SHAPOSHNIKOV, V. N.; SILAYEV, A. B.; NEFELOVA, M. V.; ORLOVA, T. I.; KUZNETSOVA, V. S.; MIRONOVA, I. B.; ZUBOVA, O. V.

"Directed biosynthesis of aurantin and investigation of biological and chemical properties of new aurantin fractions."

report submitted for Antibiotics Cong, Prague, 15-1, Jun 64.

Lab of Antibiotics, Faculty of Soil Biology, Moscow State Univ.

NEFEDOVA, [illegible]; KOL[illegible]AN, A. [illegible]

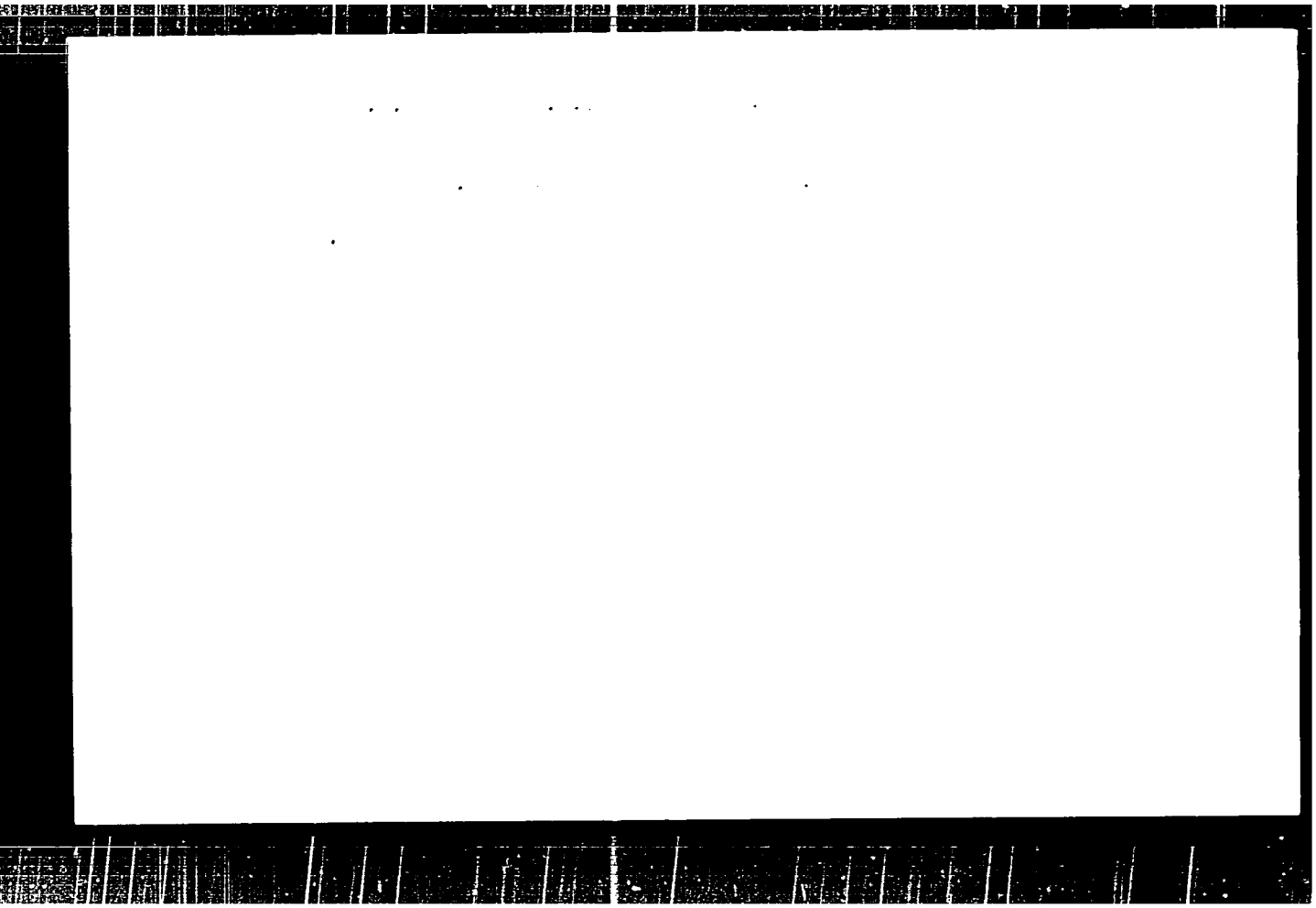
Comparative study [illegible] ... Mikrobiologiia [illegible] -Ap '63.

[illegible]

SHAPOSHNIKOV, V.N.; NEFELOVA, M.V.; ORLOVA, T.I.; SILAYEV, A.B.

Effect of levomycetin on the development and antibiotic-formation activity in organisms producing aurantin. Antibiotiki 10 no.1 13-18 Ja '65. (MIRA 18:)

1. Biologo-pochvennyy fakul'tet Moskovskogo universiteta imeni Lomonosova.



SILAYEV, A.B.; ORLOVA, T.I.; NEFELOVA, M.V.

Free amino acids in actinomyces producing aurantin. Antibiotiki 9 no.9:788-792 S '64. (MIRA 19:1

1. Biologo-pochvennyy fakul'tet Moskovskogo universiteta imeni Lomonosova.

OLONTSEVA, R.Ya.; NEFEDOVA, M.V.

Effect of liner rings on the productivity of gas pipelines. Trudy VNII no.5:205-207 '54. (MLRA 9:1)

(Gas, Natural--Pipelines)

SOV 124-58-7-7543

Translation from Referativnyy zhurnal: Mekhanika, 1958, Nr 7, p 12 (USSR)

AUTHORS: Khodanovich, I.Ye., Netelova, N.V.

TITLE: On the Pressure Conditions in a Gas Conduit as It Fills up With Gas (O rezhime davleniy v gazoprovode pri zapolnenii yego gazom)

PERIODICAL: Tr. Vses. n.-i. in-t prirodn. gazov, 1957, Nr 10(9), pp 10-16

ABSTRACT: It is pointed out that in a gas main in the process of being filled with gas the pressure in it increases as a function of the quantity of gas Q being pumped in, the length and diameter of the conduit, and the time t. It is stated that there are two possible ways of filling a gas conduit with gas: 1) the gas is fed into an empty conduit or into one in which atmospheric pressure prevails, 2) the gas is fed into a conduit which is already filled with gas and in which the prevailing pressure is greater than that of the atmosphere. The first case has been theoretically examined by Ribaud (Ribaud, G., C.r. Acad. sci., 1951, Vol 233, 1952, Vol 234), who from the equations of motion and continuity obtained the following formulae for the pressure P_x and the gas flow rate Q_x along the conduit during the filling operation

Card 1/2

SOV 124-58-7-7543

On the Pressure Conditions in a Gas Conduit as It Fills up With Gas

$$P_x = P\sqrt[3]{t}\,F(axt^{-2/3}) \qquad Q_x = Q\varphi(axt^{-2/3})$$

wherein x is the distance from the starting point to the conduit section under study, t is the time elapsed, P_x and P are the pressures, Q_x and Q are the gas flow rates, a is a coefficient, and F and φ are certain functions. When simplifying assumptions are made with respect to the functions F and φ, and when certain other assumptions are adopted, engineering formulae are evolved which determine the quantity of gas passing through any section of the conduit at a given moment and the pressure at any point in the conduit. Examples of calculations are examined. The fact is mentioned that an experimental test made in the Kokhtla-Yarve-to-Tallin conduit showed a satisfactory agreement between calculated and observed pressures. A similar comparison of the observed gas volumes traversing given sections of the conduit with the calculated volumes was not made.

G.Ye. Khudyakov

Card 2/2

KHODANOVICH, I.Ye.; MAMAYEV, V.A.; NEFELOVA, N.V.; GANCHEVA, G.P.

Pressure change in a pipeline during the unsteady gas flow.
Trudy VNIIGAZ no.8:14-26 '60. (MIRA 15:5)
(Gas, Natural--Pipelines)

KHODANOVICH, I.Ye.; NEFELOVA, N.V.; ODISHARIYA, G.E.; MAMAYEV, V.A.; GANCHEVA, G.I.; KIM, L.Ye.

Study of regularities of pressure change and gas movement along a gas pipeline in unsteady flow. Trudy VNIIGAZ no.13:3-26 '61. (MIRA 14:12)

(Gas, Natural--Pipelines)

KHODANOVICH, I.Ye.; MAMAYEV, V.A.; ODISHARIYA, G.E.; NEFEDOVA, N.

Method of hydraulic calculation of pipelines for transporting a gas-liquid mixture. Trudy VNIIGAZ no.13:73-81 61. (MIRA 14:12)
(Gas, Natural--Pipelines)

KHODANOVICH, I.Ye.; NEFELOVA, N.V.; KHIVOSHEIN, B.L.

Effect of the hydraulic resistances of pipeline stopclocks on the flow-through capacity of gas pipelines. Trudy VNIIGAZ no.21/29:72-77 '64. (MIRA 17:9)

RASHKOV,K.; SHTROKORAS, T.; [illegible]

Arthrax in the T[illegible]. Sutr. [illegible]
(Sofiia) 15 no.6[illegible]

NEFTLANOVA, El.; KUNEV, P.

Infectiousness to people of the strain of Brucellosis suis spread in Bucgaria. Izv Vet inst zaraz parazit 7 57-60 '63.

NEGADAYEV-NIKONOV, K.N.; ARAPOV, A.A.

Terraces of the Prut Valley in the central part of Moldavia.
Izv. AN Mold.SSR no.7:3-11 '64.

(MIRA 18:12)

NEGADAYEV-NIKONOV, K.N.; ARAPOV, A.A.; CHEPALYGA, A.L.

Quaternary terraces of the Reut basin. Izv. AN Mold.SSR no.7:12-21 '64. (MIRA 18:1)

NEGADAYEV, N. N.

USSR/Minerals
Geology

Oct 1947

"Rostov Scientific Geological Society," I. D. Sedletskiy, Pres of Soc; N. N. Negadayev, Secy of Soc, ½ p

"Zapiski Vserossiy Mineralo Obshchest" Series 2, Part LXXVI, No 3

Reports first meeting of Rostov Scientific Geological Society convened at State University imeni V. M. Molotov, 19-22 Apr 1947. Names members of the board, and gives roster of members. Some 200 members admitted. Asserts prime duty of society is to assist State in development of natural mineral resources of USSR.

PA 52T75

NEGADAYEV-NIKONOV, K. N.

Negadayev-Nikonov, K. N. "Stratigraphy of the lower Surrassic volcanogenic formations in the region of the Pasnal'skiy sites of East Igoriya," --- In table of contents: Negadayev-Nikonov K.N. --- Uch n. zapiski (Rost. n/D gos. un-t im. Molotova), Vol. XI, 1948, p. 85-95 ---Bibliog: 17 items

SO: U-3566, 15 March, 53 (Letopis 'Zhural 'nykh Statey, No. 14, 1949).

NEGODAYEV-NIKONOV, K. N. PA 8/49T2

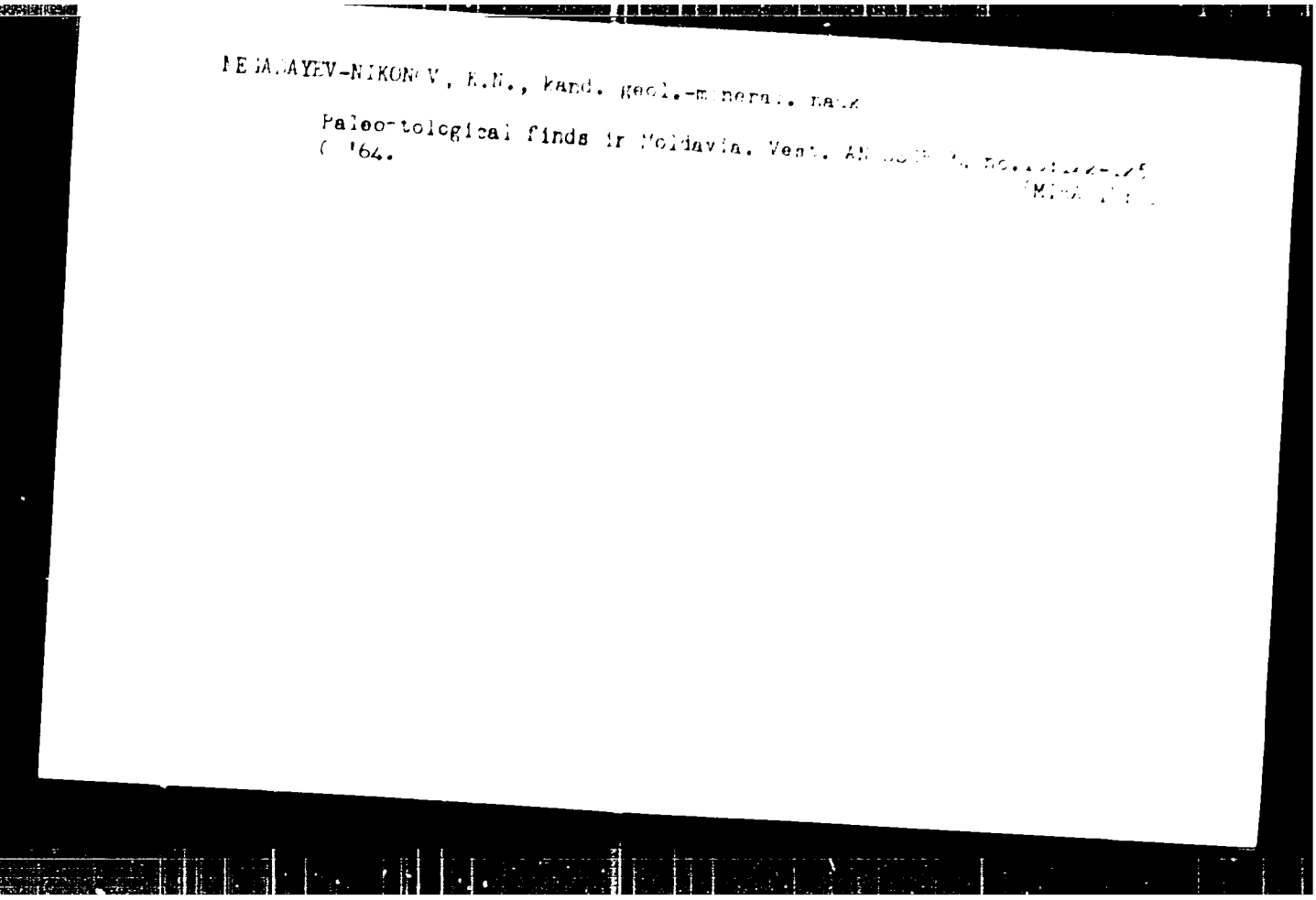
USSR/Academy of Sciences
Geology Jul/Aug/Sep 48

"Activity of the Rostov Geological Society," K. N. Negodayev-Nikonov, Sci Secy, 2 pp

"Zapiski V-S Mineral Obshch" Part 77, No 3

Briefs more important work of the Society since its founding 16 Apr 1947. Lists members.

8/49T2



MELIKAYEV-NIKONOV, K.N., kand. biol.-mineral. nauk

Paleo-tological finds in Moldavia. Vest. AN [illegible]
('64.

NEGADAYEV-NIKONOV, K.N.

USSR/Geology

Card 1/1 : Pub. 22 - 38/46

Authors : Vasilenko, V. P., and Negadaev-Nikonov, K. N.

Title : Lower Paleocene of the north-eastern section of the Don Basin

Periodical : Dok. AN SSSR 97/4, 719-721, Aug 1, 1954

Abstract : Geological data on the lower deposits of the Paleocene era in the northeastern region of the Don Basin in Ukr-SSR. Four references: 3-USSR and 1-Swedish (1946-1950).

Institution : State University, Kishinev

Presented by: Academician S. I. Mironov, May 27, 1954

15-1957-12-16980

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 12, p 41 (USSR)

AUTHOR: Negadayev-Nikonov, K. N.

TITLE: Ostracod Fauna of Quaternary Deposits in the Regions of the Volga-Don Irrigation System. (Fauna ostrakoda chetvertichnykh otlozheniy rayonov Volgo-Donskoy orositel'noy sistemy)

PERIODICAL: Uch. zap, Kishinevsk. un-ta, 1955, vol 10, pp 145-156

ABSTRACT: Bibliographical entry

Card 1/1

NEGADAYEV-NIKONOV, K.N.

Methods for handling specimens in microfaunistic research. Vop. mikropaleont. no.6:149-153 '62.
(MIRA 15:11)

1. Institut geologii AN Moldavskoy SSR.
(Micropaleontology)

BOBRINSKIY, V.M.; BUKATCHUK, I.D., BURGELYA, N.K.; DRUMYA, A.V.; KAPTSAN, V.Kh.; MAKARESKU, V.S.; NEVRYANSKIY, B.G.; NEGADAYEV-NIKONOV, K.N.; PEBES, F.S.; ROMANOV, L.F.; ROSHKA, V.Kh.; SAFAROV, E.I.; SAYANOV, V.G.; SOBETSKIY, V.A.; TKACHUK, V.A.; KHUBKA, A.N.; EDEL'SHTEYN, A.Ya.; LUTOKHIN, I., red.

[Paleogeography of Moldavia] Paleogeografiia Moldavii. Kartia, moldovenaske, 1967. 245 p. (MIRA 18:9)

1. Otdel palenotologii i stratigrafii AN Moldavskoy SSR (for Negadayev-Nikonov, Roshka, Romanov, Sobetskiy, Khubka). 2. Institut geologii i poleznykh iskopayemykh Gosudarstvennogo geologicheskogo komiteta SSSR (for Bobrinskiy, Burgelya, Nevryanskiy, Tkachuk, Edel'shteyn). 3. Opornaya seysmostantsiya AN Moldavskoy SSR (for Drumya). 4. Gosudarstvennyy proizvodstvennyy geologicheskiy Komitet Moldavskoy SSR (for Bukatchuk, Kaptsan, Safarov).

NEGADAYEV-NIKONOV, K.N.; SAFAROV, E.I.

Activities of the Geological Section of the Ann.versary [illegible] of the Academy of Sciences of the Moldavian S.S.R. Sov. [illegible] no.2:146-149 F '65. (MIRA [illegible])

BOBRINSKAYA, O.G.; BOBRINSKIY, V.M.; BUKATCHUK, P.D.; DANICH, M.M.; KAPTSAN, V.Kh.; NEGADAYEV-NIKONOV, K.N.; POPOVA, T.V.; ROSHKA, V.Kh.; SAFAROV, E.I.; SOBETSKIY, V.A.; EDEL'SHTEYN, A.Ya.; BURGELYA, N.K., red.; DRUMYA, A.V., red.; KUZNETSOVA, E.,red.

[Stratigraphy of sedimentary formations in Moldavia] Stratigrafiia osadochnykh obrazovanii Moldavii. Kishinev, Kartia moldovenianske, 1964. 129 p. (MIRA 19:1)

1. Otdel paleontologii i stratigrafii AN Moldavskoy SSR (for Bobrinskaya, Danich, Negadayev-Nikonov, Popova, Roshka, Sobetskiy). 2. Institut geologii i poleznykh iskopayemykh, gorod Kishinev (for Bobrinskiy, Edel'shteyn). 3. Upravleniye geologii i okhrany nedr pri Sovete Ministrov Moldavskoy SSR (for Bukatchuk, Kaptsan, Safarov).

USSR/Cosmochemistry. Geochemistry. Hydrochemistry.

Abs Jour : Ref Zhur - Khimiya, No. 2, 1957, 06560.

Author : Neganov, A.F.
Inst : Saratov University.
Title : Some Peculiarities of Geochemistry of Soils in Regions of Natural Gas and Mineral Oil Occurrences.

Orig. Pub : Uch. zap. Saratovsk. un-ta, 1956, [illegible], 31 - 36.

Abstract : The following elements were found dispersed in states soluble in water: B - in all rocks (with the exception of dolomites) in micro-quantities, Br - 0.00018% in Carboniferous clays, 0.0018 to 0.0022% in Devonian clays and sandstones, and none in dolomites and limestones. I and Ba were not detected in rocks, traces of Sr were found in clays.

Card 1/1

MEGANOV, A.F.; CHIGURYAYEVA, A.A.

Paleogeography of the loess plateau of China. Uch. zap. Sar. un. 64:39-44 '59. (MIRA 13:9)
(Shensi Province--Paleobotany, Stratigraphic)

L 32723-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6020197 SOURCE CODE: UR0056/66/050/006/1445/1457

AUTHOR: Neganov, B.; Borisov, N.; Liburg, M.

ORG: [Neganov] Joint Institute of Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy); [Borisov, Liburg] Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Method of obtaining infralow temperatures, based on the dissolution of He^3 in He^4

SOURCE: Zh eksper i teor fiz, v. 50, no. 6, 1966, 1445-1457

TOPIC TAGS: liquid helium, low temperature phenomenon, cryogenic liquid cooling, cryogenic refrigerator

ABSTRACT: The method described was originally proposed by London, Clarke, and Mendoza (Phys. Rev. v. 128, 1992, 1962 and earlier) and is based on the use of the latent heat of dissolution of liquid He^3 in He^4. The refrigeration cycle is produced by continuously separating the two components at a higher temperature. The heat-transfer circuit is shown in Fig. 1 and the mechanics of separating and recirculating the He^3 is shown in Fig. 2. The authors review the theory of the method, describe the continuous dissolution and circulation, present thermodynamic calculations of the cooling capacity of the equipment, and present a description of the complete apparatus and of the results. A temperature of 0.1K can be maintained with a heat supply of 1800 erg/sec and with He^3 circulation of 1.84×10^{-4} mole/sec. In the absence of external heat supply the temperature of the solution can be maintained at ~0.056K. If

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ACC NR: AP6020197

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the ambient conditions do not change, the temperature can be maintained constant within ~0.001K. Later experiments, based on data on the solubility of He^3 at ~0.01K (A. C. Anderson et al. Phys. Rev. Lett. v. 16, No. 7, 1966), stimulated the construction of a larger heat exchanger, yielded temperatures down to 0.025K, and made possible a temperature of 0.1K to be maintained at 1300 erg/sec supply. The authors thank Professor V. P. Dzhelepov for an opportunity to perform the work, L. B. Perfenev for participating in the first experiments, N. I. Kvitkov and F. A. Nikolayev for preparing the vital units of the apparatus, and the staff of the cryogenic laboratory of OIYaI for continuously supplying liquid helium under difficult conditions. Orig. art. has: 6 figures and 8 formulas. [02]

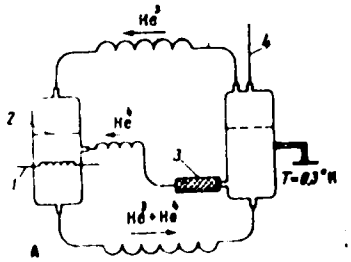

Fig. 1. Diagram of experiment on heat transfer between baths A and B by continuous solution of He^3 in He^4. 1 - Heater, 2 - phase separation boundary, 3 - superfluid filter, 4 - capillary to fill the system

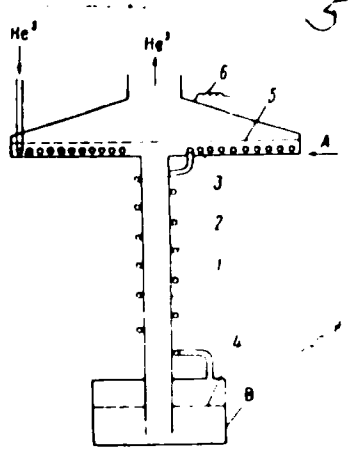

Fig. 2. Schematic diagram of apparatus

SUB CODE: 20/ SUBM DATE: 10Dec65/ ORIG REF: 002/ OTH REF: 009 / ATD PRESS: 5025

Card 2/2 JS

Neganov, B.S.

USSR/ Physics - Nuclear physics

Card 1/1 Pub. 22 - 19/63

Authors : Meshcheryakov, M.G., member correspondent of the Acad. of Scs. of the USSR; Bogachev, N.P.; Neganov, B.S.; and Piskarev, E.V.

Title : Elastic dispersion of protons by protons of 460 mev energy

Periodical : Dok. AN SSSR 99/6, 955-958, Dec 21, 1954

Abstract : Experiments, intended to throw light on the nature of the dispersion of protons by protons of high energies, are described. The experiments were conducted with beams of protons of 10^6 protons per cm^2 intensity obtained in the synchrocyclotron at the Institute of Nuclear Problems of the Acad. of Scs. [illegible]. The cross section of the proton dispersion was determined by means of deflected and recoiled protons of the elastic dispersion observed through two "conjugated" counters (telescopes). Diagrams show the results of experiments. Twelve references; 3-USSR (1950-1954). Graphs; diagrams.

Institution: The Institute of Nuclear Physics of the Acad. of Scs. of the USSR

Submitted: .....

NEGAMOV, B.S.

USSR/Nuclear Physics - Proton reactions

Card 1/1 Pub. 22 - 20/63

Authors : Meshcheryakov, M.G., member correspondent of the Acad. of Scs. of the USSR; Negamov, B.S.; Soroko, L.M.; and Vzorov, I.K.

Title : Anomalous change in the cross section of the elastic dispersion of protons by protons of 460-660 mev

Periodical : Dok. AN SSSR 99/6, 959-961, Dec 21, 1954

Abstract : Experiments with dispersions of protons of high energies were conducted in order to clarify the observed anomalous change in the cross section of an elastic dispersion of protons by protons of 460-660 Mev. A description of these experiments is presented. Eleven references; 3-USSR (1951-1954). Diagram.

Institution: Institute of Nuclear Problems of the Acad.of Scs. of the USSR

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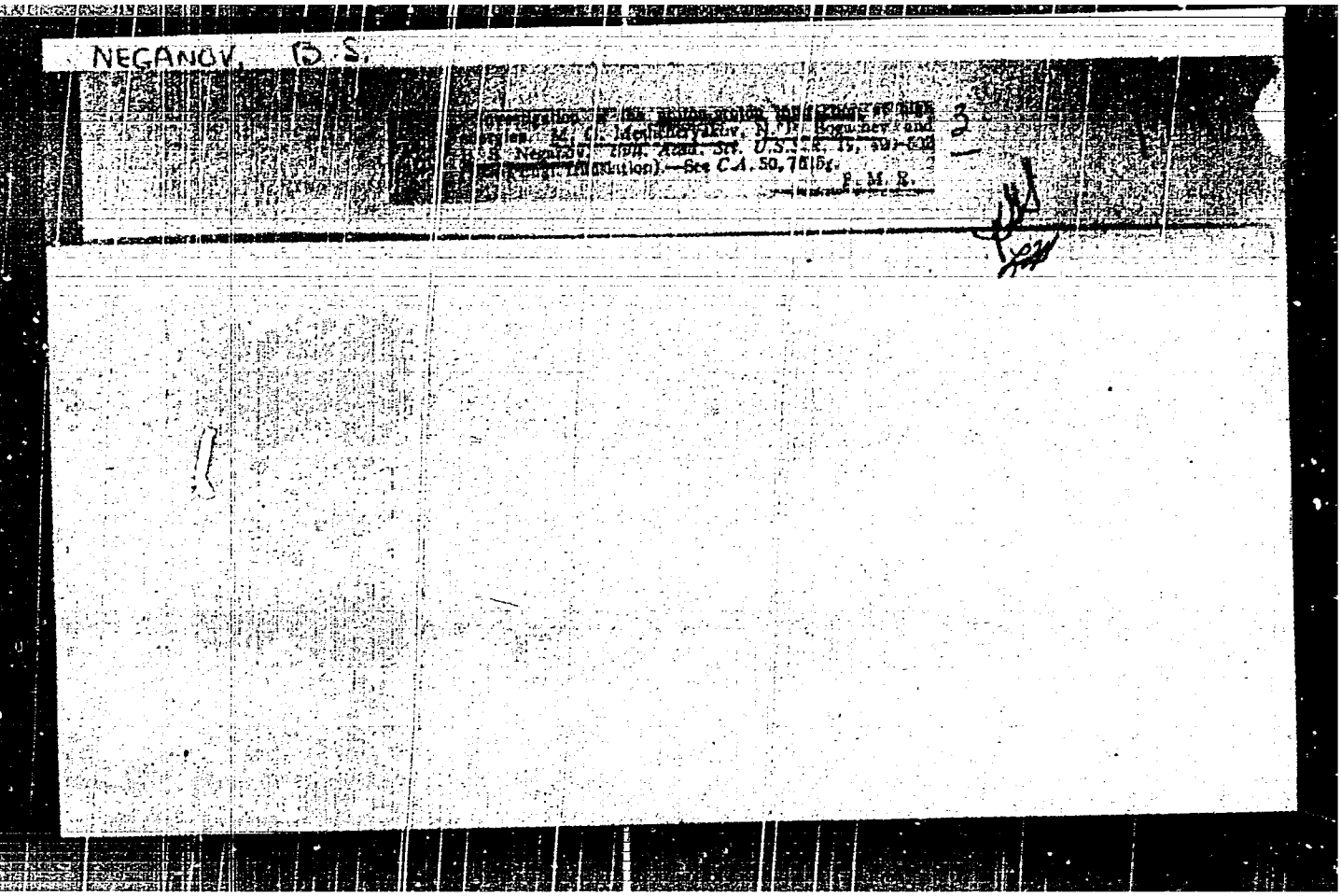


MESHCHERYAKOV, M.G.; BOGACHEV, N.P.; MEGANOV, B.S.

Investigation of proton-proton interactions at high altitudes.
Izv.AN SSSR.Ser.fiz. 19 no.5:548-560 S-O '55. (MLRA 9:4)

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

NEGANOV, B.S.

USSR/ Physics - Pie-mesons

Card 1/1 : Pub. 22 - 17/60

Authors : Mashkheryakov, M. G., Memb. Corresp. of the Acad. of Scs., USSR; Neganov, B. S.; Bogachev, N. P.; and Sidorov, V. M.

Title : The p+p → d+π+ reaction at 460 Mev

Periodical : Dok. AN SSSR 100/4. 673-676. Feb 1, 1955

Abstract : Experiments with the p+p → d+π+ reactions are described. The experiments were intended to establish a relationship between the nuclear cross-sections and the proton energy. The experiments showed that the cross-section of the above reaction increased by 8 times when the proton energy was increased from 340 up to 460 Mev. and kinetic energy of π -mesons increased from 22 Mev. up to 72 Mev. The experiments also show the angular distribution of π -mesons due to p+p → d+π+ reaction. Ten references: 3 USSR and 7 USA (1951-1954). Diagrams; graphs.

Institution : Acad. of Scs., USSR, Institute of Nuclear Problems

Submitted : .....

NEGANOV, B.S.

USSR/Physics - Pie-mesons

Card 1/1 : Pub. 22 18/60

Authors : Meshcheryankov, M. G., Memb. Corresp. of the Acad. of Scs., USSR; and Neganov, B. S.

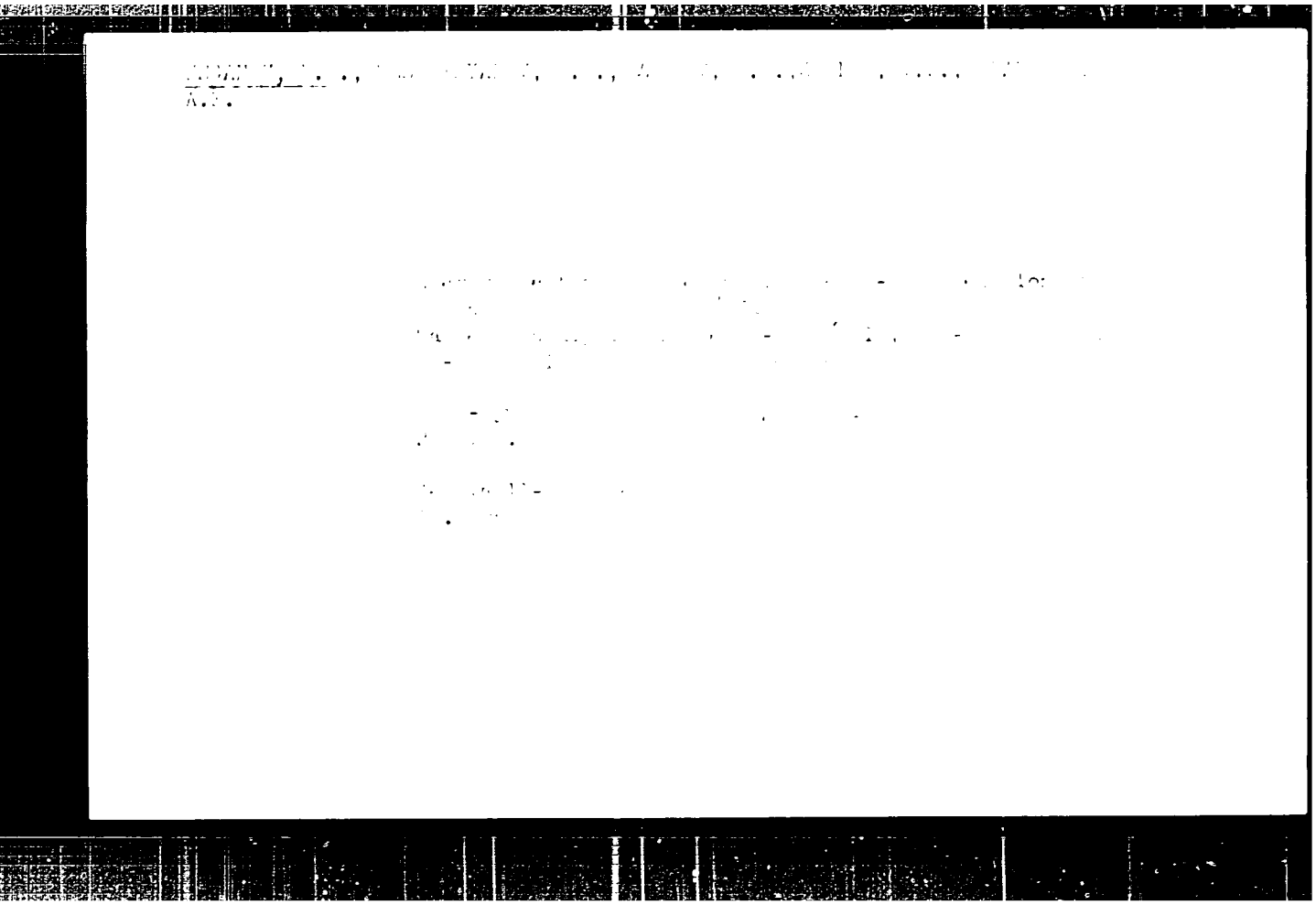
Title : Meson formation in the reaction $p+p \rightarrow d+\pi^+$ in the region of 510-660 Mev.

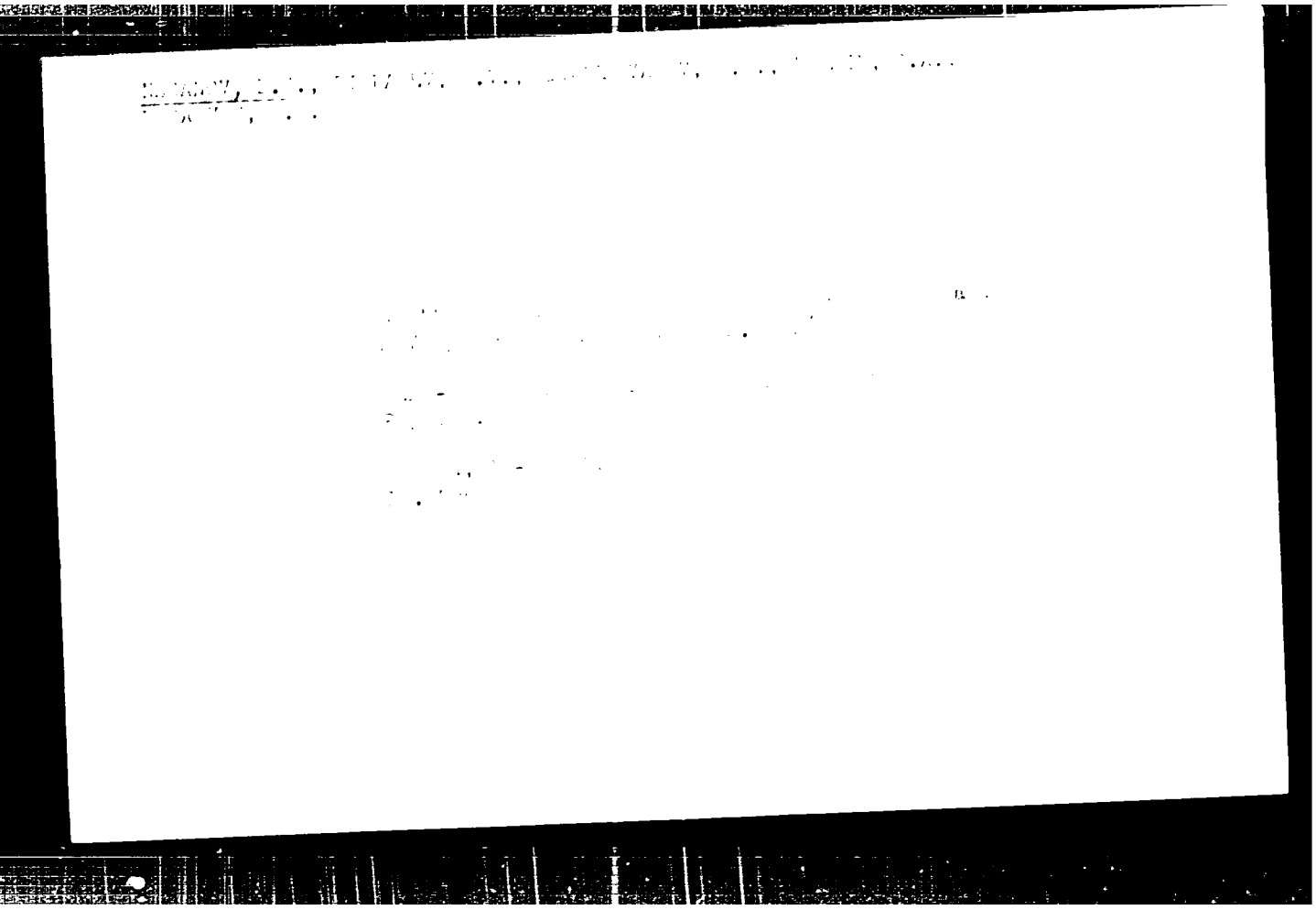
Periodical : Dok. AN SSSR 100/4, 677-679, Feb 1, 1955

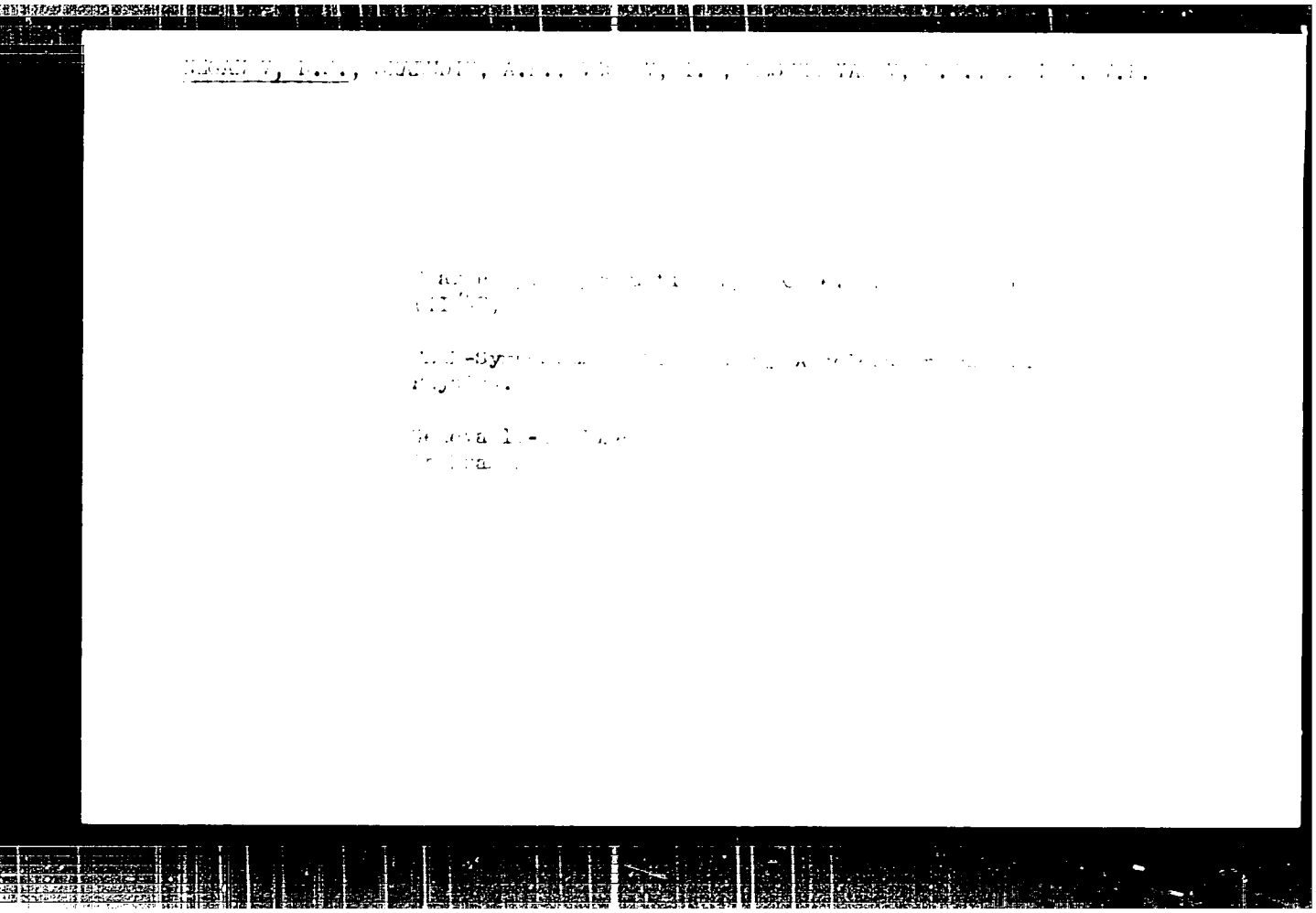
Abstract : Experiments with high-energy protons are described. The experiments were conducted to determine the angular distribution of π-mesons in the $p+p \rightarrow d+\pi^+$ reactions when protons are 510-660 Mev. The experiments also established a dependence of the full cross-section of the reaction on the energy of π -mesons. Additional experiments with π - mesons are outlined for a higher refining of nuclear problems. Six references: 3 USA and 3 USSR (1951-1955). Graphs.

Institution : Acad. of Scs., USSR, Institute of Nuclear Problems

Submitted : .....







NEGANOV, B.S.

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FORMATION OF π^+ MESONS IN p–p COLLISIONS IN 450 TO 660 MEV REGION. B. S. Neganov and O. V. Savchenko. Joint Institute of Nuclear Research. Laboratory of Nuclear Problems. May 1954. (In Russian)

Energy spectra of π-meson reactions $p + p \rightarrow \pi^+ + n + p$ and $p + p \rightarrow \pi^+ + d$ were measured in an isolated proton beam of energy 660 Mev. The total cross section for the reaction $p + p \rightarrow \pi^+ + n + p$ equals (1.9 ± 1.1) mb with the angular distribution proportional to (0.66 ± 0.14) + $\cos^2\theta$. The function of the excitation reaction $p + p \rightarrow \pi^+ + n + p$, measured in the energy range 414 to 660 Mev, was developed using the approximation of power dependence 0.67 P_{max} mb, where P_{max} is the maximum meson pulse expressed in units $m_\pi + c$. (tr-auth)

1/1

NEJANOV, B. S.

3

6612
INVESTIGATION OF THE PROTON-PHOTON INTERACTION AT HIGH ENERGIES. M. G. Meshcheriakov, N. P. Bogachev, and B. S. Neganov (Institute of Nuclear Problems, Academy of [illegible] U.S.S.R., Moscow). Nuovo cimento (10) 3, Suppl. No. 1, 119-32(1956). (In English)

Results of the investigation of (p,γ) collisions in the energy region from 460 to 666 Mev were reported. In the region the (p,p) interaction includes elastic scattering and méson production. (F.S.)

NEGANOV, B.S.

C-3

USSR/Nuclear Physics

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11093

Author : Meshcheryakov, M.G., Zrelov, V.P., Neganov, B.S., Vzorov, I.K., Shabudin, A.F.

Inst : Institute of Nuclear Problems, Academy of Sciences, USSR

Title : Energy Spectra of Positive Pions in the pp np Reaction at 556 and 657 Mev.

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 31, No 1, 45-54

Abstract : The magnetic analysis method was used at an angle of 24° relative to the proton beam to measure the spectra of the positive pions of the pp np reaction at collision energies of 556 and 657 Mev. For an angle of 45°, in the center of mass system, the ratio of the differential cross sections of the reaction pp np amounts to $(d\sigma/d\Omega)_{657} : (d\sigma/d\Omega)_{556}$ 2.2:1. At both

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USSR/Nuclear Physics C-3

Abs Jour : Ref Zhur - Fizika, No 5, 1957, 11093

collision energies, an average of 80% of the accessible energy is consumed in the formation of a positive pion in one elementary act of the pp → np π^+ reaction. Comparison of the measured spectra with the energy distributions corresponding to the statistical weights of the final states, calculated under the assumption that the formation of mesons takes place directly, has shown that in the low-energy portion of the positive-pion spectra the matrix element that connects the initial and final states of the pp → np π^+ reaction increases linearly with the momentum of the meson and for equal values of momentum it has approximately the same magnitude for both collision energies.

Card 2/2

NEGANOV, B.S

USSR/Nuclear Physics C-3

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11094

Author : Meshcheryakov, M.G., Vzorov, I.K., Zrelov, V.P., Neganov, B.S., Shabudin, A.F.

Inst : Not given

Title : Formation of Charged Mesons on Beryllium and Carbon by Protons with 660 Mev Energy.

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 31, No 1, 55-62

Abstract : The method of magnetic analysis was used to measure the energy spectra of positive and negative pions, emitted in the p - Be and p C collisions at an angle of 24° relative to the beam of the 660 Mev protons. The spectra of the positive pions have clearly pronounced maximum at 210 Mev in the laboratory system, while the number of negative pions changes insignificantly in the range from

Card 1/2

USSR/Nuclear Physics C-3

Abs Jour : Ref Zhur - Fizika, No 5, 1957, 11094

60 to 250 Mev. It was observed that the probability of formation of positive pions in collision of protons with the protons bound in the beryllium and carbon nuclei, is at least one third the probability of formation on free protons. The maximum in the spectrum of the positive pions in the center of mass system is located near 100 Mev. The ratio of the positive and negative pion yields for beryllium and carbon was determined over the entire extent of the spectra.
The ratio total yields of the positive and negative pions for these elements is 5.3 - 0.6 and 7.0 0.8 respectively.

Card 2/2

NEGANOV, B. S.

SUBJECT USSR / PHYSICS CARD [illegible] PA [illegible]

AUTHOR MEŠČERJAKOV, M.G., NEGANOV, B.S., V[illegible], I.K., [illegible], V.I., SA[illegible], A.F.

TITLE The Magnetic Analysis of the Reactions [illegible] (I), [illegible] (II) and pp → dπ⁺ (III) at an Energy of 660 MeV

PERIODICAL Dokl.Akad.Nauk, 109, fasc.3, 49[illegible] [illegible]

Issued: 9 / 1956 reviewed: 10 / [illegible]

For the purpose of the determination of further data concerning the [illegible] of the production processes of positive pions on the occasion of [illegible] the authors studied the momentum spectra and angular distributions of the secondary protons emitted on the occasion of the reactions I and II at [illegible]0 MeV. Independent interest was caused by the possibility of separating for the purpose of a subsequent determination of their degree of polarization the deuterons produced on the occasion of reaction III from the total flux of secondary particles. In connection with some further measurements such an experiment permits a complete phenomenological analysis of reaction III including the [illegible] of the ratio between the intensities of the two possible transitions

$^1S_0 \to {}^3P_1$ and $^1D_2 \to {}^3P_2$, which correspond to the emission of [illegible]

p-state. The experiments were carried out with the [illegible] of the Institute for Nuclear Problems of the Academy of Sciences of the USSR. [illegible] energy of the protons was (660±3) MeV and the half width of the [illegible] spectrum was ± [illegible] MeV. The scheme and the setting up of the spectrometer are then discussed.

Dokl.Akad.Nauk, 109, fasc. [illegible], 4[illegible] (1956) CARD [illegible] PA - [illegible]

The relative momentum spectrum of the particles was measured [illegible] magnetic field strength [illegible] effect [illegible] was determined from the difference of the yields of polyethylene- and carbon targets [illegible] of secondary protons and deuterons determined [illegible] a diagram. The most intense peak at $H\varrho$ = 4260.10³ Gauss.cm corres[illegible] protons elastically scattered on protons through an angle [illegible] of mass system. The peaks at $H\varrho$ = [illegible] and $H\varrho$ = [illegible] [illegible] to the deuterons of reaction III scattered under 45° and [illegible] mass system) respectively. The experimental and the computed location of the deuteron peaks with respect to the peak of the elastically scattered protons differ by less than 1%.

The continuous spectrum belongs to the secondary protons of [illegible] I and II. Its upper limit is in agreement with the computed value [illegible] reactions 3560.10³ and 3590.10³ Gauss.cm respectively. The spectrum of the secondary particles produced on the occasion of [illegible] tained at an angle of 12.2° towards the primary bundle. [illegible] peaks were about $H\varrho$ = 3220.10³ and $H\varrho$ = [illegible] Gauss.cm. [illegible] tum spectrum of the secondary protons changes considerably [illegible] bution. The protons with more than [illegible] MeV are emitted mainly [illegible] and the rear, but protons with smaller momenta have a nearly [illegible] bution.

INSTITUTION: Institute for Nuclear Problems of the Academy of [illegible]

NEGANOV, B.S., MESHCHERYAKOV, M.G., ZRELOV, V.P., ZOROV, I.Y., SH'RUDIN, A.F.

"Energy Spectra of π^- Mesons in the $pp \rightarrow np\pi^+$ Reaction at 556 and 657 MeV," paper presented at CERN Symposium, 1956, appearing in Nuclear Instruments, No. 1, pp. 21-30, 1957

NEGANOV, B.S., MESHCHERYAKOV, M.G., VZOROV, I.", ZRELOV, V.P., SHABUDIN, A.F.

"Magnetic Analysis of the Reactions $pp \rightarrow np\pi^+$ (I), $pp \rightarrow pp\pi^0$ (II) and $pp \rightarrow d\pi^+$ (III) at an Energy of 660 MeV," paper presented at CERN Symposium, 1956, appearing in Nuclear Instruments, No. 1, pp. 21-30, 1957

NEGANOV, B.S., MESHCHERYAKOV, M.G. BOGACHEV, N.P., LEKSIN, G.A., PISKAREV, E.V.

"Scattering of Protons with Energies of 460 and 660 MeV by Protons and Deuterons," paper presented at CERN Symposium, 1956, appearing in Nuclear Instruments, No. 1, pp. 21-30, 1957

NEGANOV, B.S., MESHCHERYAKOV, M.G., VZOROV, I.K., ZRELOV, V.P., SHIRDIN, A.F.

"Charged Pion Production by 660 MeV Protons on Beryllium and Carbon," paper presented at CERN Symposium, 1956, appearing in Nuclear Instruments, No. 1, pp. 21-30, 1957

AZHGIROV, L., VZOROV, I., IRELOV, V., MESHCHERYAKOV, M., NEGANOV, B., and SHABUDIN, A.

"Forcing Deuterons from Nuclei of Li, Be, C, and O by 675 Mev Protons," (Vybivaniye Detronov Iz Yader Li, Be, C, i O, Protonami s Energiyev v 675 Mev), USSR, 1957. Reported 17 May 1957 at the Second Session of the Scientifi Council of the United Institute of Nuclear Research.

Translation U-3,055,593, 22 Jan 5

MEGANOV, B

1-RMX
Sawm
J63d

THE STRUCTURE OF NUCLEONS. B. Meganov. Report presented at the All-Union Conference on Physics of High Energy Particles, May 22, 1966. Joint Institute of Nuclear Research. Laboratory o Nuclear Problems. Jan. 1967. 25p. (In Russian)

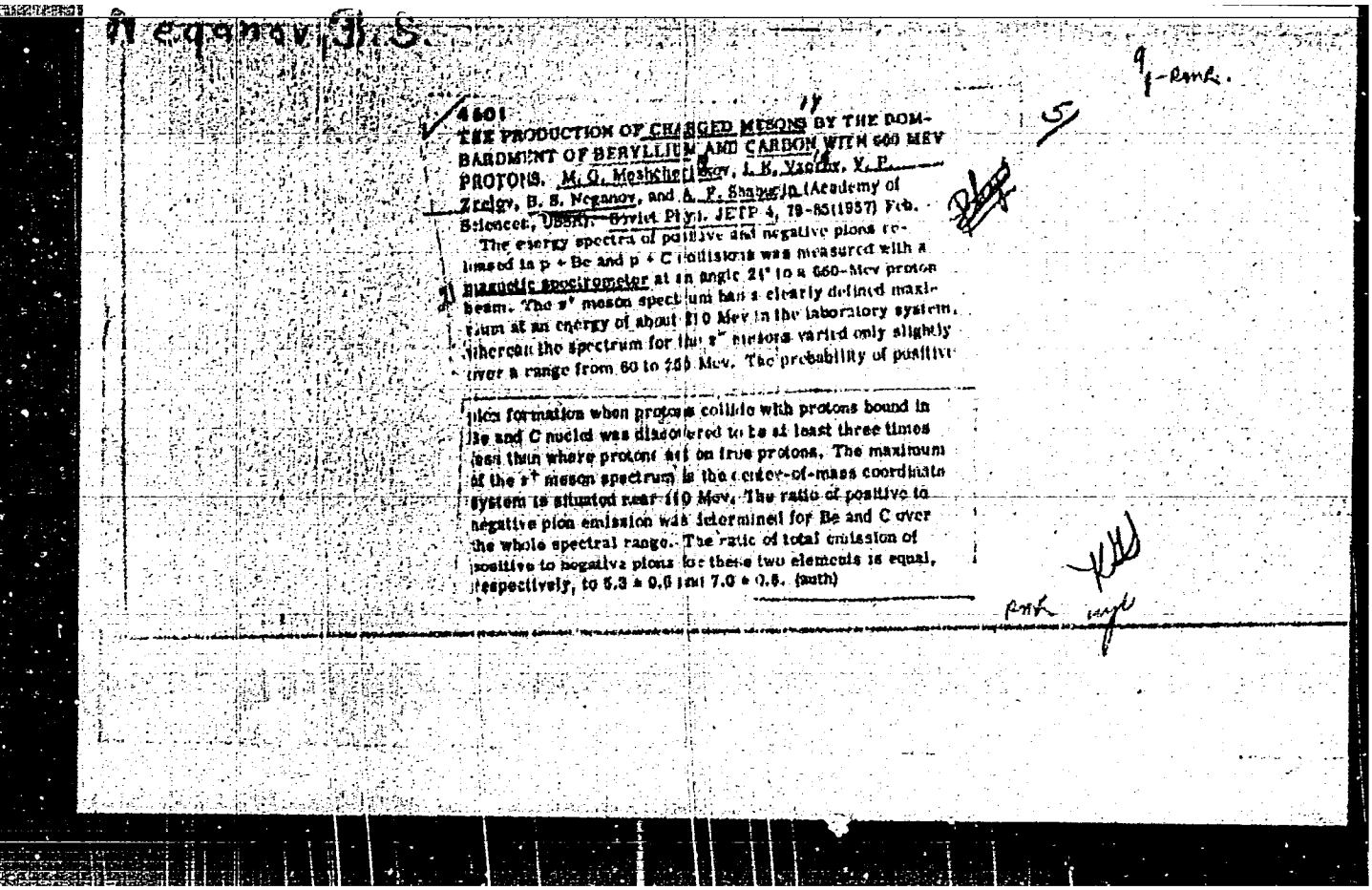
A hypothesis was developed on the nucleon structure and its structural elements. The role of the new particles (hyperons and K mesons) in nuclear interactions and their relation to the nucleonic structure are discussed. (To be translated. The translation will be announced in NSA, when available.) (R.V.J.)

RMX

4600

π^+-MESON ENERGY SPECTRUM FOR $pp \rightarrow np\pi^+$ REACTION AT 556 AND 657 MEV. M. G. Meshcheriakov, V. P. Zrelov, B. S. Neganov, I. K. Vzorov, and A. F. Shabudin (Academy of Sciences, USSR). Soviet Phys. JETP 4, 60-7 (1957) Feb.

The π^+ spectrum for the reaction $pp \rightarrow np\pi^+$ was studied at bombarding energies of 556 and 657 Mev. By magnetic analysis at an angle of 24° to the proton beam. The ratio of the differential cross section at 45° (measured in the center-of-mass system) for the two energies proved to be $(d\sigma^*/d\omega^*)_{[illegible]} : (d\sigma^*/d\omega^*)_{[illegible]}$ = [illegible] : 1. For both bombardment energies, approximately 80% of the available energy is spent in the formation of the π^+ meson in a single elementary act. A comparison of the measured spectrum with the energy distribution corresponding to the statistical weights of the final states computed under the assumption that the meson is formed directly indicated that in the low energy part of the spectrum the matrix element associated with the initial and final state for the reaction varies linearly with meson momentum and has approximately the same value at identical momenta for both bombarding energies. (auth)



4601

THE PRODUCTION OF CHARGED MESONS BY THE BOMBARDMENT OF BERYLLIUM AND CARBON WITH 660 MEV PROTONS. M. G. Meshcheryakov, I. B. Vasilev, Y. P. Zrelov, B. S. Neganov, and A. P. Shapiro. (Academy of Sciences, USSR). Soviet Phys. JETP 4, 79-85(1957) Feb.

The energy spectra of positive and negative pions released in p + Be and p + C collisions was measured with a magnetic spectrometer at an angle 21° to a 660-Mev proton beam. The π^+ meson spectrum has a clearly defined maximum at an energy of about 210 Mev in the laboratory system, whereas the spectrum for the π^- mesons varied only slightly over a range from 60 to 250 Mev. The probability of positive

pion formation when protons collide with protons bound in Be and C nuclei was discovered to be at least three times less than where protons act on free protons. The maximum of the π^+ meson spectrum in the center-of-mass coordinate system is situated near 110 Mev. The ratio of positive to negative pion emission was determined for Be and C over the whole spectral range. The ratio of total emission of positive to negative pions for these two elements is equal, respectively, to 5.3 ± 0.6 and 7.0 ± 0.8. (auth)

- NEGANOV, B.S.

USSR/Nuclear Physics - Elementary Particles. C-3

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 368

Author : Neganov, B.S., Savchenko, O.V.

Inst : Joint Institute for Nuclear Research.

Title : Production of π^+ Mesons in p-p Collisions at 480 -- 660 Mev.

Orig Pub : Zh. eksperim. i teor. fiziki, 1957, 32, No 6, 1265-1275

Abstract : Using an external beam of 660 Mev protons, a study is made of the energy spectra of π^+ mesons produced in the reactions $p + p \rightarrow \pi^+ + n + p$ and $p + p \rightarrow \pi^+ + d$, for four angles in the laboratory system. Also determined are the differential cross sections for meson productions for eight angles in the same system. The total cross section of the first reaction is $(10.9 \pm 1.1$ millibarns, and the angular distribution is proportional to $(0.66 \pm 0.14) + \cos^2 \theta$.

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MEGANOV, B.S.

On the structure of nucleons. Zhur. eksp. i teor. fiz. 33 no.1: 260-262 Jl '57. (MLRA 10:9)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Nucleons)

56-3-19/46

AUTHOR: Azhgirey, L.S., Vzorov, I.K., Zrelov, V.P., Meshcheryakov, M.G., Neganov, B.S., Shabudin, A.F.

TITLE: The Knocking Out of Deuteron from the Nuclei Li, Be, C and O by 675 MeV Protons (Vybivaniye deytronov iz yader Li, Be, C i O protonami s energiyey 675 MeV)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 5, pp. 1185-1195 (USSR)

ABSTRACT: With the help of the magnetical analysis below 7,6°, with respect to the primary proton ray, the momentum spectrum of the charged partiole was recorded which is produced when deuterium, lithium, beryllium, carbon and oxygen are bombarded by 675 MeV protons. The occurrence of deuteron groups with an energy of ~ 600 MeV was observed for all five elements. In the case of deuterium the fast deuterons result from the elastic scattering of the protons by deuterons. In all other cases the production mechanism of the reaction must be ascribed to $p + (Z,A) \rightarrow d + p + (Z-1, A-2)$. These reactions, therefore, correspond to the scattering of the protons by the quasi-deuteron groups within the target nucleus. The following differential cross sections were measured:

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56-5-19/46

The Knocking Out of Deuteron from the Nuclei Li, Be, C and O by 675 MeV Protons

	$\left(\frac{d\sigma}{d\omega}\right)$ in mb/ster.
d + p	0.55 ± 0.12
Li + p	2.9 ± 0.6
Be + p	2.2 ± 0.5
C + p	3.7 ± 0.8
O + p	4.6 ± 1.0

For the nuclei Li, Be, C and O the average motional energy of the quasideuteron groups could be estimated at 8, 11, 14 MeV. In the highly energetic part of the spectra no occurrence of tritium of importance could be observed. From the data obtained by experiment the conclusion may be drawn that interaction processes of three particles occur, which are connected with a great transfer of momenta. There are 6 figures, 3 tables, and 23 references, 4 of which are Slavic.

ASSOCIATION: United Nuclear Research Institute (Ob"yedinennyy institut yadernykh issledovaniy)
SUBMITTED: June 1, 1957
AVAILABLE: Library of Congress
Card 2/2

NEGANOV B.S.

56-7-38/66

AUTHOR NEGANOV, B.S.

TITLE On the Problem of the Structure of the Nucleon. (K voprosu o stroyenii nuklona.- Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 33, Nr 7, pp 260-262 (USSR)

ABSTRACT If the nucleon is considered to be a system of particles, the particles of which are closely coupled with one another by a meson field, the resonance interaction of the pions with nucleons can be interpreted as a result of the existence of an excited state of the nucleon. The simultaneous forming of hyperons and K-mesons can than be looked upon as a dissociation of the nucleon into it's components. The author here assumes as fundamental particle a K-meson and a cascade hyperon (Ξ). The strong attraction between the K^{o+}- and Ξ^{o}-particles and the antiparticles $\bar{K}^{o-}$ and $\bar{\Xi}^{o+}$ may lead to a bound state with a very large mass defect. The particles K^{o+} and Ξ^{o+} can form four bound states (given here) with the isotopic spin T = 0 and T = 1, which can be identified with the charged and the neutral hyperons. When forming a system consisting of Ξ-particles and 2 K-mesons, two groups of states with T = 1/2 and one group with T = 3/2 are obtained. Accoording to the

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On the Problem of the Structure of the Nucleon.

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opinion of the author the nucleons must have the following structural scheme:

$p = K^+ + \Xi^- + K^+ \rightleftharpoons K^+ + (\Xi^0 + K^0), n = K^0 + \Xi^0 +$

$+ K^0 \rightleftharpoons K^0 + (\Xi^- + K^+)$

"Strangeness" may then be interpreted as a mesonic charge of the K- and Ξ-particles caused by interaction of these particles among themselves. Next, the dissociation of the nucleon is discussed in short. The system constructed here is absolutely stable with respect to the decay into light particles, if in this respect the Ξ-particles is absolutely stable. (With 1 Table)

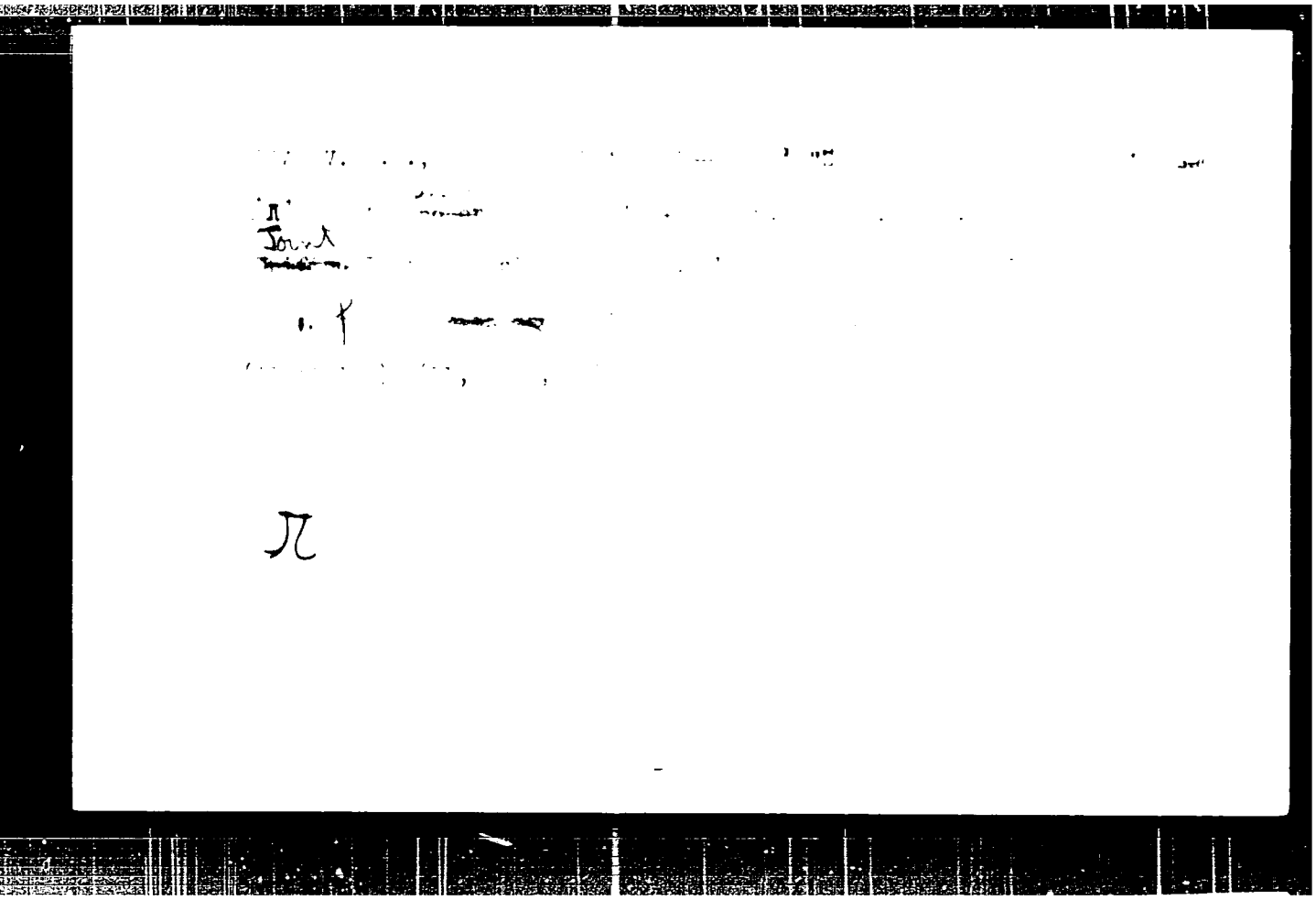
ASSOCIATION: United Institute for Nuclear Research. (Ob "yedinennyy institut yadernykh issledavaniy.- Russian)

PRESENTED BY: -

SUBMITTED: 3.11. 1956

AVAILABLE: Library of Congress.

CARD 2/2



SOV/56-34-3-46/5

AUTHORS: Neganov, B. S., Parfenov, L. B.

TITLE: The Investigation of the Reaction $\pi^+ + d \rightarrow 2p$ in the Range of Energies of the Positive Pions From 174 to 307 MeV (Issledovaniye reaktsii $\pi^+ + d \rightarrow 2p$ v oblasti energii π^+-mezonov ot 174 do 307 MeV)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958 Vol. 34, Nr 3, pp. 767 - 769 (USSR)

ABSTRACT: The authors investigated by means of the method of conjugated telescopes (which consisted of scintillation-counters) the reaction $\pi^+ + d \rightarrow 2p$ with the pion energies 174; 200; 227; 262; 307 MeV. The beam of positive pions was produced by irradiation of an hydrogen-containing target with a proton-beam of the synchrocyclotron of the United Institute for Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy). The yield of the above-mentioned reaction was determined from the difference of the counting-velocities of the twofold coincidences at the targets consisting of D_2O

Card 1/4

The Investigation of the Reaction $\pi^+ + d \rightarrow 2p$ of the Positive Pions From 174 to 307 MeV

SOV/34-56 3-46/59 in the Range of Energies

and H_2O. The results obtained by the measurements of the differential cross sections for 4 angles in the center-of-gravity system are summarized in a table. The angular distributions of the protons can be represented in the form $A + \cos^2\Theta$; the coefficients belonging to this, determined by the method of the smallest squares, are written down. The total cross sections for the reaction $p + p \rightarrow d + \pi^+$ were calculated on the basis of the principle of detailed equilibrium and in the case of proton-energies amount to 633; 690; 743; 812 and 903 MeV 3.05 ± 0.13; 2.50 ± 0.18; 1.93 ± 0.14; 1.33 ± 0.12; 0.80 ± 0.08 millibar. The dependence of the total cross section of the reaction $p + p \rightarrow d + \pi^+$ on the energy of the pions in the center-of-gravity system is demonstrated in a diagram. The data obtained here confirm the conclusions by Mesheryakov and Neganov (Reference 1) on the resonance-like character of the afore-mentioned reaction. The maximum of the excitation function is at $E_n = 139$ MeV. These results agree with the theory by Mandel'shtam (Birmingham, private communication, 1957). The angular distribution changes obviously on account of the increase of the relative influence of the transitions:

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SOV/56-34-3-46/55

The Investigation of the Reaction $\pi^+ + d \rightarrow 2p$ in the Range of Energies of the Positive Pions From 174 to 307 MeV

$^3P_{1,2} \rightarrow {}^3S_1$ and $^3F_{2,3} \rightarrow {}^3S_1$, with the energies exceeding resonance-energy. These transitions lead to the production of mesons in d-state. This assumption can be verified by polarization tests, viz. by a more extensive analysis and more accurate determination of the angular distribution with an energy of the pion of 230 MeV in the laboratory system. Then a term proportional to $\cos^4 \theta$ appears. This, from the point of the resonance-model of the production of pions with the nucleon-nucleon-collisions, signifies that the p-state of the system (which occurs prior to the irradiation of the meson in d-state) begins to play a part. The amplitude of the transition $^1S_0 \rightarrow {}^3S_1$ must be small in this case.

There are 1 figure, 1 table, and 7 references, 1 of which is Soviet.

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

Card 3/4

NEGANOV B.S.

21(7) SOV/56-36-6-4/66

AUTHORS: Ashgirey, L. S., Vzorov, I. K., Zrelov, V. P., Meshcheryakov, M. G., Neganov, B. S., Ryndin, R. M., Shabudin, A. F.

TITLE: Interaction Between Protons and Atomic Nuclei at Energies of 660 Mev and the Intra-nuclear Distribution of the Nucleon Momenta (Vzaimodeystviye protonov s atomnymi yadrami pri energii 660 MeV i vnutriyadernoye raspredeleniye impul'sov nuklonov)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 6, pp 1631 - 1649 (USSR)

ABSTRACT: Apart from theoretical discussions, this very detailed paper above all deals with the momentum distribution in quasi-elastic proton-nucleon collisions, and gives a detailed description of the experiments carried out as well as a great number of experimental data concerning the angular distributions and energy spectra of secondary particles (mainly protons with energies of $\geq$ 60 Mev) emitted at angles of 7, 12.2, 18, 24 and 30° in reactions between 660 Mev protons and nuclei of Be, C, Cu and U. Table 3 gives for all 4 elements the $d\sigma/d\omega$ measured for 8 different emission angles ϕ between 7 and 40°.

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Thus, the following was found for $\phi = 7°$: $d\sigma/d\omega = (1.100 \pm 0.055) \cdot 10^{-24} cm^2$/steradian, for 40° $(0.074 \pm 0.004) \cdot 10^{-24} cm^2$/steradian. Figure 2 shows these results in form of a diagram. It is found that in the general sense, the dependence of $d\sigma/d\omega$ on A decreases with a decrease of ϕ. The 4 diagrams in figure 3 show the energy spectra of the charged secondary particles at 7°, the following figures each show (in 4 diagrams) the energy spectra for the other angles. At 7° the characteristic peak ($d^2\sigma/d\omega dE$ in $10^{-27} cm^2$/steradian.Mev in the ordinate) is narrow and is practically near 660 Mev; a second maximum is only vaguely discernible and a weak minimum can be observed only in the case of Cu at about 500 Mev. At 12.2° the peak is already broader and shifted somewhat towards lower energies, the minima are more marked and are at energy values of somewhat below 500 Mev. At 18° these peaks are still broader and are found already at energies of < 600 Mev; the minima are especially low in the case of Cu and U at about 400 Mev. At 24° the broad maxima (especially in the case of U)

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are at about 500 Mev, the minima are distinctly observable at about 400 Mev; in the case of U the ordinate values are about 1 (200 Mev above the maximum at ~ 500 Mev. At 30° this development is more marked; the maxima are flat and are at about 400 Mev; Cu and U have very high ordinate values at low energies, which decrease to a minimum at about 300 Mev, after which they again increase somewhat and again decrease sharply towards zero with increasing energies. In general, the cross sections for the emission of such secondary particles increase with a decrease of the angle. Passing from high to low energies, the spectral regions of the investigated elements correspond to diffractional scattering of protons on nuclei (small angle region), single quasi-elastic proton-nucleon collisions, pion production on bound nucleons and intranuclear cascade processes, respectively. In chapter 5 of this paper the authors compare the experimental energy spectra for quasi-elastic proton-nucleon scattering with the calculated spectra (in momentum approximation under various assumptions with respect to the momentum distributions of the nucleons in the nucleus) (Figs 8 and 9). In the case of p-Be- and p-C-scattering agreement is found (between experiment and theory) when using a Gaussian

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momentum distribution having a 1 e-value at about 20 Mev, which is in keeping with the results obtained in Berkeley. The authors finally thank E. N. Fedorova and I. V. Popova for programming and carrying out calculations, and further also S. N. Bilen'kiy, B. P. Kireyev, L. A. Borovo and N. A. Chernikov for valuable discussions. There are 9 figures, 3 tables, and 29 references, 6 of which are Soviet.

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

SUBMITTED: December 20, 1958

Card 4/4

S/056/60/038/006/048/049/XX
B006/B070

24.6900 (1138, 1191, 1559)

AUTHORS: Negancy, B. S., Parfen[illegible], L. B., Tyapkin, A. A.

TITLE: Measurement of the Relative Nuclear Activity of Pions in the Vicinity of the Point of Production

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 6, pp. [illegible]

TEXT: Irish research workers (Ref.1) discovered an anomalously large scattering cross section on pions produced in $K_{\pi 2}$ decays. The value was two three times that of the geometrical cross section. It was assumed by them that either the pions produced by K-decay were different from the ordinary ones, or the nuclear activity was anomalously large in the region of pion production. These assumptions are discussed in the introduction of the present paper, followed by a brief report of the experimental measurements. The nuclear activities of mesons were compared at distances of 2.4 [illegible] 21-23, and 105-115 cm from the point of production the mesons being emitted at 90° by 660 Mev protons incident on carbon nuclei. The measurements

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85705

Measurement of the Relative Nuclear Activity of Pions in the Vicinity of the Point of Production

S/056/60/038/006/018/049/XX
B006/B070

were made by means of two telescopes each consisting of three scintillation counters. The relative change in the counting rate in the two telescopes caused by brass filters of a thickness of 17 g/cm^2 was measured. The filters were placed either in front of the first counters or behind the second in the telescope. In this manner, the nuclear absorption of mesons whose energy changed from 100 to 70 Mev in passing through the filter was determined; (this energy interval corresponds to the meson energies in the $K_{\pi 2}$ decay). Only an insignificant lowering of the nuclear activity could be observed in the experiments, and was probably due to errors in measurement. There is 1 non-Soviet reference.

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

SUBMITTED: April 19, 1960

Card 2/2

33161
S/120/61/000/006/035/041
E194/E485

24 5600

AUTHORS: Goncharov, I.N., Gromova, I.I., Neganov, B.S., Parfenov, L.B.

TITLE: An electromagnet with super conducting winding

PERIODICAL: Pribory i tekhnika eksperimenta, no.6, 1961, 142-143

TEXT: The magnet described was required to control the "thermal keys" in a cyclic refrigerator equipment used to produce extremely low temperatures by the adiabatic demagnetization of a paramagnetic salt. The coil was made of lead, which has a critical field of about 500 oersteds at a temperature of 4.2°K and 800 oersteds at 1.5°K, the critical current for the wire of section 0.5 x 1.5 mm was not less than 10 A at 4.2°K. The turns were insulated with capacitor paper treated with adhesive grade BF-2 (BF-2). For convenience of accommodating the "thermal key" between the poles, the magnet was made cylindrical, the pole diameter was 8 mm and the pole tip diameter 14 mm, the gap length was 3.2 mm. For example, with 700 turns the field strength at which super-conductivity broke down to give a p.d. of 0.05 mV was 2800 oersteds at 1.5°K with a critical current of 1.2 A. As the

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An electromagnet with super ...

current is required to flow for several hours, heat evolved in the connections is troublesome and so a circuit was devised to maintain the gap field constant with supply disconnected. The coil was shorted by turns of lead, wound on a metal core in contact with liquid helium, on which a heating coil was also wound. Until the heater was switched on, the lead turns were superconducting and current continued to flow through the magnet coil even with supply switched off. If it is required to connect the supply, it is first switched on then, as the heater current is increased, the lead coil becomes progressively less super-conducting and supply voltage is applied to the magnet coil. Acknowledgments are expressed to V.M.Drobin for assistance. There are 3 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The two references to English language publications read as follows:
Ref.1: S.H.Autler, Rev. Scient. Instrum. v.31, 1960, 369;
Ref.2: D.R.Young, Progress in Cryogenics, v.1, 1959, 3.

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

SUBMITTED: April 3, 1961

Card 2/2

L 16907-63 EPR/EWT(l)/EWP(q)/EWT(m)/BDS/EPF(n)-2 AFFTC/ASD/IJP(C)/SSD
Pu-4/Ps-4 WW/JD/JG

ACCESSION NR: AP3005305 S/0056/63/045/002/0394/0396

AUTHOR: [redacted]; Parfenov, L. B.; Lushchikov, V. I.; Taran, Yu. V.

TITLE: Dynamic proton polarization at 0.5°K

SOURCE: Zhur. eksper. i teoret. fiz., v. 45, no. 2, 1963, 394-396

TOPIC TAGS: dynamic proton polarization, proton spin lattice relaxation, electron proton resonance, lanthanum double nitrate, cerium impurity

ABSTRACT: Results are reported of preliminary experiments on dynamic proton polarization (DPP) in crystals of $La_2Mg_3(NO_3)_{12}\cdot 24H_2O$ with paramagnetic cerium concentration of 0.8% (relative to the lanthanum) at approximately 0.5°K; the experiments were intended to increase the polarization and check the dependence of the proton polarization amplification coefficient on the external magnetic field at fixed electron proton resonance (EPR) frequency, the dependence of the amplification coefficient on the microwave power used to saturate the EPR, and the temperature dependence of the proton spin-lattice relaxation time. The maximum positive value of the amplification coefficient was 129 ± 10, corresponding in a field of 3500 Oe to a proton polarization 8 ± 0.5%. It was found that [illegible] of microwave power

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L 16907-63

ACCESSION NR: AP3005305

2

was sufficient to obtain the maximum amplification coefficient (with resonator Q of approximately 1000). The proton spin-lattice relaxation has a time dependence in the form $T_{1n}^{-1} \sim T^{1.65 \pm 0.15}$ with $T_{1n} = 920 \pm 80$ sec at $T = 0.32 \pm 0.03°K$. It is therefore concluded that at temperatures below 1°K no reduction occurs in the amplification coefficient when the temperature of the sample is substantially decreased. The use of higher magnetic fields should yield proton polarizations near 100%. "In conclusion, the authors take this opportunity to thank Prof. E. L. Shapiro for his great interest and attention to this work."

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

SUBMITTED: 01 Jun 63 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 003

Card 2/2

DRAGICHESKU, P. [Draghicescu, I.]; DRAGICHESKU, M. [Draghicescu, M.]; LUSHIKOV, V.I.; NEGANOV, B.S.; PARFENOV, L.B.; TARAN, Yu.B.

[Dynamic polarization of protons in lanthanum-magnesium nitrate crystals containing neodymium] Dinamicheskaia poliarizatsiia protonov v kristalle lantan-magnievogo nitrata s primes'iu neodima. Dubna, Ob"edinennyi in-t iadernykh issl. 1964. 16 p. (MIRA 17:5)

L 64956-65 EWT(1)/EWT(m)/T/EWP(t)/EWP(b) IJP(c) JD/GG

ACCESSION NR: AT5009474 Z/0000/64/000/000/0266/0268

AUTHORS: Luschykov, V. I.; Neganov, B. S.; Parfenov, L. B.; Tarran, J. V.

TITLE: The dynamic polarization of protons in a rotating crystal of lanthanum-magnesium nitrate

SOURCE: Conference on Low Temperature Physics and Techniques, 3d, Prague, 1963. Physics and techniques of low temperatures; proceedings of the conference. Prague, Publ. House of the Czechosl. Academy of Sciences, 1964, 266-268

TOPIC TAGS: cryogenics, proton polarization, lanthanum compound, nuclear spin

ABSTRACT: The dynamic polarization method first described by Abragam (Cryogenics 3 (1963), 42) and C. D. Jeffries (Cryogenics 3 (1963), 41) was used in the experiments, which were performed in

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ACCESSION NR: AT5009474 O

fields from 2 to 5 kOe at saturation frequencies from 60 to 170 Mc, and for uniform rotation of the crystal in the range of 30 to 550 rpm. The experiments were carried out at ~1.3K. The results showed that the polarization increases when the cerium content decreases from 2 to 0.2%. The temperature dependence of the amplification coefficient of the polarization is similar to that observed for the simple effect-solide. The amplification coefficient increases rapidly as the speed of the crystal rises from 30 to 100 rpm, and then decreases slowly. The polarization amplification coefficient obtained in individual experiments reached 70 for an irradiation time of 30--40 min. Higher values are expected to be obtainable by a more suitable choice of parameters. A disadvantage of the method is the need for precise adjustment of the crystal and the elimination of vibration during rotation in the magnetic field. An advantage of the method is relatively low demand for homogeneity and stability of the magnetic field and the use of meter waves instead of very high frequencies. Orig. art. has: 3 figures.

L 64956-65

ACCESSION NR: AT5009474 3

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research) 44,55

SUBMITTED: 000064 ENCL: 00 SUB CODE: GP

NR REF SOV: 000 OTHER: 004

Card 3/3

L 5331-66 EWT(l)/EWT(m)/ETC/EWG(m)/T/EWP(t)/EWP(b)/EWA(m)-2 IJP(c)
RDW/JD/GG

ACCESSION NR: AP5021099 UR/0056/65/049/002/0406/0409

44,55 44,55 44,55 44,55

AUTHOR: Izakchikov, V. I.; Meganov, B. S.; Parfenov, L. B.; Taran, Yu. V.

TITLE: Dynamic polarization of protons in a rotating lanthanum-magnesium nitrate crystal

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 2, 1965, 406-409

50
46
B

TOPIC TAGS: proton polarization, lanthanum compound, spin relaxation

ABSTRACT: A new method of polarizing nuclei in anisotropic crystals is proposed, consisting of rotating the crystals in a stationary magnetic field and a weak radio frequency field. The method is based on the theoretical predictions of A. Abragam (Cryogenics v. 3, 42, 1963) and C. D. Jeffries (Cryogenics v. 3, 41, 1963), wherein the spin temperature is rapidly decreased via spin-spin relaxation accompanied by rapid cooling of the system. The authors verified this method with single crystal $(La, Ce)_2Mg_3(NO_3)_{12}\cdot 24H_2O$, and obtained an appreciable increase in polarization. The experiments were made in fields from 2 to 6 kOe at saturation frequencies from 60 to 170 Mc with the crystal rotating uniformly at 30--600 rpm. The experiments were made at 1.3K. Amplification coefficients up to ~70 were obtained. The ampli-

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L 5331-66

ACCESSION NR: AP5021099

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fication coefficient increased with decreasing cerium concentration and with increasing speed. Only positive polarization was obtained. Advantages of the method are much less stringent magnetic-field uniformity and stability tolerances, and the use of radio frequencies in the meter range instead of ultrahigh frequencies. Orig. art. has: 3 figures and 2 formulas.

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

SUBMITTED: 03Mar65 44,55 ENCL: 00 SUB CODE: NP, SS

NR REF SOV: 000 OTHER: 004

Card 2/2 Md

NEGANOV, P.

Skilled workers in Irkutsk. NTO 6 no.1:43-44 Ja '64. (MIRA 17:2)

1. Direktor Irkutskogo oblastnogo Doma tekhniki Nauchno-tekhnicheskikh obshchestv.

NEGANOV, P.

Introduce new equipment for cyaniding. NTO 3 no.8:11-12 Ag '61. (MIRA 14:9)

1. Direktor Irkutskogo Doma tekhniki Vsesoyuznogo soveta nauchno-tekhnicheskikh obshchestv.
(Cyanide process--Equipment and supplies)

NEGANOV, P.

Innovators' radio school is speaking. NTO 5 no.1:25 Ja '63.
(MIRA 16:5)

1. Direktor Irkutskogo Doma tekhniki oblastnogo soveta nauchno-tekhnicheskogo obshchestva.
(Irkutsk Province—Technological innovations)

NEGANOV, V.I., Geroy Sotsialisticheskogo Truda; GNESIN, B.Ya., laureat Leninskoy premii

Atomic icebreaker "Lenin" in the Arctic. Sudostroenie 27 no.8: 2-7 Ag '61. (MIRA 14:9)
(Arctic regions--Navigation) (Lenin (Atomic ship))

PINAYEVSKAYA, Ye.N.; ANTOSHKINA, N.L.; NEGANOVA, L.A.

Conversion of sodium chromate to dichromate using ammonia and carbon dioxide at atmospheric pressure. Zhur. prikl. khim. 37 no.12:2553-2557 D '64. (MIRA 18:3)

L 34888-66 EWT(1)/T JK
ACC NR: AP6026570 SOURCE CODE: UR/0240/66/000/003/0090/0093

AUTHOR: Abramovich, G. A. (Candidate of biological sciences); Neganova, S. V. (Candidate of biological sciences); Silin, Ye. A. (Candidate of technical sciences); Lombardos, N. D. (Candidate of technical sciences)

ORG: Saratov Scientific Research Institute of Rural Hygiene (Saratovskiy nauchno-issledovatel'skiy institut sel'skoy gigiyeny); All Union Scientific Research Institute of Hydraulics Engineering and Soil Improvement im. Kostyakov, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i melioratsii)

TITLE: Hygienic evaluation of an installation for purifying and decontaminating water without the use of reagents

SOURCE: Gigiyena i sanitariya, no. 3, 1966, 90-93

TOPIC TAGS: water purification equipment, water purification

ABSTRACT: The authors designed and successfully tested an apparatus for purifying water that does not use chemical reagents. Intended for farming areas, the apparatus consists of a slow filter with a sedimentation area that permits the filter to handle water with up to 500 mg/l of suspended matter, an electric coagulator, and a bubbling-type aerator. If the coagulator is placed before the sedimentation area of the slow filter, water with more than 500 mg/l of suspended matter and a color index of more than 50° can be treated. Reagent-free coagulation consists essentially of anode dissolving of aluminum (or iron) in a flow-type electrolyzer through which the water to be treated flows. The bubbling-type aerator removes odors and aftertasts chiefly of biological origin. It also helps to eliminate some types of impurities such as iron. A bactericidal unit decontaminates the water. Orig. art. has: 2 figures and 1 table.

SUB CODE: 13 / SUBM DATE: 12Oct65 [JPRS: 36,[illegible]]

UDC: 614.777.1:628.16

Card 1/1

0916 2263

CUPIC, V.; STOJIMIROVIC, E.; DJUKNIC, V.; NEGANOVIC, D.

Idiopathic pulmonary hemosiderosis. Tuberkuloza 15 no.1: 123-130 Ja-Mr '63.

1. Pedijatriska klinika Medicinskog fakulteta, Beograd - Upravnik: dr B. Tasovac.
(HEMOSIDEROSIS) (LUNG DISEASES)
(THORACIC RADIOGRAPHY)

S

BRAUNER, R., prof.; SORU, Ye. [Soru, E.], d-r; MINKU, Yu. [Mincu I.]; NEGOYESKU, V. [Negoescu, V.], kand.med.nauk; KHOANKA, O. [Choanca, O.], d-r (Bukharest)

Zymogram in chronic hepatitis and chirrhosis of the liver. Klin.med. no.7:27-39 '61. (MIRA 14:8)
(LIVER--DISEASES) (ENZYMES)

USSR/Soil Science. Tillage. Melioration. Erosion J-5

Abs Jour : Ref Zhur - Biol., No 10, 1958, No 43876

Author : Negibin Ya.D., Makhmudov R.
Inst : Tadzhik Agricultural Institute
Title : Several Results in the Two-Year Experiments Studying the Effect of T.S. Mal'tsev's Soil Working System on the Development of Yield of Cotton

Orig Pub : S. Kh. Tadzhikistana, 1957, No 3, 10-16

Abstract : The two year experimental results are described of growing cotton on irrigated sierozem soil planted in square pockets on the fields of the experimental training farm of the Tadzhik Agricultural Institute. Deep non-terraced plowing down to 42-43 cm. provided a yield increase of 3-4 centners per ha. as compared to ordinary tilling of 24-25 cm. The use of soil chiseling in the second year to a depth of 8-10 cm. provided a cotton yield boost of 6.5-11.7 centners per ha. in comparison with the ordinary banking method of plowing. The cotton also ripened earlier. -- S.A. Nikitin

Card : 1/1

POP,E., dr.; NICULESCU,M., dr.; ZAMFIRESCU, Elena; NEGRINA, St., ir.

Comments on 2 cases of severe allergic reaction t[illegible] aminosalicylate. Med. intern. (Bucur.) 16 no.12:1[illegible]

1. Lucrare efectuata in Sanatoriul de Tuberculoza, "[illegible]".

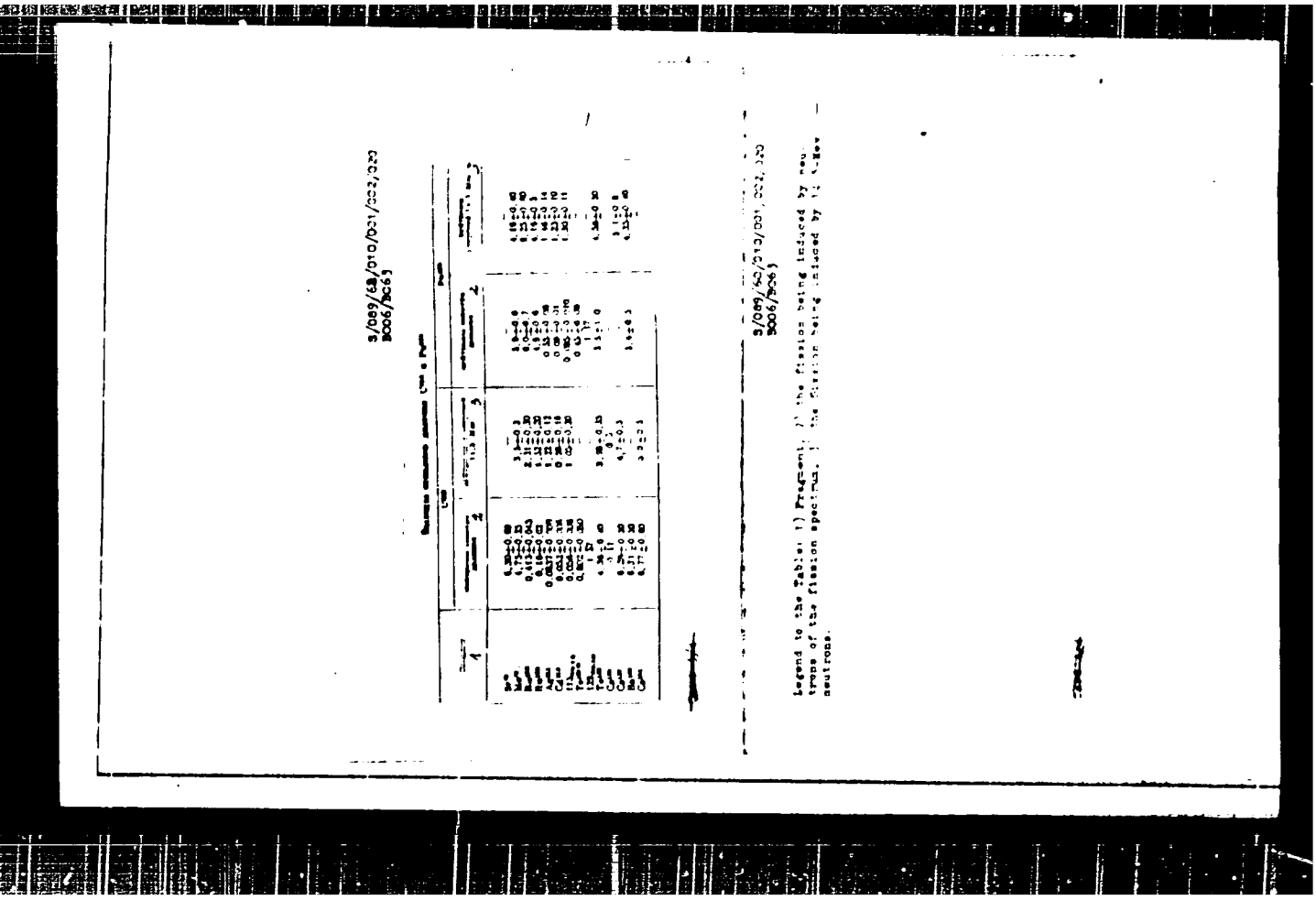
NEGIN, M.

Worsening of work conditions in France as the result of capitalistic "rationalizations." Sots.trud 8 no.4:102-110 Ap '63. (MIRA 16:4)

(France—Labor and laboring classes)

NEGINA, G.; PROKOF'YEVA, M.

Useful initiative ("From the experience in the conversion of industry to the seven and six-hour workday in 1956-1958"; "Conversion of workers and employees in the machinery industry to a shorter workday. Reviewed by G.Negina, M.Prokof'eva. Sots.trud 4 no.9:155-158 S '59. (MIRA 13:1)
(Hours of labor)



NEGINA, V.R.; [illegible], V.[illegible].; [illegible], N.A.; [illegible], I. .

Radioactivation method for determining the total of rare earth elements, manganese, nickel, copper, antimony, arsenic, [illegible], cadmium, and gold in lithium compounds. Radiokhimiia 3 no.4:473-477 '61. (MIRA 14:[illegible])
(Radioisotopes--Analysis)

BONYUSHKIN, Ye.K.; ZAMYATNIN, Yu.S.; SPEKTOR, V.V.; RACHEV, V.V.; REGINA, V.R.; ZAMYATNINA, V.N.

Yields of fragments from the fission of U^{233} and Pu^{239} induced by fast neutrons. Atom. energ. 10 no.1:13-18 Ja '61. (MIRA 13:12)
(Uranium—Isotopes) (Plutonium) (Fission products)

NEGINA, V.R.; ZAMYATNINA, V.N.

Quantitative determination of traces of barium, nickel, copper, antimony, molybdenum, manganese, cadmium, tin, gold, arsenic in metallic beryllium by the radioactivation method. Zhur.anal. khim. 16 no.2:209-212 Mr-Ap '61. (MIRA 14:5)
(Metals--Analysis)
(Activation analysis)

NEGINA, V.R.; DEGTYAREVA, O.F.; FEDYAYEVA, N.V.; ASTAKHINA, L.G.; KRASHENNIKOVA, Ye.P.

Determination of impurities in polymers by the spectral method. Zav.lab. 28 no.4:444-445 '62. (MIRA 15:5)
(Polymers--Spectra)

SAPIR, A.D.; BIRYUKOV, N.D.; KATA...KOV, S.G.; FROLOVA, Z.M.; LEGINA, M.A., SHUVALOVA, ..V., ...HENKOVA, Ye.P.; BLINOVA, ..V

Exchange of experience. Zav.lab. 28 no.6:670-671 '62. (MIRA 15:5)

1. Chelyabinskiy metallurgicheskiy zavod (for Sapir). 2. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR (for Biryukov). 3. Moskovskiy khimiko-tekhnologicheskiy institut ... Mendeleyeva (for Katal...kov, Frolova)

(Chemistry, Analytical)

POLYUKHOV, M.A.; NEGINE, G.P.; TESTEMITSANU, P.A.

Cholecystitis and angiocholitis. Zdravookhranen'e 3 no. 5:39-42 S-O '60. (MIRA 13:10)

1. Iz kliniki gospital'noy terapii (zav. - prof. M.A. Polyukhov) Kishinevskogo meditsinskogo instituta.
(GALL BLADDER--DISEASES) (BILIARY TRACT--DISEASES)

POLYUKHOV, M. A.; TESTEMITSANU, P. A.; NEGINE, G. F.

Thyrotoxicosis (as revealed by materials from the Clinic for Hospital Therapy of the Kishinev State Medical Institute for 1956-1960). Zdravookhranenie 5 no.2:30-32 Mr-Ap '62. (MIRA 15:7)

1. Iz kafedry gospital'noy terapii (zav. prof. M. A. Polyukhov) Kishinevskogo meditsinskogo instituta.

(MOLDAVIA--THYROID GLAND--DISEASES)