^{k}$ is written down (N_{pn}^{nucl} being the total number of collisions of the impinging proton with the neutrons of the nucleus, N_{pn} the number of quasi-free interactions, N_2' the number of the two-pronged stars (without elastic scattering), N_4 and N_5 the number of four and five-pronged stars, N_{pn}^{k} the number of cases of a multiple interaction. The reactions of the various stars are discussed. The contribution of multiple interaction processes is written down as being $\varepsilon = 0.22 \pm 0.07$. Cross sections are compiled in Table 2 and details are discussed for the possible reactions in the case of quasi-free scattering. A section of $(15 \pm 2).10^{-27}$ cm^2 was found for the quasi-elastic p-p scattering, and $(24 \pm 2).10^{-27}$ cm^2 per nucleon for the quasi-free p-n interaction. The total inelastic scattering cross section is found to be $(126 \pm 14).10^{-27}$ cm^2, the cross section for events involving π^--meson production in p-n collisions was found to be $(1.3 \pm 0.5).10^{-27}$ cm^2 per neutron. Fig. 4 shows the angular distribution of the quasi-elastic p-p

Card 3/4

Interaction of Protons With He^4 Nuclei at an Energy of 630 Mev

S/056/60/038/03/07/033
B006/B014

scattering. The authors finally thank A. G. Potekhina, V. F. Poyenko, and Ye. A. Shvanev for their assistance. There are 4 figures, 2 tables, and 17 references, 7 of which are Soviet.

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

SUBMITTED: September 10, 1959

Card 4/4

84387

S/056/60/039/004/005/048
B004/B070

24.6900

AUTHORS: Kozodayev, M. S., Kulyukin, M. M., Sulyayev, R. M., Filippov, A. I., Shcherbakov, Yu. A.

TITLE: Angular and Momentum Distributions of Residual Nuclei in Inelastic Scattering of Fast π-Mesons and Protons From Helium

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 4(10), pp. 929-936

TEXT: The authors studied the angular and momentum distributions of the residual nuclei in quasifree interaction of fast pions and protons with helium nuclei. A high pressure diffusion chamber was employed and was irradiated by particle beams of the synchrocyclotron of their institute. The energy of the protons was (630±15)Mev, that of the π^+-meson (237±7)Mev, and that of the π^--meson (330±6)Mev. 20,000 photographs were taken of proton and π^--meson beams, and 10,000 of the beams of π^+-mesons. The details of the experiment, evaluation of the plates, and the

Card 1/3

Angular and Momentum Distributions of Residual Nuclei in Inelastic Scattering of Fast π-Mesons and Protons From Helium

S/056/60/039/004/005/048
B004/B070

identification of events are described already in Refs. 8 and 9. Fig. 1 shows a typical quasielastic proton - proton scattering event. The observed reactions and their cross sections are given in Table 1. Fig. 2 shows the angular distribution of the residual nuclei in quasifree p - p scattering; Fig. 3 shows the angular distribution for the interaction of π^+- and π^--mesons. The residual nuclei were predominantly emitted forward. The anisotropy of the angular distribution is characterized by $\alpha = N_1/N_2$ (N_1 = number of nuclei emitted in the forward direction, N_2 = number of nuclei emitted backward). The values obtained are: $\alpha_p = 2.17 \pm 0.15$, $\alpha_\pi = 1.26 \pm 0.13$. The momentum distributions of the residual nuclei are shown in Fig. 4 (protons) and Fig. 5 (pions). The observed results are interpreted by the authors on the basis of the Serber - Goldberger model. When the additional momentum $\Delta\vec{p}$ imparted to the residual nucleus by the knocked-out nucleon is taken into account, a good agreement between the experimental and the calculated data is obtained (Fig. 6). The angular distribution for the reaction (1):

84387

Angular and Momentum Distribution of Residual Nuclei in Inelastic Scattering of Fast π-Mesons and Protons From Helium

S/056/60/039/004/005/048
B004/B070

$p + He^4 \rightarrow p + p + H^3$ was calculated by means of a "Ural" computer. Figs. 7 and 8 show the momentum spectra of H^3 nuclei where account has been taken of the interaction between the nucleon and the residual nucleus. The momentum p_0 for pions as well as protons was found to be 150 Mev/c which corresponds to the energy value 12±2 Mev. The momentum distribution may be described by a Gaussian function; the value of the momentum becomes 1/e of the maximum at 12±2 Mev. The authors mention a paper of M. G. Meshcheryakov et al. (Ref. 4). They thank I. K. Vzorov and Yu. D. Prokoshkin for discussions, I. A. Popova for calculations with the computer, and Ye. A. Shvaneva for help in the evaluation of experimental data. There are 8 figures, 1 table, and 17 references: 3 Soviet, 12 US, 1 British, and 1 German.

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

SUBMITTED: May 11, 1960

Card 3/3

VASILENKO, A.T.; KULYUKIN, M.M.; SULYAYEV, R.M.; FILIPPOV, A.I.; SHCHERBAKOV, Yu.A.

Semiautomatic comparator for processing stereoscopic photographs. Prib.i tekh.eksp. no.4:56-63 Jl-Ag '60. (MIRA 13:9)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Electronic measurements)
(Photography, Particle track)

FILIPPOV, A.I.; KULYUKIN, M.M.; PONTECORVO, B.; SHCHERBAKOV, Yu.A.; SULYAYEV, R.M.; TSUPKO-SITNIKOV, V.M.; ZAYMIDOROGA, O.A.

Observation of the reaction $\mu^- + He^3 \rightarrow H^3 + \nu$. Dubna, Izdatel'skii otdel Ob"edinennoge in-ta iadernykh issledovanii, 1961. 9 p.
(No subject heading)

FILIPPOV, A. I.

31775
S/056/61/041/006/021/054
B102/B138

24.6600

AUTHORS: Zaymidoroga, O. A., Kulyukin, M. M., Pontekorvo, B., Sulyayev, R. M., Filippov, A. I., Tsupko-Sitnikov, V. M., Shcherbakov, Yu. A.

TITLE: Observation of the reaction $\mu^- + He^3 \rightarrow H^3 + \nu$

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 6(12), 1961, 1804-1808

TEXT: The probability of slow μ^--meson capture by He^3 is known from highly accurate theoretical calculations. From probability measurements of the reaction $\mu^- + He^3 \rightarrow H^3 + \nu$ the muon-nucleon interaction constant can be determined and the results compared with those of the weak interaction theory. From the tritium energy in this process the upper limit of the neutral particle mass emitted in muon capture can be estimated and the probability of the process $\mu^- + p \rightarrow n + \nu$, not yet observed with certainty, can be determined. The first results of investigation of muon capture by He^3 are dealt with. A diffusion chamber filled with pure (99.999%) He^3 at

Card 1/4

Observation of the reaction ...

20 atm, was placed in a field of 6000 oe and exposed to a muon beam (momentum 217 Mev/c) from the synchrocyclotron of the OIYaI. The methyl alcohol pressure in the sensitive layer of the chamber was less than 50 mm Hg, the tritium content of the gas used was 10^{-15}. A copper filter was put in the chamber to slow down the mesons and eliminate the pions. The chamber was carefully shielded from thermal neutrons. To date, about 6000 photographs have been taken of events where the muon path stopped at a He^3 nucleus. The reactions sought were identified by the energy of the tritium nucleus. From the pion admixture 1200 stars were observed. The admixture was determined to ~2%, causing $\pi^- + He^3 \rightarrow H^3 + \gamma$ reactions. 14 events of the $\mu^- + He^3 \rightarrow H^3 + \nu$ reaction were identified, the mean tritium range was 2.37 ± 0.02 mg/cm^2. The upper limit of the neutral particle emitted in muon capture was estimated: With 99% probability its mass is less than 6 Mev. The charged particle masses were: m_{He^3} = 2808.22 Mev, m_{H^3} = 1808.75 Mev, m_μ = 105.65 Mev. The probability of reaction (1) was $(1.30 \pm 0.40) \cdot 10^3$ sec^{-1}. The value calculated by Wolfenstein on the basis of the theory of universal

Card 2/4

31775
S/056/61/041/006/021/054
B102/B138

Observation of the reaction ...

weak interaction was $(1.54 \pm 0.08) \cdot 10^3 sec^{-1}$. The constant of vectorial μN interaction was estimated roughly: With a probability of 90%, $|C_V^\mu| < 2 |C_A^\mu|$. The authors thank P. L. Kapitsa, V. P. Peshkov, V. M. Kuznetsov and A. I. Filimonov for the purification of the He^3 from H^3 carried out in the IFP AN SSSR, S. S. Gershteyn for discussions, V. P. Dzhelepov, L. I. Lapidus for interest and G. M. Aleksandrov, V. V. Kuznetsov, N. V. Lebedev, V. I. Orekhov, V. F. Poyenko, A. G. Potekhin, D. B. Pontekorvo and I. V. Falomkin for experimental help. There are 2 figures and 12 references: 4 Soviet and 8 non-Soviet. The four most recent references to English-language publications read as follows: S. Weinberg. Phys. Rev. Lett. 4, 575, 1960; J. C. Fetkovich et al. Phys. Rev. 118, 319, 1960; E. J. Maier et al. Phys. Rev. Lett. 6, 417, 1961; L. Wolfenstein. Proc. of the 1960 Ann. Int. Conf. on High Energy Phys. of Rochester, Univ. of Rochester, 1960, p. 529; Bull. Amer. Phys. Soc., 6, 33, 1961.

Card 3/4

31775
S/056/61/041/006/021/054
B102/B138

Observation of the reaction ...

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

SUBMITTED: July 25, 1961

Card 4/4

ZAYMIDOROGA, O.A.; KULYUKIN, M.M.; PONTEKORVO, B.; SULYAYEV, R.M.; FILIPPOV, A.I.; TSUPKO-SITNIKOV, V.M.; SHCHERBAKOV, Yu.A.

Observation of the reaction $\mu^- + He^3 \rightarrow He^3 + \nu$. Zhur. eksp. i teor. fiz. 41 no.6:1804-1808 D '61. (MIRA 15:1)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Nuclear reactions)

FALOMKIN, I.V., FILIPPOV, A.I., KULYUKIN, M.M., PONTECORVO, B.M., SCHERBAKOV, Yu.A., SULYAYEV, R.M., TSUPKO-SITNIKOV, V.M., ZAIMIDOROGA, O.A.

"Muon-Nucleon Interaction Constants and Muon Capture in HE^3"

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

Joint Institute for Nuclear Research
Laboratory of Nuclear Problems

FALOMKIN, I. V., FILIPPOV, A. I., KULYUKIN, M. M., Yu. A. SCHERBAKOV, SULYAYEV, R. M., TSUPKO-SITNIKOV, V.M., and ZAIMIDOROGA, O. A.

"π^--Meson Capture in He^3"

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

Joint Institute for Nuclear Research
Lab. of Nuclear Problems

FILIPPOV, A.I., KULYUKIN, M.M., PONTECORVO, B.M., SHCHERBAKOV, Yu.A., SULYAYEV, R.M., ZAYMIDOROGA, O.G.

"Observation of the Reaction $\mu + He^3 \rightarrow H^3 + \nu$"

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

Joint Institute for Nuclear Research
Laboratory of Nuclear Problems

FALOMKIN, I.V.; FILIPPOV, A.I.; KULYUKIN, M.M.; PONTECORVO, B.; SHCHERBAKOV, Yu.A.; SULYAYEV, R.M.; TSUPKO-SITNIKOV, V.M.; ZAYMIDOROGA, O.A.; SMIRNOVA, L.A.[translator]; SARANTSEVA, V.R., tekhn. red.

Measurement of the $\mu^- + He^3 \rightarrow H^3 + \nu$ reaction rate. Dubna, Ob"edinennyi in-t iadernykh issledovanii, 1962. 7 p.
(No subject heading)

FILIPPOV, A. I.

39680
S/056/62/043/001/055/056
B102/B104

24.6700

AUTHORS: Zaymidoroga, O. A., Kulyukin, M. M., Pontekorvo, B., Sulyayev, R. M., Fulomkin, I. V., Filippov, A. I., Tsupko-Sitnikov, V. M., Shcherbakov, Yu. A.

TITLE: Measurement of the probability of the $\mu^- + He^3 \rightarrow H^3 + \nu$ reaction

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 1(7), 1962, 355-358

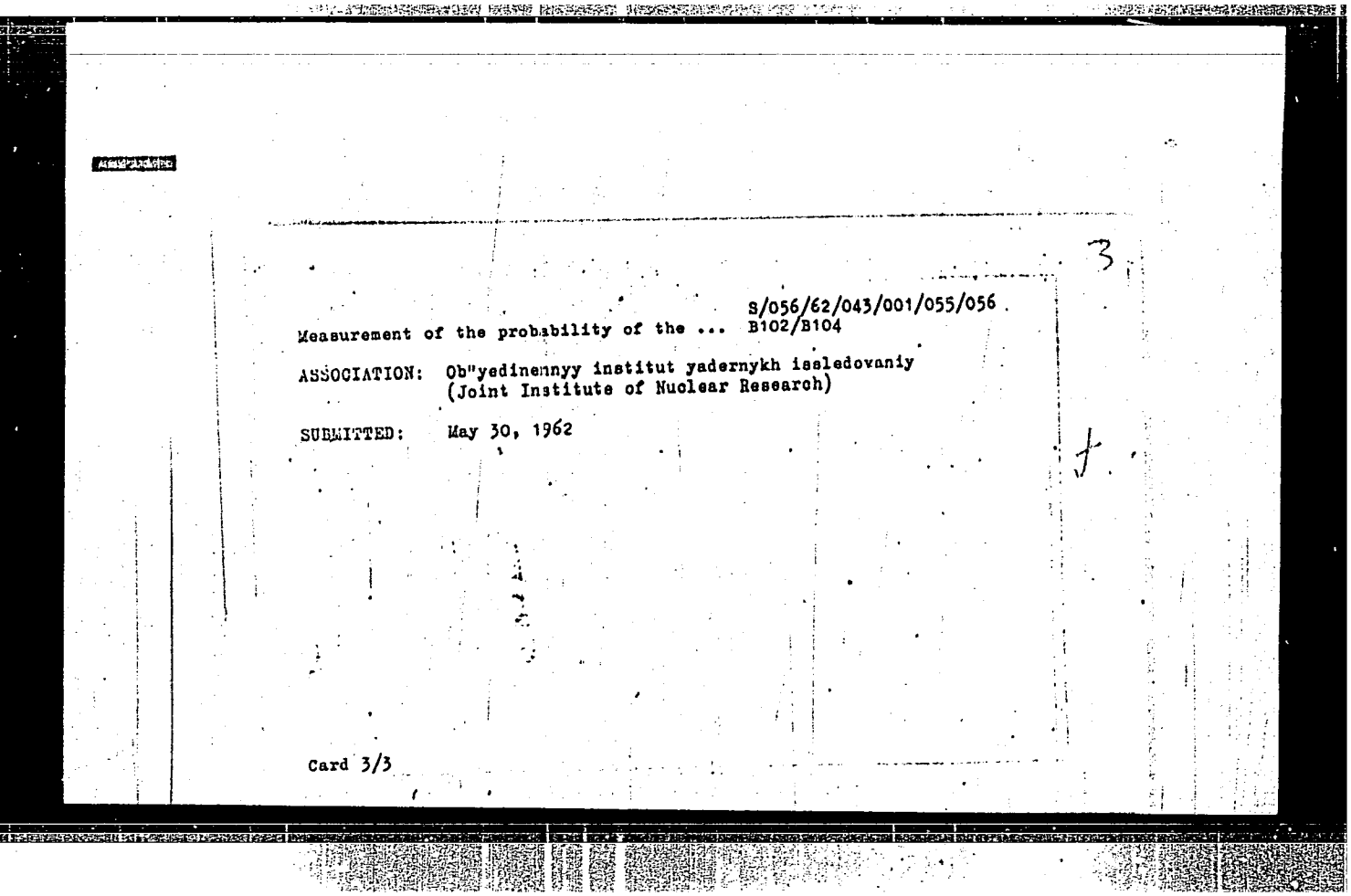
TEXT: The $\mu^- + He^3 \rightarrow H^3 + \nu$ -reaction probability was measured in order to study the symmetry of the muon and electron interactions with nucleons. The method used is that described in ZhETF, 41, 1805, 1961. A diffusion chamber filled with He^3 gas (20 atm) in a field of 6 koe was exposed to a muon beam (217 Mev/c) from the synchrocyclotron of the Laboratoriya yadernykh problem OIYaI (Laboratory of Nuclear Problems of the OIYaI), a copper filter being used to moderate the muons. Some 10^5 photographs were taken. The total number of captures and μ-e decay events was determined from the spectrum of the visible secondary tracks of tritium stars and also from the spectrum of the ranges of the stopped secondary

Card 1/3

Measurement of the probability of the ...

particles. The two spectra agree, each having two peaks: a higher peak at ranges of 2.0 - 2.6 mg/cm^2 corresponding to the reaction $\mu^- + He^3 \rightarrow H^3 + \nu$, and a smaller one at 5.3-5.9 mg/cm^2 corresponding to $\pi^- + He^3 \rightarrow He^3 + \gamma$. The probability of the muon capture was found to be $(\Lambda_{He^3})_{exp} = (1.36 \pm 0.18) \cdot 10^3 sec^{-1}$, as against which Wolfenstein (Bull. Am. Phys. Soc. 6, 33, 1961) had calculated $(\Lambda_{He^3})_{theor.} = 1.54 \cdot 10^3 sec^{-1}$ using the theory of universal vectorial interaction. The result speaks in favor of this theory, and the muon - electron symmetry in nucleon interactions on which the universal theory is based agrees with the experiment (13% accuracy). An estimate of the Fermi and Gamow-Teller constants (G_F and G_G) of this reaction results in $G_P < - 0.1$, $G_P = -(0.6^{+0.4}_{-0.7})G_G$ which is in agreement with the theory of universal V-A interaction. There are 2 figures.

Card 2/3



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S/056/62/043/001/055/056
Measurement of the probability of the ... B102/B104

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

SUBMITTED: May 30, 1962

Card 3/3

3

S/056/63/044/001/067/067
B102/B186

AUTHORS: Zaymidoroga, O. A., Kulyukin, M. M., Pontekorvo, B., Sulyayev, R. M., Falomkin, I. V., Filippov, A. I., Tsupko-Sitnikov, V. M., Shcherbakov, Yu. A.

TITLE: Measurement of the $\mu^- + He^3 \rightarrow H^3 + \nu$ reaction probability. Final results

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 1, 1963, 389 - 390

TEXT: The $\mu^- + He^3$ reaction probability was determined from about 200 events observed in a He^3 diffusion chamber. Experimental method, and the scanning and evaluation procedures used were the same as those described in ZhETF, 43, 355, 1962. The final experimental result is $\Lambda_{He^3} = (1.41 \pm 0.14) \cdot 10^3$ sec^{-1}. It agrees with the previously published one which was calculated from the data of 90 events. There is 1 table.

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

Card 1/2

FILIPPOV, A.I.

S/056/63/044/004/011/044
B102/B186

AUTHORS: Zaymidoroga, O. A., Kulyukin, N. M., Sulyayev, R. M., Falomkin, I. V., Filippov, A. I., Tsupko-Sitnikov, V. M., Shcherbakov, Yu. A.

TITLE: The Panofsky ratio for He^3 and the root-mean-square radius for the $He^3 \to H^3$ transition

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 4, 1963, 1180 - 1183

TEXT: The capture of π^- by He^3 was theoretically investigated, and was effected in the following processes which are allowed from the standpoint of conservation laws:

I.	$\pi^- + He^3 \to p + n + n$	(55,5%)
II.	$\pi^- + He^3 \to n + d$	(27,8%)
III.	$\pi^- + He^3 \to H^3 + \pi^0$	(9,4%)
IV.	$\pi^- + He^3 \to H^3 + \gamma$	(4,8%)
V.	$\pi^- + He^3 \to d + n + \gamma$	(2,0%)
VI.	$\pi^- + He^3 \to p + n + n + \gamma$	(0,5%)

The Panofsky ratio for...

Now the capture of π^- mesons stopped in He^3 could be observed for the first time in the reactions III and IV. B. V. Struminskiy has shown (Preprint OIYaI, E-1012, Dubna, 1962), that the probability ratio (Panofsky ratio P) of these reactions is related with the r.m.s. radius r of the He^3-H^3 transition in radiative processes by

$$P = \frac{P_H}{1 - \frac{1}{6}k^2r^2 + \frac{1}{120}k^4r^4} \frac{\omega + M}{\omega_H + m} \frac{\omega_H}{\omega} \left[\frac{E}{E_H}\frac{M}{m}\left(\frac{\mu + m}{\mu + M}\right)^2\right]^{1/6}, \qquad (1);$$

k is the wave number of the photon in IV, ω the photon energy in IV, m the neutron mass, μ the π^0 mass, M the tritium mass, E the energy released in III; the quantities with the subscript H refer to π^-+p processes. The experiments were made with a He^3-filled diffusion chamber (20 atm) placed in a magnetic field of 6 koe. Among the 2372 photographs of pion stops in He^3 the processes III and IV were singled out according to the ranges of the particles involved. The relative probabilities of III and IV were $W_3 = (13.5 \pm 0.9)\%$ and $W_4 = (6.2 \pm 0.7)\%$. The Panofsky ratio was obtained as: $P = 2.16 \pm 0.28$, and from this r could be calculated: $r = (1.24^{+0.30}_{-0.46}) \cdot 10^{-13}$ cm, which is in close agreement with the value calculated by C. Werntz (Nucl.

Phys. 16, 59, 1960). The yields of III and IV were found to be somewhat higher than those predicted by Messiah (Phys. Rev. 87, 639, 1952). There are 2 figures.

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

SUBMITTED: November 16, 1962

L 14307-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD/JG

ACCESSION NR: AP3003110 S/0056/63/044/006/1852/1858 64 58

AUTHOR: Zaymidoroga, O. A.; Kulyukin, M. M.; Sulyayev, R. M.; Filippov, A. I.; Tsupko-Sitnikov, V. M.; Shcherbakov, Yu. A.

TITLE: Formation of helium mesic atoms in a hydrogen-helium gas mixture

SOURCE: Zhurnal eksper. i teor. fiziki, v. 44, no. 6, 1963, 1852-1858

TOPIC TAGS: helium mesic atom formation, helium, hydrogen, direct attachment, muon transfer

ABSTRACT: The formation of helium mesic atoms in a mixture of helium and hydrogen was studied in a diffusion cloud chamber at 19 atmospheres pressure. The experiment was performed to clarify the roles of the two possible mechanisms of helium mesic atom formation in a H-He mixture, direct attachment or via muon transfer, and as a check on an experimental procedure which permits the use of relatively small amounts of helium. The diffusion chamber was exposed to a beam of negative mesons with initial momentum 170 MeV/c from the synchrocyclotron of OIYaI. Both He sup 3 and He sup 4 were used, with nuclear concentrations 14.3 and 4.9 %, respectively. The probability of the capture of muons by helium from a hydrogen mesic atom in the ground state was found to be at least three orders of magnitude smaller than the probability of capture by carbon or oxygen nuclei,

Card 1/2

L 14307-63
ACCESSION NR: AP3003110

6

and cannot appreciably exceed 1 million per second, in agreement withtheoretical estimates made by S. S. Gershteyn (ZhETF v. 43, 706, 1962). Agreement with the Fermi-Teller "Z-law" was indicated for direct attachment of mesons to nuclei in the gas mixture. "The authors are deeply indebted to S. S. Gershteyn, P. F. Yermolov, and B. Pontecorvo for numerous valuable discussions, and to A. I. Tokarskaya and Ye. A. Shvanova for assistance with the measurements." Orig. art. has: 2 figures, 10 formulas, and 4 tables.

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

SUBMITTED: 23Jan63 DATE ACQ: 23Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 003 OTHER: 009

Card 2/2

ZAYMIDOROGA, O.A.; KULYUKIN, M.M.; PONTEKORVO, B.; SULYAYEV, R.M.; FALOMKIN, I.V.; FILIPPOV, A.I.; TSUPKO-SITNIKOV, V.M.; SHCHERBAKOV, Yu.A.

Measurement of the total probability of muon capture in He^3. Zhur. eksp. i teor. fiz. 45 no.6:1803-1807 D '63. (MIRA 17:2)

1. Ob"yedinennyy institut yadernykh issledovaniy.

ACCESSION NR: AP4018367 S/0120/64/000/001/0069/0075

AUTHOR: Aleksandrov, G. M.; Zaymidoroga, O. A.; Kulyukin, M. M.; Peshkov, V. P.; Sulyayev, R. M.; Filippov, A. I.; Tsupko-Sitnikov, V. M.; Shcherbakov, Yu. A.

TITLE: Use of helium-3 for filling a high-pressure diffusion chamber

SOURCE: Pribory* i tekhnika eksperimenta, no. 1, 1964, 69-75

TOPIC TAGS: diffusion chamber, helium-3 tritium separation, high pressure diffusion chamber, synchrocyclotron, OIYaI synchrocyclotron, high purity helium-3

ABSTRACT: A method of highly purifying helium-3 from tritium ($H^3/He^3 < 10^{-15}$) is described. Helium-3 condensation with subsequent evaporation at 1.2 K was used. The cycle was repeated 4 times; a small amount of H_2 (about 0.005%) was added prior to every liquefaction. The source gas contained 0.1% of H^3 and 0.5-1% of H_2, D, N, O, and A. The final elimination of H_2 was attained by burning it with copper oxide heated to 500C. The internal parts of the DK-2 standard diffusion chamber (see M. S. Kozodayev, et al., PTE, 1958, no. 6, p. 47) were remodeled; its volume, about 11 lit., was filled with helium-3 up to 20 atm; equipment and

Card 1/2

ACCESSION NR: AP4018367

filling details are given.The chamber was in continuous (500 hrs) operation with the OIYaI synchrocyclotron. It can be filled within 5 hrs. Gas loss at each exposure has been 0.1% or less. "The authors are deeply grateful to P. L. Kapitsa for his permission to separate He^3 from T in IFP AN SSSR, and to V. M. Kuznetsov and A. I. Filimonov for lending the equipment and their help in determining T concentrations. We are also thankful to V. P. Dzhelepov and L. I. Lapidus for their interest in the project, and to K. A. Baycher and S. F. Maly*sheva for their help in building the outfit. Mounting was performed by A. G. Zhukov, P. Ye. Laykov, N. V. Lebedev, V. I. Orekhov, V. F. Poyenko, A. G. Potekhin, and A. I. Chernetskiy, for which we thank them. We would particularly like to acknowledge the discussions as well as the active help of B. Pontecorvo throughout the project stages." Orig. art. has: 4 figures.

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

SUBMITTED: 23Feb63 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: NS NO REF SOV: 006 OTHER: 005

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413110016-4"

L 58447-65 EWT(m)/T/EWA(m)-2 23 B UR/0056/65/048/005/1267/1278

ACCESSION NR: AP5013885

AUTHOR: Zaymidoroga, O. A.; Kulyukin, M. M.; Sulyayev, R. M.; Falomkin, I. V.; Filippov, A. I.; Tsupko-Sitnikov, V. M.; Shcherbakov, Yu. A.

TITLE: Study of pion capture by He^3. I. Charge exchange and radiative capture.

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 5, 1965, 1267-1278

TOPIC TAGS: pion capture, helium, charge exchange, radiative capture, Panofsky [illegible] factor, relative probability

ABSTRACT: This is a continuation of an earlier paper by the authors (ZhETF v. 44, [illegible] the ratio of the probabilities [illegible] [illegible] pions by He^3 (the Panofsky ratio). The diffusion chamber was described elsewhere (PTE No. 1, 69, 1964). The experimental apparatus and [illegible] measurements are described in detail. The experimental values obtained for the Panofsky ratio [illegible] with the calculations of B. V. Struminskiy (Preprint OIYaI, E-1012; Proc. 1962 Intern. Conf. on High Energy Physics at CERN p. 17); [illegible]

Card 1/2

L 58447-65

ACCESSION NR: AP5013885

10

determine the nuclear form factor and the mean square nuclear radius corresponding to the distributions of the centers of the nucleons. The value of the Panofsky ratio is ± 0.18, that of the nuclear form factor is F = ... (for a ... meter q^2 = 0.47 F^{-2}), and the relative probability ... exchange and radiative capture are found to be $W(H^3\pi^0)$ = (15.8 ± 0.8)% and $W(H^3\gamma)$ = (6.9 ± ± 0.5)%. "The authors thank B. Pontecorvo and B. V. Struminskiy for a discussion of the results, and A. G. Zhukov, N. V. Lebedev, V. I. Oreshkov, V. F. Povenko, A. ... A. I. Tokarskaya and Ye. A. Shvaneva for assistance with the measurements." Orig. art. has: 6 figures, 10 formulas and 3 tables.

ASSOCIATION: Ob"edinennyy institut yadernykh issledovaniy (Joint Institute of ... search)

SUBMITTED: 30Dec64 ENCL: 00 SUB CODE: NP

NR REF SOV: 003 OTHER: 004

137

Card 2/2

FILIPPOV, A.I., inzh.

Addition to the start network of a synchronous motor. Energetik 11 no.9:17-18 S '63. (MIRA 16:10)

IVANOV, Nikolay Yakovlevich; LEBEDEV, Sergey Sergeyevich; MALITSKIY, Aron Il'ich; FILIPPOV, Aleksandr Il'ich; MIKAEL'YAN, T.S., red.; SAYTANIDI, L.D., tekhn. red.

[Mechanized raising and harvesting of buckwheat and millet] Mekhanizatsiia vozdelyvaniia i uborki grechikhi i prosa. Moskva, Izd-vo M-va sel'.khoz. RSFSR, 1962. 33 p. (MIRA 16:4)
(Buckwheat) (Millet) (Agricultural machinery)

MOROZOV, Konstantin Pavlovich [deceased]; NIKOLAYEV, M.N., inzh., retsenzent; FILIPPOV, A.I., prepodavatel', retsenzent; PLYUSNIN, A.K., otv. red.

[Repair of machines and mechanisms in logging camps] Remont mashin i mekhanizmov na lesozagotovkakh. Izd.2., ispr. i dop. Moskva, Lesnaia prom., 1964. 510 p. (MIRA 17:8)

1. Gosplan RSFSR (for Nikolayev). 2. Petrozavodskiy lesotekhnicheskiy tekhnikum (for Filippov).

S/263/62/000/003/008/015
I004/I204

AUTHOR: Filippov, A. I.

TITLE: Sensitive monitors for measurement of water temperature pulsations

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. Izmeritel'naya tekhnika, no. 3, 1962, 39, abstract 32.3.238. "Tr. Instituta okeanol. AN SSSR", 1961, 47, 99–102

TEXT: A description is given of two types of monitors for measurement of water temperature pulsations. The monitor of the first type is in the form of a thermopile consisting of 1000 copper-constantan thermocouples. The latter were made of a constantan wire 0.3 mm dia wound spirally over an organic glass cylinder. Half of the junctions of all thermocouples were inserted into the body of an organic glass cylinder while the second half (the operation junctions) were distributed over the surface of the cylinder. The upper frequency limit for this monitor is 2.7 cps while the lower limit is 0.026 cps. Temperature variations were registered on a ПОБ-14 (POB-14) oscillograph with a minimum reading of 0.0004°C per 1 mm. The thermocouples of the monitors of the second type were made by welding copper and constantan wires 0.1 mm dia. The frequency range covered by the monitor extended from 0.0025 to 14.3 cps. The monitor was connected to an oscillograph by means of an amplifier with a gain of 1,200,000. There are 3 figures.

[Abstracter's note: Complete translation.]

Card 1/1

FILIPPOV, A. K.

"Foot and Mouth, and the Fight against it"
Chkalov. Chkalizdat. 1952. 44 pages with illustrations.
SO: Vet., July 1952, Unclassified.

KAPITSA, A.P.; VORONOV, P.S., kand. geologo-mineral. nauk, red.; FILIPPOV, A.K., red.; DROZHZHINA, L.P., tekhn. red.

[Transactions of the Soviet Antarctic Expedition, 1955] Trudy Sovetskoi antarkticheskoi ekspeditsii, 1955- . Leningrad, Izd-vo "Morskoi transport." Vol.18. [Dynamics and morphology of the ice cap in the central sector of eastern Antarctica] Dinamika i morfologiia lednikovogo pokrova tsentral'nogo sektora Vostochnoi Antarktidy. Pod red. P.S. Voronova. 1961. 92 p. (MIRA 15:3)

1. Sovetskaya antarkticheskaya ekspeditsiya, 1955-.
(Antarctic regions--Ice)

FILIPPOV, A.K., inzh.

Automatic braking system for the transportation of peat. Torf.prom. 37 no.3:20-22 '60. (MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut torfyanoy promyshlennosti.

(Peat --Transportation)

FILIPPOV, Anatoliy Kuz'mich; LAPINA, Z.D., red.; LAVRENOVA, N.B., tekhn. red.

[On Faddey Island] Na ostrove Faddeevskom. Moskva, Izd-vo "Morskoi transport," 1962. 98 p. (MIRA 15:8)
(Faddey Island--Description, Geography)

FILIPPOV, A. Kh.

Measurements made by the use of the electrolytic cell in model studies of atmospheric electricity. Trudy GGO no.97:101-103 '60.
(MIRA 13:8)
(Atmospheric electricity—Electromechanical analogies)

Filippov, A. Kh.

PHASE I BOOK EXPLOITATION SOV/4316
SOV/2-3-97

Leningrad. Glavnaya geofizicheskaya observatoriya

Voprosy atmosfernogo elektrichestva (Problems in Atmospheric Electricity) Leningrad, Gidrometeoizdat, 1960. 115 p. (Series: Its: Trudy, vyp. 97) Errata slip inserted. 1,000 copies printed.

Sponsoring Agency: USSR. Glavnoye upravleniye gidrometeorologicheskoy sluzhby.

Ed. (Title page): I.M. Imyanitov, Candidate of Physics and Mathematics; Ed. (Inside book): T.V. Ushakova; Tech. Ed.: N.V. Volkov.

PURPOSE: This publication is intended for meteorologists and scientists concerned with the problem of atmospheric electricity. The book can also be used by graduate students at hydrometeorological institutes and by university students studying physics of the atmosphere.

COVERAGE: This issue of the Transactions of the Main Geophysical Observatory im. A.I. Voyeykov contains works on problems in atmospheric electricity written from 1954 to 1958. Individual articles deal with the electrical phenomena associated with thunderstorms, clouds, rains, and fogs. Observational techniques and instruments used are described. No personalities are mentioned. References accompany individual articles.

AVAILABLE: Library of Congress

Card 4/4

JA/dwm/mas
10-14-60

3,5132

S/169/62/000/008/039/090
E202/E192

AUTHOR: Filippov, A.Kh.

TITLE: Electrical field in the atmosphere prior to, and during, thunderstorm in Irkutsk

PERIODICAL: Referativnyy zhurnal, Geofizika, no.8, 1962, 33-34, abstract 8 B 246. (In the collection: "Issled. oblakov, osadkov i grozovogo elektrichestva" ('Studies of clouds, precipitations and thunderstorm electricity'), M., AN SSSR, 1961, 254-258).

TEXT: The observations have shown that the clouds of the upper and medium strata have substantially no effect on the value of the potential gradient, while the clouds of the lower stratum lower the potential gradient. The beginning of rain causes a sharp fall in the potential gradient and further rainfall is as a rule connected with rapid aperiodic variations of the potential gradient. The average value of the potential gradient during the rainfall is either positive or negative. Certain types of the variation of potential gradient during thunderstorms are explained.

Card 1/2

Electrical field in the atmosphere... S/169/62/000/008/039/090
E202/E192

An attempt is made to assess the magnitude of the electrical moment of a thunderstorm cloud, interpreting the cloud as a dipole.

[Abstractor's note: Complete translation.]

Card 2/2

L 12759-63 EWT(1)/BDS/ES(v) AFFTC/ASD/ESD-3 Pe-4 RB

S/169/63/000/004/012/017

AUTHOR: Filippov, A. Kh. 61

TITLE: Some results from observations of elements of atmospheric electricity at Irkutsk during the IGY and the IGC

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 4, 1963, abstract 4B236 (Sb. materialy konferentsiy po itogam IGY (1960) i meteorol. izuch. Antarktidy (1959). M. Gidrometeoizdat, 1961, 255-259)

TEXT: Measured values of the potential gradient of the atmospheric electric field (1958-1959) and of the conductivity of the air (1959) were used in constructing diurnal and annual curves of these quantities. The author believes that the curves have the form of a simple wave with maxima at 19-21 hours for the diurnal curve and in the winter for the annual curve. The conductivity of the air varies in opposite phase to the potential gradient. Rapid changes in the strength of the electrostatic field during storm discharges were measured by means of an electrostatic fluxmeter set up on the ground surface. Curves of the restoration of the field were generated by the sums of

Card 1/2

L 12759-63

S/169/63/000/004/012/017

Some results from observations of elements...

two exponents. Current measurements at spikes indicated that the ground surface acquired a negative charge at Irkutsk during the storms which were observed.

[Abstracter's note: Complete translation.]

Card 2/2

SMIRNOV, V.K., inzh.; FILIPPOV, A.M., inzh.

Dynamic calculation of the BTST3 chain-type pusher. Vop. rud. transp. no.5:400-405 '61. (MIRA 16:7)

(Mine railroads--Cars)

FILIPPOV,A.M.; PARFENOV,Yu.A.; MOROZOVA,A.D.; TOMCHIN,B.Z.; SHAFRAN,B.I., otv. red.; CHESNOKOVA, T.V., red.; SLUTSKIN, A.A., tekhn. red.

[Handbook on electric measurements in municipal telephone lines] Rukovodstvo po elektricheskim izmereniiam linii gorodskikh telefonnykh setei. Moskva, Sviaz'izdat, 1962. 120 p. (MIRA 16:6)

1. Russia (1923- U.S.S.R.) Upravleniye mestnoy telefonnoy svyazi i radiofikatsii. 2. Sotrudniki lineyno-kabel'noy laboratorii Nauchno-issledovatel'skogo instituta gorodskoy i sel'skoy telefonnoy svyazi Ministerstva svyazi SSSR (for Parfenov, Morozova, Filippov). (Telephone lines)
(Electric measurements--Handbooks, manuals, etc.)

SHTOKMAN, Il'ya Grigor'yevich, prof.; EPPEL', Leonid Isaakovich; FILIPPOV, Aleksandr Mikhaylovich; SAMOYLYUK, N.D., kand. tekhn. nauk, retsenzent; FROLOVA, Ye.I., red.izd-va; SABITOV, A., tekhn. red.

[Operation of underground conveyers] Ekspluatatsiia podzemnykh konveierov. Moskva, Gosgortekhizdat, 1963. 202 p. (MIRA 16:12)

(Mine haulage)

FILIPPOV, A. M.

57

PHASE I BOOK EXPLOITATION SOV/5460

Leningradskiy metallicheskiy zavod. Otdel tekhnicheskoy informatsii.

Nekotoryye voprosy tekhnologii proizvodstva turbin (Certain Problems in the Manufacture of Turbines) Moscow, Mashgiz, 1960. 398 p. (Series: Its: Trudy, vyp. 7) Errata slip inserted. 2,100 copies printed.

Sponsoring Agency: RSFSR. Sovet narodnogo khozyaystva Leningradskogo ekonomicheskogo administrativnogo rayona, Upravleniye tyazhelogo mashinostroyeniya, and Leningradskiy dvazhdy ordena Lenina metallicheskiy zavod. Otdel tekhnicheskoy informatsii.

Ed. (Title page): G. A. Drobilko; Editorial Board: Resp. Ed.: G. A. Drobilko, B. A. Glebov, A. M. Mayzel', and M. Kh. Mernik; Tech. Ed.: A. I. Kontorovich; Managing Ed. for Literature on Machine-Building Technology: Ye. P. Naumov, Engineer, Leningrad Department, Mashgiz.

PURPOSE: This collection of articles is intended for technical personnel in turbine plants, institutes, planning organizations, as well as for production innovators.

Card ~~1/12~~

57

Certain Problems (Cont.) SOV/5460

COVERAGE: The experience of the LMZ (Leningradskiy metallicheskiy zavod - Leningrad Metalworking Plant) in the manufacture of modern large-capacity turbines is presented. Methods for the rationalization of basic manufacturing processes and for the mechanization and automation of manual operations are given. Descriptions of attachments and tools designed by LMZ for improving labor productivity and product quality are provided, and advanced inspection methods discussed. References accompany some articles. No personalities are mentioned. There are 26 references: 25 Soviet and 1 English.

TABLE OF CONTENTS:

Card ~~2/12~~

SHTOKMAN, I.G., prof.; TIMOSHKIN, V.A., kand.tekhn.nauk; KRASILOVSKIY, L.S., inzh.; IL'CHENKO, A.I., inzh.; BERLIN, M.Ya., inzh.; SMIRNOV, V.K., inzh.; EPPEL', L.I., inzh.; FILIPPOV, A.M., inzh.

New two-member sectional TsDR traction chain for underground scraper conveyers. Ugol' Ukr. 6 no.2:33-34 F '62. (MIRA 15:2)
(Conveying machinery)