

S/081/62/000/009/020/075
B158/B101

E
AUTHORS: . Kirillov, Ye. A., Nesterovskaya, Ye. A.

TITLE: Spectral examination of centers formed in silver halide emulsions at different stages of photolysis

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 9, 1962, 76, abstract 9B523 (Nauchn. yezhegodnik. Odessk. un-~~iv~~ Fiz-matem. fak. i N.-i. in-t fiz., no. 2, Odessa, 1961, 151 - 157)

TEXT: The formation of absorption centers in crystals of Ag halides under the effect of light at different stages of photolysis - from a latent image to visible blackening - is examined. Fine-grain AgCl, AgBr and AgI emulsions were used both as dry layers and as a gel 4 mm thick. It is concluded that in the first stages of photolysis the fine structure centers play the leading role in forming a latent image. The appearance of diffused bands in the absorption spectrum of the emulsions at later stages of photolysis is evidence for the formation of centers intermediate in size between atomic and large colloidal particles, but not in accordance with Mie's theory. At the late stages of photolysis sharply defined

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Spectral examination of...

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bands are always observed in the gel layer: ~380 - 390 m μ for AgCl and
~430 m μ for AgBr. [Abstracter's note: Complete translation.]

Card 2/2

KIRILLOV, Ye.A.

Nature of the fine structure in the absorption spectrum of silver
halides. Zhur.nauch.i prikl.fot.i kin. 7 no.1:70-76 Ja-F '62.
(Silver halides—Spectra) (MIRA 15:3)

KIRILLOV, Ye.A.; GOL'DENBERG, A.B.

Effect of plastic deformation on the spectral absorption of impurity silver centers in fine-grained silver chloride emulsions. Zhur. nauch.i prikl.fot. i kin. 7 no.3:176-181 My-Je '62. (MIRA 15:6)

1. Nauchno-issledovatel'skiy institut fiziki Gosudarstvennogo universiteta imeni I.I.Mechnikova, Odessa.
(Photographic emulsions) (Silver chloride—Spectra)

KIRILLOV, Ye.A.

Conditions for observing the fine structure in the absorption spectrum of silver halides; methodological notes relative to Moser's article. Zhur.nauch.i prikl.fot. i kin. 7 no.3:225-226 My-Je '62.

(Silver halides--Spectra)

(NIRA 15:6)

S/077/63/008/001/003/003
A066/A126

AUTHORS: Kirillov, Ye.A., Nesterovskaya, Ye.A., Gol'denberg, A.B.

TITLE: The influence of optical density and of a luminous flux incident on a photocell upon the spectral dependence of the absorption curve of silver halides

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 8, no. 1, 1963, 47 - 50

TEXT: The influence exerted by the optical density of the object under consideration and by the load of the photometer on a photocell was studied from measurements of $I = I_1 - I_2$, where I_1 is the intensity of the light passing through the reference part of the emulsion, and I_2 is the intensity of the light passing through the part under examination. The experimental arrangement included a Zeiss monochromator and a Hartmann-Braun galvanometer. The preparations used for the purpose were fine-grained silver chloride emulsions. Conclusions: $\Delta I/\Delta n$ as a function of the galvanometer deflection n shows a horizontal section (maximum value), for which the contrast is a maximum, too. $\Delta I/\Delta D$ is a

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The influence of optical density and of

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A066/A126

linear function of the optical density ΔD up to $\Delta D = 0.045$, but above this value linearity is disturbed. Maximum sensitivity of the photocell to small variations in the luminous flux is reached within the linear section. Under normal pressures (linear section of I versus n) the absorption curves of the silver chloride emulsions exhibited a normal shape with fine structure. Application of higher pressures does not affect the general course of the absorption curve, but its fine structure vanishes. There are 6 figures. ✓

ASSOCIATION: Nauchno-issledovatel'skiy institut fiziki Odesskogo gosudarstvennogo universiteta im. I.I. Mechnikova (Scientific Research Institute of Physics of Odessa State University imeni I.I. Mechnikov)

SUBMITTED: June 1, 1962

Card 2/2

5/020/65/149/002/023/020
B117/B186

AUTHORS: Brown, Zh. M., Kirillov, Ye. A.; Chibisov, K. V.,
Corresponding Member CAS USSR

TITLE: The discrete character of the extrinsic spectral photo-
sensitivity of photographic emulsions

PERIODICAL: Akademiya Nauk SSSR. Doklady, v. 149, no. 2, 1963, 353-356

TEXT: The extrinsic spectral photosensitivity of photographic emulsions was studied by the differential method which determines the relative sensitivity to light $S_{\lambda} = S_{\lambda,t} / S_{\lambda,0} = H_{\lambda,0} / H_{\lambda,t}$. S_{λ} is the spectral photosensitivity and H_{λ} the monochromatic radiation energy which gives rise to a certain photoeffect (criterion of the light sensitivity) during the ground-state of the emulsion (0) and in a definite instant (t) of chemical sensitization, respectively. The authors studied a Lippmann silver bromide emulsion sensitized with gold chloride, and normal chemically ripened emulsions. The curves of the extrinsic spectral photosensitivity of the Lippmann emulsion showed selective bands with coincident maxima at a different degree of sensitization; during
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The discrete character of the extrinsic ...

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sensitization different changes of band intensity; considerable increase in extrinsic photosensitivity beyond the long-wave limit of the individual absorption of the solid emulsion phase. The curves of the relative spectral photosensitivity of normal emulsions showed a similar course: low S_0 values in the region up to $\lambda = 530 \text{ m}$, and high ones in the long-wave region, especially when the time of chemical maturing was prolonged; discrete bands with the maxima lying close together. The data obtained indicated that the increased photosensitivity of photographic emulsions is due to the double function of the primary molecular-colloidal centers. These centers are assumed to act at the same time as electron donors and bromine acceptors when the latent image is formed. There are 2 figures and 2 tables.

ASSOCIATION: Nauchno-Issledovatel'skiy institut fiziki Odesskogo gosudarstvennogo universiteta
(Scientific Research Institute of Physics of the Odessa State University)
Nauchno-Issledovatel'skiy kino-fotoinstitut
(Motion Picture and Photography Scientific Research Institute)

SUBMITTED: November 30, 1962
CBX 272

KIRILLOV, Ye.A. [deceased]; GOL'DENBERG, A.B., NESTEROVSKAYA, Ye.A.;
CHIBISOV, K.V.

Absorption features of colloidal solutions and dry layers of
certain organic dyes. Dokl. AN SSSR 161 no.6:1371-1374 Ap '65.

(MIRA 18:5)

1. Nauchno-issledovatel'skiy institut fiziki Odesskogo gosudarstven-
nogo universiteta im. I.I. Mechnikova. 2. Chlen-korrespondent AN
SSSR (for Chibisov).

KOTIK, Mikhail Grigor'yevich, kand. tekhn. nauk; PAVLOV, Aleksey
Vasil'yevich, inzh.; PASHKOVSKIY, Igor' Mikhaylovich,
kand. tekhn. nauk; SARDANOVSKIY, Yuriy Sergeevich, inzh.;
SHCHITAYEV, Nikolay Grigor'yevich, inzh.; GALLAY, M.L.,
kand. tekhn. nauk, zasl. letchik-ispytatel' SSSR, retsenzent;
KIRILLOV, Ye.A., inzh., retsenzent

[Flight testing of airplanes] Letnye ispytaniia samoletov.
Moskva, Mashinostroenie, 1965. 379 p. (MIRA 18:11)

DYKHOVICHENYY, Yuriy Abramovich, inzh.; KR. VPELOV, D.I., inzh.;
LEVITIN, Ye.P., kand. tekhn. nauk; MAKHUCHIN, M.M.,
inzh.; TARGANSKIY, H.L., inzh.; CHICHEIN, A.A., prof.,
doktor tekhn. nauk, retsenzent; DROZDOV, A.G., inzh.,
retsenzent; DEMENT'YEV, S.T., inzh., retsenzent, SPPK,
A I., inzh., retsenzent; KIRILLOV, Ye.S., inzh.,
retsenzent; PERMYAEV, S.I., kand. tekhn. nauk, retsenzent;
BACASHOV, S.I., inzh., natkn. ved.

[Large-scale fully prefabricated housing construction in
Moscow] Massovoe podnostroinoe domostroyeniye v Moskve.
[By] I.U.I. Dykhovichnyi i dr. Moskva, Sverdlovsk, 1967.
275 p.

L 1302-66 EWT(a)/BPP(c)/BWP(c)/BWP(b) LJP(e) JD/JW

ACCESSION NR: AR5014399

UR/0658/65/000/004/D042/D043

SOURCE: Ref. zh. Fizika, Abs. 4D324

45

AUTHOR: Korepanov, V. D.; Kirillov, Ye. I.; Chernitsyn, A. I.

TITLE: Equipment for measuring relaxation times of fluorine nuclei by the pulse method in the 0.3-300°K range

27

CITED SOURCE: Sb. Itog. nauchn. konferentsiya Kazansk. un-ta za 1962 g. Kazan', Kazansk. un-t, 1963, 5-6

TOPIC TAGS: Fluorine, radioisotops, relaxation process, cadmium fluoride, crystal

TRANSLATION: Electronic equipment is described for measuring the relaxation times T_2 and T_1 of F^{19} nuclei in CaF_2 crystals by the pulse method. A general block diagram of the equipment is given together with the receiver and transmitter circuits. A device is examined for creating temperatures down to 0.3°K. A high frequency head is described for studying the specimen. Methods for measuring temperatures are given.

SUB CODE: NP, S5 ENCL: 00

Cord *mlr* 1/1

L 22103-66 EWT(1) IJP(c) WW/gg

ACC NR: AP6012938

SOURCE CODE: UR/0120/65/000/002/0202/0204

AUTHOR: Shvets, A. D.; Antipin, A. A.; Kirillov, Ye. I.; Stepanov, V. G.; Chirkin, G. K.

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B

ORG: Physicotechnical Institute, AN UkrSSR (Fiziko-tekhnicheskiy institut AN UkrSSR), Kazan' State University (Kazanskiy gosudarstvennyy universitet)

TITLE: Low temperature device for studying EPR

SOURCE: Pribory i tekhnika eksperimenta, no. 2, 1965, 202-204

TOPIC TAGS: electron paramagnetic resonance, cryogenic device, crystallography

ABSTRACT: A device is described and diagrammed which is designed to study electron paramagnetic resonance in the 8 mm wavelength range in crystals at low temperatures, down to 0.315° K. For the experiments, the sample under study is attached to a column in a millimeter band resonator, attached at two places to a thin-walled stainless steel tube 16 mm in diameter. The resonator is tuned by moving Melchior waveguides, a communicating diaphragm, and piston. The resonator, column, piston, and diaphragm are made of silvered brass. The lowest temperature is obtained by evacuation of vapor over liquid He³ with an adsorption pump. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 20 / SUEM DATE: 27Jul64 / ORIG REF: 001

Card 1/1 E G

UDC: 536.483

KIRILLOV, Yevgeniy Vladimirovich;

GUMELIA, Anton Nikolayevich; KIRILLOV, Yevgeniy Vladimirovich; LUSKINOVICH, Nikolay Vasil'yevich; ZHUKHOVITSKIY, B.Ya., redaktor; DOBRYNINA, A.Ya., redaktor; SOKOLOVA, R.Ya., tekhnicheskij redaktor

[Supervisor of interurban telegraph and telephone communication lines] Nadsmotrshchik meshdugorodnykh telegrafno-telefonnykh lini svyazi. Moskva, Gos.isd-vo lit-ry po voprosam svyazi i radio, 1955. 263 p. (MLRA 9:1)
(Telephone lines) (Telegraph lines)

111-58-6-8/25

AUTHORS: Kirillov, Ye.V., Engineer, Chief of the TsNIIS and Struykina, N.S., Engineer, Junior Scientific Worker

TITLE: Interurban Coaxial Cables and Their Electrical Characteristics (Mezhdugorodnyye koaksial'nyye kabeli i ikh elektricheskiye kharakteristiki)

PERIODICAL: Vestnik Svyazi, Nr 6, 1958, pp 13-15 (USSR)

ABSTRACT: The article describes the construction of coaxial cables used in the USSR for interurban communication lines. The basic electrical characteristics of coaxial pairs and the results of measurements carried out in the construction of cable lines are given. The article offers recommendations concerning the basic electrical characteristics of the coaxial pairs of 2.6/9.4 mm, which were accepted by the 18th Plenary Session of the "MKKTT" in December 1956. These recommendations deal with the electric strength of insulation of coaxial pairs, the uniformity of the wave resistance, the safeguard level at the far end of them and the attenuation. The USSR industry manufactures cables with two or four coaxial pairs with or without symmetric quad lay and

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111-58-6-8/25

Interurban Coaxial Cables and Their Electrical Characteristics

also containing five spiral quads.
There is 1 figure, 1 graph and 1 table.

ASSOCIATION: TsNIIS

Card 2/2

1. Communication systems - USSR
2. Coaxial cables - Characteristics

DEM'YANCHENKO, Georgiy Vasil'yevich; KIRILLOV, Yevgeniy Vladimirovich;
SHISHKINA, M.I., otv.red.; KONDRASHINA, N.M., red.; SHAFER,
G.I., tekhn.red.

[Measuring apparatus used in wire communication systems]
Izmeritel'naya apparatura, primenyaemaya v provodnoi svyazi.
Moskva, Gos.izd-vo lit-ry po voprosam svyazi i radio, 1960.
101 p. (MIRA 14:3)
(Electronic measurements) (Telephone lines)

VASIL'YEV, S.A.; GUROV, V.S.; DAVYDOV, G.B.; ZARIN, S.A.; ZAYONCHKOVSKIY,
Ye.A.; IL'INA, L.D.; KIRILLOV, Ye.V.; LISHAY, K.P.; MILEVSKIY,
Yu.S.; MIKHAYLOV, M.I.; NIKOL'SKIY, K.K.; PUKHAL'SKIY, A.Ch.;
PUKHAL'SKAYA, N.N.; RABINOVICH, M.B.; SHVEDSKIY, S.A.; KONDRASHINA,
N.M., red.; KARABILOVA, S.F., tekhn.red.

[Recommendations of international consultative committees on
telephony and telegraphy] Rekomendatsii mezhdunarodnykh konsul'-
tativnykh komitetov po telefonii i telegrafii. Moskva, Gos.izd-vo
lit-ry po voprosam svyazi i radio, 1959. 335 p. (MIRA 13:3)

1. Tsentral'nyy nauchno-issledovatel'skiy institut svyazi Mini-
sterstva svyazi SSSR (for all except Kondrashina, Karabilova).
(Telephone) (Telegraph)

BLOKHIN, A.S.; BORODZYUK, G.G.; LESHCHINSKIY, A.A.; OKSMAN, A.K.;
KOSMINSKIY, O.F.; MANUSHKIN, A.Ye.; MILEVSKIY, Yu.S.;
DRIATSKIY, N.M.; VASIL'YEV, V.V.; L'VOVICH, A.A.;
ORLEYEVSKIY, M.S.; MOROZ, I.A.; OKSIAN, A.K.; KNEL', G.S.;
SOROKIN, M.F.; BUTLITSKIY, I.M.; VASIL'YEV, L.N. [deceased];
GINTS, Yu.R.; VASIL'YEV, G.K.; LUGOVSKOY, N.Ye.; KIRILLOV,
Ye.V.; STRUYKINA, N.S.; LEVINOV, K.G.; BLOKHIN, A.S., otv.
red.; GURIN, A.V., red.; SLUTSKIN, A.A., tekhn. red.

[K-1920-frequency telephone system] Sistema vysokochastotnogo
telefonirovaniya K-1920; informatsionnyi sbornik. [By] A.S. Blokhin
i dr. Moskva, Sviaz'izdat, 1962. 319 p. (MIRA 16:4)
(Telephone)

8(6), 25(1)

AUTHOR:

Kirillov, Yu.A., Engineer

SOV/91-59-7-7/21

TITLE:

Metal-Asbestos Gaskets for Steam Boilers

PERIODICAL:

Energetik, 1959, Nr 7, pp 13-14

(USSR)

ABSTRACT:

The author explains a method and devices for producing metal-asbestos gaskets for boilers as suggested by I.I. Karlash. Initially, the gaskets were manufactured manually, until mechanic N.S. Trubeyev suggested the mechanization of this process using a press and the devices shown by the diagrams in Fig. 1-3. ARMKO sheet steel of 0.3 - 0.4 mm was used for the gaskets. Two workers can produce 125 gaskets per shift. There are 3 diagrams

Card 1/1

KIRILLOV, Yu.A., inzh.

Replacement of "paranit" gaskets in flange connections of gas
pipes. Energetik 8 no.5:12-13 My '60. (MIRA 13:8)
(Gas pipes) (Sealing (Technology))

KIRILLOV, Yu.A., inzh.

Improving the operation of chemicals pump. *Energetik* 8 no.6:
17-18 Je '60. (MIRA 13:7)
(Pumping machinery)
(Chemical engineering--Equipment and supplies)

KIRILLOV, Yu.A., insh.

Attachment to the water gauge of a PK-14-R boiler.
Energetik 8 no.7:14-15 JI '60. (MIRA 13:8)
(Boilers--Safety appliances)

KIRILLOV, Yu.A., insh.

Elimination of steam leakage at boiler latches. Energetik 8 no.8:13
Ag '60. (MIRA 13:10)

(Boilers)

KIRILLOV, Yu.A., insh.

Repair of low-pressure equipment. Energetik 11 no.5:16-18 My
'63. (MIRA 16:7)

(Electric power plants--Equipment and supplies)
(Steampipes)

KIRILLOV, Yu.A., inzh.

Prevention of steaming at boiler hatches. Energetik 11 no.10:
39-43 0 '63. (MIRA 16:11)

KIRILLOV, Yu.A.

Experience in the operation of a hydraulic ash removal system.
Energetik. 13 no.2:5-7 F '65. (MIRA 18:6)

KIRILLOV, Yu. B.: Master Med Sci (diss) -- "The creation of supplementary collateral blood circulation in chronic circulatory insufficiency in the main large vessels (Experimental-clinical investigation)". Ryazan', 1958. 24 pp (Ryazan' Med Inst im Acad I. P. Pavlov), 200 copies (KL, No 15, 1959, 119)

KIRILLOV, B.P.; LYSENKO, V.A.; MAKEVNINA, T.N.; MYASNIKOVA, M.N.; PETROVSKAYA, A.V.;
KIRILLOV, Yu.B.

"Creation d'anastomoses d'organes."

report presented at the 18th Congress of the International Society of Surgery, Munich,
13-20 Sep 1959.

KIRILLOV, Yu. B.

Artificial circulatory by-pass under experimental and clinical conditions [with summary in English]. Eksper.khir. 4 no.1:40-46
Ja-F '59. (MIRA 12:2)

1. Iz kafedry gosspital'noy khirurgii (zav. - prof. B.P. Kirillov)
Ryazanskogo meditsinskogo instituta imeni akademika I.P. Pavlova i
2-y gorodskoy bol'nitsy Ryazani (glavnyy vrach I.A. Galyun).

(BLOOD CIRCULATION, physiol.

form. of artif. by-pass by ligation of abdom.
& thoracic aorta in dogs (Rus))

BERNSHTEYN, L.A.; KIRILLOV, Yu.D.; POL'SKIY, L.L.; SATARIN, V.I.; Prinimeli
uchastiyе: GRANITSA, A.G.; KANOVICH, Ye.G.; GRODZINSKIY, Ye.Yu.;
KHUDYAK, M.L.; DOBROLOVSKIY, G.G.; ZABLOTSKIY, Ye.Z.; RYZHKIN, D.I.;
OSTROVSKAYA, N.D.

Development and adoption of a system of hydraulic conveying of
raw slurry at the Novo-Zdolbunov Cement Plant. Trudy IZhgipro-
tsementa no.4:79-107 '63.

(MIRA 17:11)

1. Gosudarstvennyy institut po proyektirovaniyu tsementnykh
zavodov v yuzhnykh rayonakh SSR (for Granitsa, Kanovich,
Grodzinskiy, Khudyak). 2. Novo-Zdolbunovskiy tsementnyy zavod
(for Dobrolovskiy, Zablotskiy, Ryzhkin, Ostrovskaya).

L 05895-67 EWT(m) 2

ACC NR: AR6031251 (A) SOURCE COED: UR/0081/66/000/011/M026/M026

AUTHOR: Kravchenko, I. V. ; Vlasova, M. T. ; Yudovich, B. E. ; Krykhtin, G. S. ; Kirillov, Yu. D. ; Turkot, I. M. ; Shorokh, L. N. ; Bugaychuk, A. V.

TITLE: The production of a quick-hardening cement at a Zdolbunov Cement-Slate Plant

SOURCE: Ref. zh. Khimiya, Part II, Abs. 11M192 20 B

REF SOURCE: Nauchn. soobshch. Gos. Vses. n. -i. in-t tsementn. prom-sti;
no. 20(51), 1965, 36-41

TOPIC TAGS: cement, quick hardening cement/Zdolbunovskiy Cement Slate Plant

ABSTRACT: A technology was developed for manufacturing very quick-hardening cement with a hardening strength of 300 kg/cm² after one day, 450 kg/cm² after three days, and 700 kg/cm² after 28 days. At the Zdolbunov Cement-Slate Plant the base mixture is made from hard chalk, clay, and loams, containing a considerable quantity of large-crystal quartz; calcining was conducted in rotating furnaces, 118 and 170 m long. The physicochemical properties of the base components were studied, and the effect of the following factors on the cement strength was analyzed:

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~~L 05985-67~~

ACC NR: AR6031251

the type of fuel, the method of grinding the clinker, and the reactivity of the components. The reactivity of the base mixtures was found to be low, since 30--45% SiO₂ was present in the form of quartz particles larger than 15 μ. The cross-

sectional view of the manufactured slurry showed large quartz crystals, ≤ 250 μ. The best results with respect to cement strength and furnace productivity were obtained with clinkers containing 55--63% C₃S and 7--8% C₃A when n = 2.3--26, and p = 1.2--1.4. The required cement strength was obtained when the specific surface was 3500--4000 cm²/g, while the specific surface should be 5000 cm²/g when calcining the clinker in a solid fuel. Mills, operating in open or closed cycles can be used: the temperature of the clinker being fed into the mill should not exceed 70--80° in the first case and 100° in the second case, and 100° at the outlet from the mill.
[Translation of abstract]

SUB CODE: 07/

kh

Card 2/2

KIRILLOV, Yu.D.; PICHKAR', N.Ya.

Methods of lowering the cost of cement. TSement 29 no.4:18-
19 J1-Ag '63. (MIRA 16:11)

1. Zdolbunovskiy tsementno-shifernyy kombinat.

KIRILLOV, Yu.D.; KUNINETS, M.G.

Extra-quick-hardening cement. Tsement 29 no.5:15-16 S-0 '63.
(MIRA 16:11)

1. Zdolbunovskiy tsementno-shifernyy kombinat, L'vovskiy
sovet narodnogo khozyaystva.

KIRILIOV, YU. G.

5785. Gruzovoy parovoz serii LV. M., Mashgiz, 1954. 52s. s ill. 20sr. 1.500 ekz.
lr. 40k.-(55-1085) p. 621.13

SO: Knizhnaya, Letopis, Vol. 1, 1955

Kirillov, Yu. G.

LISOVENKO, S.I.; ZOLOTUKHIN, I.M.; KOSTYUK, A.P.; LISOVENKO, E.V.; FRL'D-
MAN, M.F.; KUZNETSOV, T.F.; PIVOVAROV, L.A., inzhener, retsenzent;
SHAROYKO, P.M., inzhener, retsenzent; TURIK, E.A., inzhener, retsen-
sent; KIRILLOV, Yu.G., inzhener, retsenzent; SHVEDOV, N.A., inzhener,
retsenzent; ~~RODINSKIY~~, Ya., tekhnredaktor.

[Locomotives] Parovozy. Pt. 2. [Theory, design, and calculations for
machinery, underframe, and auxiliary parts. Dynamics, traction calcu-
lations, and brief information on operation] Teoriya, konstruktsiya i
raschet mashiny, ekipazha i vspomogatel'nykh ustroyst, dinamika, tiago-
vye raschety i kratkie svedeniya po eksploataatsii. Kiev, Gos. nauchno-
tekhn. izd-vo mashinostroit. i sudostroit. lit-ry. 1954. 475 p.

[Microfilm]

(Locomotives)

(MLRA 7:11)

TURIK, N.A.; KIRILLOV, Yu.G.

TG100 main-line diesel locomotive equipped with hydromechanical transmission. Elek.i tepl.tiaga 3 no.6:17-20 Je '59.

(MIRA 12:9)

1. Glavnyy konstruktor Luganskogo teplovozostroitel'nogo zavoda (for Turik). 2. Zamestitel'glavnogo konstruktora Luganskogo. Teplovozostroitel'nogo zavoda (for Kirillov).
(Diesel locomotives)

TURIK, N.A.; KIRILLOV, Yu.G.

The TG 100 freight and passenger locomotive. Biul.tekh.-
ekon.inform. no.8:71-73 '59. (MIRA 13:1)
(Diesel locomotives)

TURIK, N.A.; KONYAYEV, A.N.; KIRILLOV, Yu.G., dotsent

TG102 diesel locomotive with hydraulic transmission. Elek. 1
tepl. tiaga no.1:8-11 Ja '61. (MIRA 14:3)

1. Nachal'nik tekhnicheskogo upravleniya Vysshego Soveta Narodnogo Khozyaystva USSR (for Turik). 2. Ispolnyayushchiy obyazannosti glavnogo konstruktora Luganskogo teplovozostroitel'nogo zavoda (for Konyayev). 3. Luganskiy mashinostroitel'nyy institut (for Kirillov).
(Diesel locomotives)

KIRILLOV, Yu.G.

Selecting the type of hydraulic torque converter for high-power
hydraulic transmissions of diesel locomotives. Study LVMI 1:
22-31 '62 (MIRA 17:57)

KIRILLOV, Yu.G., dotsent

Selecting the hydraulic torque converter for high-capacity hydraulic drives of diesel locomotives. Vest.TSNII MPS
21 no.6:19-23 '62. (MIRA 15:9)

1. Luganskiy mashinostroitel'nyy institut.
(Diesel locomotives—Hydraulic drive)

KIRILLOV, -Yu.G., -dotsent

Improvement of the methods for the analysis of the characteristics of diesel locomotives with hydraulic drive. Vest. TSNII MPS 22 no.8:13-18 '63. (MIRA 17:2)

1. Luganskiy mashinostroitel'nyy institut.

RUMYANTSEV, B.P., dots., otv. red.; GULIDA, E.N., red.; KARTASHOV,
I.N., prof., red.; KIRILLOV, Yu.G., dots., red.;
MOGIL'NIY, N.I., dots., red.; SEVRYUK, V.N., dots., red.;
STAN'KO, D.G., dots., red.; TSOY, N.G., dots., red.;
KHLUS, A.A., dots., red.; POLUBICHKO, B.V., red.

[Problems of locomotive manufacture, technology of machine
manufacture and founding] Voprosy lokomotivostroenia,
tekhnologii mashinostroenia i liteinogo proizvodstva.
L'vov, Izd-vo L'vovskogo univ., 1964. 126 p. (MIRA 17:10)

1. Lugansk. Mashinostroitel'nyy institut.

ACC NR: AP7001842

SOURCE CODE: UR/0135/66/000/012/0033/0034

AUTHOR: Kulikov, F. R. (Engineer); Kirillov, Yu. G. (Engineer)

ORG: none

TITLE: Weldability of thin AMg6 alloy sections

SOURCE: Svarochnoye proizvodstvo, no. 12, 1966, 33-34

TOPIC TAGS: aluminum magnesium titanium alloy, weldability, thin metal
weldability, weld porosity, weld air permeability, porosity sealing, alloy welding

ABSTRACT: Poor air tightness caused by hydrogen porosity is the main defect in thin (0.6—1.5 mm) AMg6 alloy sheet welds. All efforts to eliminate the porosity by careful cleaning of the base material and filler wire and by strict control of welding conditions failed. Repairing the defective welds was of little or no help and, in some cases, had a negative effect. Some parts which were air tight showed a leakage after prolonged storage. Several methods for improving the weld airtightness were tested. Painting the welds with an adhesive-base sealant produced the best results. The sealant is not toxic; does not react with alloy, is corrosion resistant, and increases the weight of structure. The strength of adhesion between the sealant and alloy is 90 kg/cm². The welded parts with sealed welds showed no leaks under an air pressure of 3 atm. The properties of sealant are not affected by temperatures from

Card 1/2

UDC: 621.791.011:669.715

ACC NR: AP7001842

-60C to +200C. The effect of the sealant on the fatigue behavior of AMg6 alloys welds is being investigated. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 13, 11/ SUBM DATE: none/ ORIG REF: 003/ ATD PRESS: 5111

Card 2/2

YIRILLOV, Yu. I.

KIRILLOV, Yu. I. -- "The Starting Material in the Selection of Cats for the Peat-Pog Soils of the Northwestern Zone of the USSR." All-Union Order of Lenin Academy of Agricultural Sciences imeni V. I. Lenin. All-Union Sci Res Inst of Plant Growing. Leningrad, 1955. (Dissertation for the Degree of Candidate in Agricultural Sciences)

SO: Knizhnaya Letopis', No 1, 1956

KIRILLOV, Yu.I., kandidat sel'skokhozyaystvennykh nauk.

Effect of different time and methods of harvesting on the sowing
quality of hard spring wheat seed. Zemledelie 5 no.7:73-74 J1 '57.
(MLRA 10:8)

1. Priaral'skaya opyt'naya stantsiya.
(Wheat)

KIRILLOV, Yu.I., kand.sel'skokhozyaystvennykh nauk

Ways of utilizing artesian wells in the semideserts of Kazakhstan. Zemledelie 23 no.3:58-60 Mr '61. (MIRA 14:3)

1. Priaral'skaya opytная stantsiya.
(Kazakhstan--Artesian wells)

KIRILLOV, Yu.I., kand.sel'skokhoyaystvennykh nauk

Some problems of the biology of African millet. Agrobiologiya
no.5:790-791 S-0 '62. (MIRA 15:11)

1. Priaral'skaya opytnaya stantiya, g. Chelkar.
(Kazakhstan--Millet)

KIRILLOV, YU. I.

Metallurgy

Dissertation: "Conditions for the Formation of Graphite Globules in Cast Iron." Cand
Tech Sci, Ural' Polytechnic Inst, Sverdlovsk, 1953.
(Referativnyy Zhurnal--Khimiya, Moscow, No 3, Feb 1954)

SO: SUM 213, 20 Sept. 1954

KIRILLOV, Yu-L.

SADOVSKIY, V.D., doktor tekhnicheskikh nauk, professor, redaktor; KIRILLOV,
Yu.L., kandidat tekhnicheskikh nauk, retsenzent; DUQINA, N.A.,
tekhnicheskiiy redaktor

[Problems in physical metallurgy and heat treatment of metals; a
collection of articles] Problemy metallovedeniia i termicheskoi
obrabotki; sbornik statei. Moskva, Gos. nauchno-tekhn. izd-vo
mashinostroit. lit-ry, 1956, 220 p. (MIRA 9:11)
(Metals--Heat treatment)

SOV/137-59-1-1188

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 162 (USSR)

AUTHOR: Kirillov, Yu. L.

TITLE: On the Formation of Spheroidal Graphite in Gray Cast Iron (K voprosu obrazovaniya globulyarnogo grafita v serom chugune)

PERIODICAL: Tr. Ural'skogo politekhn. in-ta, 1958, Nr 68, pp 38-44

ABSTRACT: The existing theoretical explanations of the formation of spheroidal graphite are inconsistent. Preferably, some common factor should be found in the action of the various reagents introduced into the liquid phase for the purpose of effecting segregation of spheroidal graphite; it would then be possible to explain the origin of spheroidal and other forms of graphite found in gray cast iron. The assumption that the formation of various types of graphite is connected with kinetic peculiarities of the process of its crystallization may constitute such a theoretical basis.

A. S.

Card 1/1

L 44401-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6023640

SOURCE CODE: UR/0149/66/000/002/0129/0134

AUTHOR: Zubov, V. Ya.; Grachev, S. V.; Kirillov, Yu. L.; Spiridonova, L. M.; Norkina, E. B.

ORG: Department of Metallurgy, Ural Polytechnic Institute (Kafedra metallovedeniya Ural'skiy politekhnicheskiy institut)

TITLE: Study of mechanical properties and relaxation stability of Cu-Ti alloys

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 2, 1966, 129-134

TOPIC TAGS: copper containing alloy, titanium containing alloy, chromium containing alloy, mechanical property, tensile strength, elastic modulus, stress relaxation, temperature dependence

ABSTRACT: The effect of certain factors of stress relaxation and other mechanical properties of five Cu-Ti alloys was studied. The alloys had Ti contents ranging from 1.10 to 5.50%; two of the alloys had Cr contents of 0.52 and 1.00%. After vacuum melting and remelting, 60 kg ingots were reduced to strip (6 mm wide by 0.4 and 0.25 mm thick) which was heated to 860°C for 1 hr, quenched into water and cold worked 20, 40, 60 and 80%. Aging was carried out at 300, 350, 400, 450 and 500°C for 1 to 5 hrs. The best strengths were obtained by aging at optimal temperatures for 2 hrs. Tensile strengths and relative elongations are given as functions of aging temperature for all alloys in

UDC: 669.35'295:669.018.2

Card 1/2

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57
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L 44401-66

ACC NR: AP6023640

the quenched and quenched + 60 % deformed condition. The highest strength (118 kg/mm²) was for 5.50% Ti + 0.52% Cr additions. Elastic moduli and electroconductivities for all alloys after quenching + 40% deformation are given. Maximum moduli were observed at aging temperatures of 400-450°C and for all alloys the limit was 60-70 kg/mm². The best heat treatment, resulting in optimum combinations of strength and ductility, was obtained after deforming the quenched alloys 40-60% and aging at 400-450°C. These properties are considered to be ideal for replacing Cu-Be alloys used in springs. Alloying of Cu with Ti and Cr increased the electrical conductivity after quenching, however, this dropped considerably upon aging as a result of second phase decomposition. The elastic modulus, determined by the dynamic method, is given as a function of aging temperature and compared with beryllium bronze BrB2. This modulus rose sharpest for BrB2 indicating a faster decomposition of the solid solution. By increasing the Ti content the dynamic modulus decreased, probably as a result of a lowered interatomic bonding. Relaxation tests (relative relaxation stability as a function of time) were run at 200 and 400°C and the results were compared to BrB2. The Cu-Ti alloys had 4-15 times the relaxation stability at 400°C of BrB2. Again the best alloy was the 5.50% Ti + 0.52% Cr. Orig. art. has: 5 figures, 1 table, 1 formula.

SUB CODE: 11,20/ SUBM DATE: 06Oct64/ ORIG REF: 006

Card 2/2 *efh*

KIRILLOV, Yu.M., kand. sel'skokhozyaystvennykh nauk

Lodging of oats caused by stem rot. Zashch.rast.ot vred. i bol.
3 no.6:56 N-D ' 58. (MIRA 11:12)
(Oats--Diseases and pests)

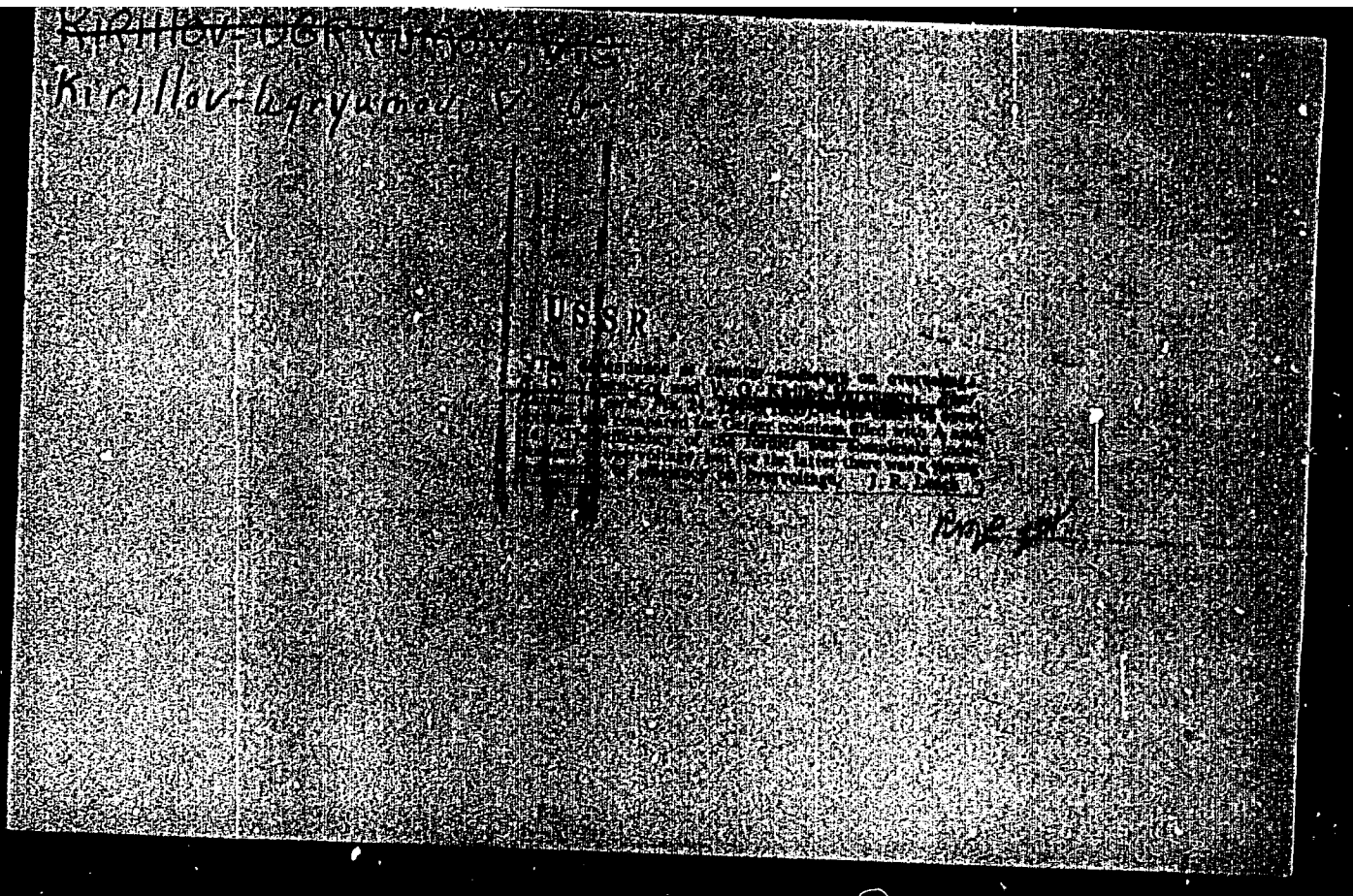
KIRILLOV, Yu.N.

~~Occurrence of the river beaver in the Ukrainian S.S.R.~~ Trudy VNIIO
no.13:53-61 '53. (MLRA 7:5)
(Ukraine--Beavers) (Beavers--Ukraine)

KRILLOV-SANTONOV, V. G.

KRILLOV-SANTONOV, V. G. -- "The Magnetic Mass-Spectrometer in Connection
With the Wilson Cloud Chamber for the Investigation of Cosmic Radiation."
Cand Phys-Math Sci, Moscow Mechanics Inst, Moscow 1954. (Referativnyy
Zhurnal--Fizika, Jan 54)

DO: U: 161, 22 July 1954



KIRILLOV-UGRYUMOV, V.

USSR/Nuclear Physics - Mass Spectrometer 11 Sep 53

"Magnetic Mass Spectrometer Coupled With Wilson's Chamber," A. Alikhanyan, Act Mem Acad Sci USSR, V. Kirillov-Ugryumov, N. Shostakovich and V. Fedorov, Phys Inst im Lebedev, Acad Sci USSR and Phys Inst, Acad Sci Georgia SSR

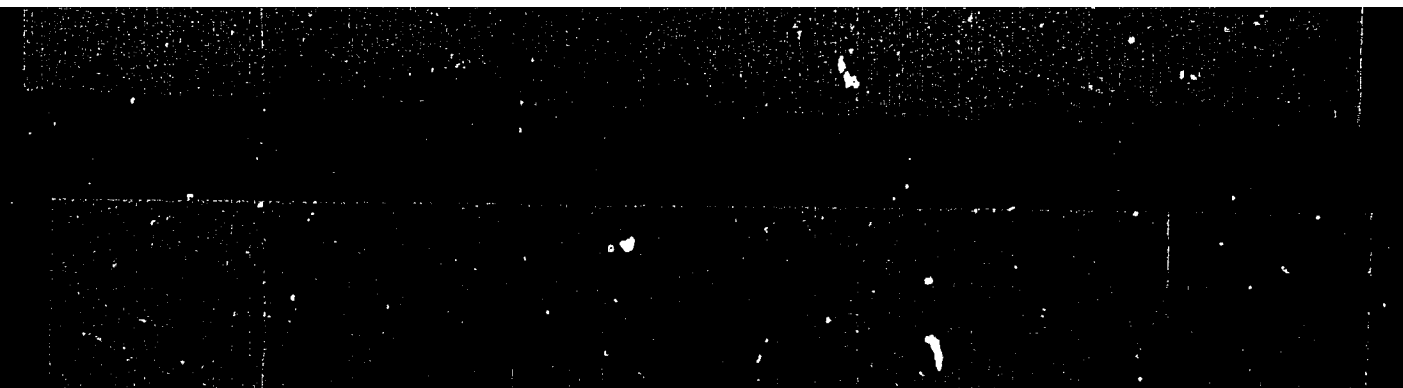
DAN SSSR, Vol 92, No 2, pp 255-257

Spectrometer facilitates accurate measurements of the energy of a charged cosmic-ray particle and its tracing. It allowed the first detection of unstable particles called varitrons. Recently this spectrograph was coupled with Wilson's chamber and operated

269T85

on the mountain peak Alagez at 3200 m altitude. Equipment and results are described. Indebted to B. N. Deryagin, M. M. Veremeyev, L. Bagdasaryan, G. Badalyan, D. Shkarlet. Rec 21 Jul 53.

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000722710002-0



APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000722710002-0"

USSR/Physics - T-particles

Card 1/1 Pub. 22 - 6/40

Authors : Alkhonyan, A. I., member correspondent of the Acad. of Scs. of USSR;
Dayon, M.I.; Shostakovich, N. V.; Kirillov-Ugryuzov, V. G. and Deryagin, B.N.
Title : Unstable charged particles heavier than proton.

Periodical : Dok. AN SSSR 99/3, 361-364, Nov 21, 1954

Abstract : Four cases of charged particles heavier than protons, observed in Wilson's camera, are described. These particles were designated T-particles and their mass, sign, durations and energy were estimated. They are considered as being particles of a decomposition process at the end of which the formation of π -mesons was observed. A scheme of the decomposition process can be written as follows: $T \rightarrow n^0 + \pi^0 (\pi^\pm) + Q$, where Q is energy carried away by the neutron and the meson, from the T-particle when the latter is in a state of rest. Six references; 2-USSR and 4-Foreign (1953-1954). Table; illustrations.

Institutions: Physical Institute of the Acad. of Scs. of the Arm SSR
Physical Institute of the Acad. of Scs. of the USSR

Submitted :

ALIKHANYAN, A.I.; KIRILLOV-UGRYUMOV, V.G.

~~XXXXXXXXXXXXXXXXXXXX~~
Slow μ -meson scattering in copper. Izv. AN SSSR. Ser. fiz. 19 no. 6:
737-746 N-D '55. (MLBA 9:4)

1. Fizicheskiy institut imeni P.N. Lebedeva Akademii nauk SSSR.
(Cosmic rays) (Nuclear physics)

USSR/Nuclear Physics - Wilson chamber

FD-2206

Card 1/1 Pub. 146-11/25

Author : Kirillov-Ugryumov, V. G.; Fedorov, V. M.; Deryagin, B. N.

Title : Rectangular Wilson chamber with two-sided expansion

Periodical : Zhur. eksp. i teor. fiz. 28, 603-607, May 1955

Abstract : The authors describe a rectangular Wilson cloud chamber with two-sided expansions which is convenient for use in conjunction with the masspectrometer. They thank Professor A. I. Alikhanyan for his guidance, and also M. M. Veremeyeva, V. A. Nikolayeva, G. D. Davimusa, S. G. Ryumina, and N. A. Golubchikova for their assistance. Two photographs are given of tracks of cosmic rays recorded in their chamber. [One photograph has been mutilated after insertion in the magazine.] Five references, including one USSR: A. A. Alikhanyan, V. G. Kirillov-Ugryumov, N. V. Shostakovich, and V. M. Fedorov, DAN SSSR, 92, 1953.

Institution : Physics Institute im. P. N. Lebedev, Academy of Sciences USSR

Submitted : April 27, 1954

KIRILLOV-UGRYUMOV, V.G.; MOSKVICHEV, A.M.; LOMAKIN, S.S.

Scattering of μ -mesons in beryllium. Nek. vop. inzh. fiz.
no.1:22-29 '57. (MIRA 12:5)
(Mesons--Scattering) (Beryllium)

KIRILLOV. Ugryumov, V.G.

101-3-3/40

AUTHORS: Kirillov-Ugryumov, V.G., Deryagin, B.M., Merson, G.I.

TITLE: A Rectangular Wilson Chamber with Side Illumination
(Pryanougol'naya kamera Vil'sona s bokovym osveshcheniyem)

PERIODICAL: Priory i Tekhnika Eksperimenta, 1957, Nr 3, pp.15-18.
(and 1 plate) (USSR)

ABSTRACT: The working volume of the chamber is 32 litres and its depth 148 mm. Its rectangular shape makes it easier to use it with other experimental apparatuses (mass spectrometer of Alikhanov-Alikhanyan, another chamber, etc.). Side illumination gives a uniformity in the images of tracks passing through the chamber. A sectional drawing of the chamber is shown in Fig.1. The chamber is made from duralumin coated with bakelite on the inside. 5 beryllium plates each 10 mm thick and placed in aluminium frames could be introduced into the sensitive volume. The plates were coated with thin layers of aluminium (used to introduce a clearing field) and covered with bakelite varnish which was then polymerised. The expansion was carried out using two spark valves described in (Refs.2 and 3) except that they were now made of organic glass

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120-3-3/40

A Rectangular Wilson Chamber with Side Illumination.

(designed for pressures up to 1.5 atm. in the expansion volume). For slow expansions, the valve described in (Ref.4) was used. The temperature was stabilised to $\pm 0.5^{\circ}\text{C}$ by placing the chamber in a special thermostating case. Typical photographs of fast particles are shown in Fig.7. A special investigation was carried out of the performance of the chamber in a magnetic field. Scattering of μ -mesons in lead has also been investigated and results will be published later. M.M.Veremeyev, V.A.Nikolayev and A.M.Moskvichev collaborated. There are 7 diagrams, no tables and 5 references, of which 1 is Russian, 1 is Italian and 3 are English.

ASSOCIATION: **Institute of Physics imeni P. N. Lebedev.**
(Fizicheskiy Institut im. P.N.Lebedeva)

SUBMITTED: October 13, 1956.

AVAILABLE: Library of Congress.

Doc. 8/1 1. Cloud chambers-Operation

KIRILLOV. UGRYUMOV U.C.

56-1-50/56

AUTHORS: Alikhanyan, A. I. , Kirillov-Ugryumov, V. G. , Kotenko, L. P. ,
Kuznetsov, Ye. P. , Popov, Yu. S.

TITLE: The Angular Distribution of Positrons in the $\pi^+ - \mu^+ - e^+$ Decay
in Propane (Uglovoye raspredeleniye pozitronov pri $\pi^+ - \mu^+ - e^+$ -
raspade v propane)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34,
Nr 1, pp. 253 - 254 (USSR)

ABSTRACT: The measurements discussed here are also important from the stand-
point of the suitability of propane for measurements of the pheno-
mena of angular correlations which are of the same nature as the
 μ -e-decays. The authors in this connection think of an extensive
use of propane bubble-chambers. The best arrangement is illustrated
by a figure. A bubble chamber with the volume $(7,2 \times 6,5 \times 16) \text{cm}^3$
was irradiated in a polyethylene-target with a beam of positive
pions with the energy 175 MeV in the phasotron of the United Insti-
tute for Nuclear Research (Ob'yedinennyy institut yadernykh issle-
dovaniy). Altogether 8000 photographs were taken on which 6670
 $\pi^+ - \mu^+ - e^+$ -decays were determined. The authors determined the
angular distribution for the projections of the spatial angles to
the plane of the photoplate. The experimentally determined angular

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56-1-50/56

The Angular Distribution of Positrons in the $\tau^+ - \mu^+ - e^+$ -Decay in Propane

distribution of the decay electrons is illustrated in a diagram. This distribution can be approximated sufficiently well by a function written down here. The ratio (number of electrons emitted in the angular interval $90 - 180^\circ$) / (number of electrons emitted in the interval $0 - 90^\circ$) is 1,19. This corresponds to a coefficient $A = -0,22 \pm 0,03$ in the expression $(1 + A \cos \vartheta)$ for the distribution of the solid angles. The angles in the last-mentioned ratio were related to the direction of the projection of the initial impulse of the positive myons. There are 2 figures, and 5 references, 2 of which are Slavic.

ASSOCIATION: Physicoal Institute imeni P. N. Lebedev AN USSR (Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR)

SUBMITTED: October 25, 1957

AVAILABLE: Library of Congress

Card 2/2

KIRILLOV-UGRYUMOV, V. G.

56-1-51/56

AUTHORS: Ivanov, Yu. M. , Kirillov-Ugryumov, V. G.

TITLE: The Dependence of the Angular Correlation in the μ^-e^- -Decay of Energy (Zavisimost' uglovoy korrelyatsii pri μ^-e^- raspade ot energii)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr 1, pp. 255 - 256 (USSR)

ABSTRACT: At first reference is made to papers dealing with the same subject. The authors investigated the angular correlation in the decay of negative myons in an emulsion. A stack of photo-emulsion layers НКФМ-Р with a diameter of 10 cm and a thickness of 400 μ was irradiated with a beam of negative myons of the phasotron of the United Institute for Nuclear Research (Ob'yedineniy institut yadernykh issledovaniy). The negative myons were produced in the decay of negative pions with the energy 350 MeV and were then filtered from foreign particles with a carbon-filter. In the emulsion the negative myons were recorded with an energy lying close to the maximum energy. The beam of negative myons could be considered polarized. In the examination of the individual emulsion layers the shut-down of myons with long ranges with decay electrons was observed. Altogether 63% cases of μ^-e^- -decays were

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The Dependence of the Angular Correlation in the μ^-e^- -Decay of Energy 56-1-51/56

utilized. The energy of the electrons was measured by the method of multiple scattering. In order to be able to compare the experimental data with the formula given here, the angle ϑ between the direction of the impulse of the electron emitted in the decay and the spin of the myon must be measured. In 135 cases of μ^-e^- -decays 64 electrons flew forward ($0 \leq \vartheta \leq 90^\circ$) and 71 electrons flew backward ($90^\circ < \vartheta < 180^\circ$). The spin of the myon is at least in some particles supposed to retain the original direction in the emulsion until the moment of decay. A diagram shows the energy spectra separately for the electrons flying off forward and backward. For the energies $\mathcal{E} > 0,6$ the ratio of the electrons "forward-backward" amounts to 25 : 36. At small energies ($\mathcal{E} < 0$) 39 particles flew forward and 35 backward. Moreover the asymmetry was investigated in various angular intervals, the "forward-backward" ratios found at energies of > 35 MeV are summarized in a table. Further diagrams compare the energy spectra in different angular intervals with the corresponding theoretical curves. From the analysis of the angular correlation of the μ^-e^- -decay follows a qualitative agreement with the theory of the two-component neutrino. Unfortunately the existing data are not sufficient for quantitative conclusions. There are 2 figures, 1 table, and 4 references, 3 of which are Slavic.

Card 2/3

The Dependence of the Angular Correlation in the μ^-e^- -Decay of Energy 56-1-51/56

ASSOCIATION: Moscow Engineering-Physical Institute
(Moskovskiy inzhenerno-fizicheskiy institut)

SUBMITTED: October 28, 1957

AVAILABLE: Library of Congress

Card 3/3

AUTHORS: Kirillov-Ugryumov, V. G., Moskvichev, A. M. 56-2-8/51

TITLE: The Scattering of μ -Mesons in Beryllium
(Rasseyaniye μ -mezonov v berillii)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958,
Vol. 34, Nr 2, pp 322-326 (USSR)

ABSTRACT: The authors investigated the scattering of cosmic myons with momenta of $130 \text{ MeV} \cdot \text{c}^{-1}$ in beryllium. If the anomalous scattering is connected with a non-nuclear interaction the most marked appearance of the effect is to be expected in thin layers of light elements (where the background caused by Coulomb scattering is comparatively weak). The arrangement of the measuring apparatus is described by means of a figure. A great rectangular Wilson chamber is controlled by a counter telescope. The present work investigated the scattering of particles which came to a standstill in a 2 cm thick lead filter between the last series of coincidence counters and the series of anti-coincidence counters. The scattering of myons was investigated at sea level in 5 beryllium plates (1 cm thick) which were mounted in the Wilson chamber. The flux of

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The Scattering of μ -Mesons in Beryllium

56-2-8/51

particles which passed through the 1 cm thick lead filter practically consists completely of myons. The myons registered by the apparatus described above had a momentum of $(130 \pm 16) \text{ MeV} \cdot \text{c}^{-1}$. Altogether 2250 cases of the scattering of myons were registered in beryllium plates. Among them was not one case of scattering through an angle the projection of which would be greater than 6° . A diagram shows the angular distributions of the myons for each of the beryllium plates investigated. From the range and the scattering angles the value $213 \pm 10 m_e$ is obtained for the mean mass of myons. The coincidence of theoretical and experimental angular distribution makes possible the conclusion that the myons with the momenta $130 \text{ MeV} \cdot \text{c}^{-1}$ are scattered the same way in the 1 cm thick beryllium as is to be expected with pure Coulomb interaction of myons with beryllium atoms. There are 3 figures, 1 table, and 4 references, 2 of which are Slavic.

ASSOCIATION: **Moscow Physics and Engineering Institute** (Moskovskiy
inzhenerno-fizicheskiy institut)

Card 2/3

The Scattering of μ -Mesons in Beryllium

56-2-8/51

SUBMITTED: August 30, 1957

AVAILABLE: Library of Congress

1. Mesons-Scattering
2. Beryllium-Applications
3. Wilson chambers-Applications

Card 3/3

AUTHORS: Alikhanyan, A. I., Kirillov-Ugryumov, SOV/56-34-5-8/61
V.G., Kotenko, L. P., Kuznetsov, Ye. P., Popov, Yu. S.

TITLE: The Angular Anisotropy in a $\pi^+ - \mu^+ - e^+$ -Decay, Measured in a
Propane Bubble Chamber (Uglovaya anizotropiya pri $\pi^+ - \mu^+ - e^+$
-raspade, izmerennaya v propanovoy puzyr'kovoy kamere)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
Vol. 34, Nr 5, pp. 1101-1109 (USSR)

ABSTRACT: The authors investigated the angular anisotropy in a $\pi^+ - \mu^+ - e^+$ -decay with discrimination of the decay electrons with respect to energy. These decays were recorded by a propane bubble chamber. This chamber was irradiated in a beam of positive pions on the phasotron of the Ob'yedinennyy institut yadernykh issledovaniy (United Institute of Nuclear Research). The positive pions were produced by 660 MeV protons on an external polyethylene target. The authors give a short description of the measuring device. They measured the projections of the solid angles between the momenta of the positive myon and the electron on the plane of the film in the photographic camera. In this case the distribution $dN \sim [1 + a(\pi^2/16)\cos\varphi]d\varphi$ is to be used. A figure gives the distributions of the projections of the

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The Angular Anisotropy in a $\pi^+ - \mu^+ - e^+$ -Decay,
Measured in a Propane Bubble Chamber

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angles between the initial momenta of the positive myon and of the electron for 6670 $\pi^+ - \mu^+ - e^+$ -decays. The experimental distribution is well approximated by the above mentioned formula. The coefficient A, which is found from the relation "(backward/forward)", was equal to $A = -0,22 \pm 0,03$. The results of the measurements discussed in this paper lead to the following conclusions: 1) When the energy of the electrons which are produced in the $\mu^+ - e^+$ -decay increased, also the angular anisotropy increases. This fact is not inconsistent with the theory of the two-component neutrino. The coefficient A in the distribution of the angles between the momenta of the myon and the electron is equal to $A = -0,22 \pm 0,03$. (This coefficient A was found by recording of the $\pi^+ - \mu^+ - e^+$ -decays in a propane chamber). The value of this parameter, averaged over 5 investigations with propane chambers (after taking into account a correction due to the depolarization) is equal to $a = -0,28 \pm 0,03$. This value nearly coincides with the value of the parameter averaged over 9 investigations with photographic emulsions. The mean value of the results of the measurements with propane bubble chambers and with photo-

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The Angular Anisotropy in a $\pi^+ - \mu^+ - e^+$ -Decay,
Measured in a Propane Bubble Chamber

SOV/56-34-5-8/61

graphic emulsions is equal to $a = -0,283 \pm 0,023$. The distribution of the angles between the meson momenta in the $\pi^+ - \mu^+$ decay is isotropic. In an appendix to this paper the relation between the spatial distribution of the angles and the distributions of the projections of the angles upon the planes of the $\mu - e$ -decays and of the $\pi - \mu - e$ -decays is calculated. The authors thank Professor V.P. Dzhelepov who enabled them to carry out their experiments on the phasotron of the Ob"-yedinennyy institut yadernykh issledovaniy. Further, the authors thank B.A. Dolgoshein for his valuable discussions; L.A. Kuzin, A.V. Samoylov and F.M. Sergeyev for their participation in the evaluation of the experimental results and A.A. Bednyakov for his help in the experiments at the phasotron. There are 6 figures, 1 table, and 14 references, 4 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P.N. Lebedev, AS USSR)

Card 3/4

The Angular Anisotropy in a $\pi^+ - \mu^+ - e^+$ -Decay,
Measured in a Propane Bubble Chamber

SOV/56-34-5-8/61

SUBMITTED: December 12, 1957

1. Radioactive substances--Decay
2. Propane bubble chambers
- Applications
3. Proton bombardment--Applications

Card 4/4

21(7)

AUTHORS:

SOV/56-35-5-45/56
Kirillov-Ugryumov, V. G., Kotenko, L. P., Kuznetsov, Ye. P.,
Sergeyev, F. M.

TITLE:

The Elastic Scattering of π^+ -Mesons on Carbon at Energies of
5 + 22 MeV (Uprugoya rasseyaniye π^+ -mezonov na uglerode pri
energiiakh 5 + 22 MeV)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
Vol 35, Nr 5, pp 1300-1302 (USSR)

ABSTRACT:

For their measurements the authors used a propane bubble chamber having a volume of 750 cm³. This chamber was irradiated on the phasotron of the Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Research) with a beam of positive pions. The energy interval investigated corresponds to the residual ranges of from 0.125 to 2 g/cm² of pions in propane. The pions were ascertained by the $\pi \rightarrow \mu \rightarrow e$ decay when being slowed down in the working substance. A total of 5675 photographs of photon traces was dealt with. Formation of stars by pions at from 5 to 22 MeV was not investigated, the inelastic scattering of positive pions is only inconsiderable at these energies. The authors determined the angular projections of the single scattering.

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SOV/56-35-5-45/56

The Elastic Scattering of π^+ -Mesons on Carbon at Energies of 5 + 22 MeV

of pions to the plane of the film in the photographic camera. Of the 5675 pions 75 were scattered round an angle (within the energy interval investigated), the projection of which is greater than 15° . After Coulomb (Kulon) scattering was taken into account, 31 nuclearly scattered particles remained. The corrections taken into account when determining the nuclear scattering on carbon are given. A table contains the elastic scattering cross sections of pions determined by the authors of the present paper as well as by other authors. At energies of 8 - 22 MeV the cross sections found have the same values within the error limits as the elastic scattering cross sections at 33 MeV. At 5 - 8 MeV the scattering cross section increases quite considerably. Within this energy range the wavelength of the pion already exceeds the dimensions of the carbon nucleus. An analysis of the cross section energy dependence and of the angular distributions will be published later. The authors thank Professor A. I. Alikhanyan for the interest he displayed in this work, and Professor V. P. Dzalepov for making it possible to carry out measurements on the phasotron of the Institute for Nuclear Research. There are 1 table

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SOV/56-35-5-45/56

The Elastic Scattering of π^+ -Mesons on Carbon at Energies of 5 + 22 MeV

and 13 references, 4 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of
Sciences, USSR)

SUBMITTED: July 10, 1958

Card 3/3

Kirilov-Ugryumov, V. G.

SCATTERING OF SLOW μ -MESONS IN DIFFERENT SUBSTANCES
V. G. Kirilov-Ugryumov, B. A. Dolgoshein, A. M. Moskvichev,
L. P. Morozova

In order to verify the data on "abnormal" μ -meson scattering, angular distributions of μ -mesons with a momentum close to 100 Mev/s in thin layers of beryllium, copper and iron were obtained by means of a multiplate cloud chamber.

The measurements were carried out with μ -mesons at sea level.

The experimental distributions agree satisfactorily with the theoretical curves plotted for electro-magnetic interactions between μ -mesons and nuclei.

An analysis was made of possible errors that may result in the spurious effect of the "abnormal" scattering.

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

SOV/120-59-1-9/50

AUTHORS: Kirillov-Ugryumov, V. G., Kotenko, L. P., Kuznetsov, Ye. P.,
 Samoylov, A. V.

TITLE: Determination of the Masses and Momenta of Charged Particles
 from Multiple Scattering in a Propane Bubble Chamber.

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 1, pp 44-47 and
 1 plate (USSR)

ABSTRACT: 246 photographs of particle tracks which came to rest in
 the bubble chamber (Ref.2) were examined. The tracks were
 analyzed by measuring the multiple scattering by the chord
 method suggested by Goldschmidt-Clermont et al (Ref.1). To
 determine the masses the formula given by Olbert et al (Ref.
 1) was employed. The following results were obtained:

$m = (268 \pm 23)m_e$	$t = 2 \text{ cm}$	312 angles
$m = (263 \pm 37)m_e$	$t = 1 \text{ cm}$	132 angles
$m_\mu = (196 \pm 25)m_e$	$t = 1 \text{ cm}$	132 angles
$m_p = (1973 \pm 184)m_e$	$t = 2 \text{ cm}$	288 angles

To determine the momenta Olbert's formulae were used (Ref.1)

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SOV/120-59-1-9/50

Determination of the Masses and Momenta of Charged Particles from
Multiple Scattering in a Propane Bubble Chamber

and it was shown that in order to determine the momenta of
mesons to 15% at 100 Mev, 25 cm of track in propane is
sufficient, while for 200 Mev protons the track length is
50 cm. There are 4 tables, 2 figures and 4 references, of
which 2 are Soviet and 2 English.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute,
Academy of Sciences USSR)

SUBMITTED: February 12, 1958.

Card 2/2

KIRILLOV-UGHYUMOV, V.G.; DOLOSHBIN, B.A.; MOSKVICHEV, A.M.; MOROZOVA,
L.P.

Scattering of μ -mesons with a momentum of about 100 Mev/c
in copper and iron. Nek.vop.eksp.fiz. no.2:80-91 '59.
(MIRA 13:2)

(Mesons--Scattering) (Copper) (Iron)

PURPOSE: This collection of articles is intended for graduate
engineers and physicists engaged in the design of physics
(laboratory) apparatus, and automatic and telemechanic equipment.

COVERAGE: This collection of articles on experimental physics was
written by members of the Moscow Physics and Engineering Insti-
tute. Each article is accompanied by drawings and references.

24(5)

AUTHORS:

~~Kirillov-Ugryumov, V. G.~~

SOV/56-36-2-11/63

Dolgoshein, B. A., Moskvichev, A. M., Morozova, L. P.

TITLE:

Scattering of μ -Mesons With Momenta of About 100 Mev/c in Copper and Iron (Rasseyaniye μ -mezonov s impul'som okolo 100 MeV/c v medi i zheleze)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 2, pp 416-423 (USSR)

ABSTRACT:

Fowler and Wolfendale (Fauler, Vol'fendal)(Ref 1) published a very complete survey of muon scattering in which they express the opinion that at low (<600 Mev) energies there exists no anomalous scattering and that the few cases in which such a scattering is reported to have been observed must be based on measuring errors. This opinion is confirmed by 3 new papers. Thus, Kirillov-Ugryumov and Moskvichev (Ref 2) investigated muon scattering at (130 ± 16) Mev/c in 1 cm thick beryllium plates and did not find a single case of the scattering angle being $>6^\circ$ among a total of 2250 cases of muon scattering investigated. Also Alikhanyan and Arutyunyan (Ref 3), who carried out mass-spectrometric investigations of muon scattering in lead plates, and Chidley (Chidli) et al. (Ref 4) ($E_\mu = 23$ Mev) could not find

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Scattering of μ -Mesons With
Momenta of About 100 Mev/c in Copper and Iron

SOV/56-36-2-11/63

any anomalous scattering. Fukui, Kitamura, and Vataze observed observed no anomalous scattering even at high muon energies (~ 1 Bev). In order to solve this problem the authors of the present paper investigated muon scattering in lead plates of 4 mm thickness at $81.2 \leq p_{\mu} \leq 144$ Mev/c. The experimental arrangement is shown in form of a schematical drawing and is described. It consisted essentially of a large cloud chamber (55.14.40) cm³ and a telescope with counters which were connected partly in coincidence and partly in anticoincidence. Particle identification was carried out in form of a rough estimate according to the ionization density and the multiple scattering of particles in the chamber plates. An estimate of the number of the protons to be expected resulted in a value of $< 2\%$ of the total number of recorded particles; the value found was $(1.5 \pm 0.5)\%$. Muon momentum measurement was carried out according to the remaining range, measuring of the scattering angles was carried out by projecting the track on to the plane of the front glass of the chamber. The standard (mean square) deviation in muon scattering angle measurements was $< 30'$. Two series of measurements were carried out separately, one with copper- and the other with iron plates. After a total exposure of 3600 hours

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Scattering of μ -Mesons With
Momenta of About 100 Mev/c in Copper and Iron

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475 muon (residual) tracks were found in the inner chamber for the former, to which there corresponded 1460 scattering events in the plates with $p_{\mu} > 75$ Mev/c; for the iron plates 890 scattering events were found. The differential angular distribution found is shown by 6 diagrams (Fig 2), 3 of which are for copper ($p = 85 \pm 4.5, 98.7 \pm 3.6, 112 \pm 3.1$) and for Fe ($p = 81.2 \pm 3, 95 \pm 2.4, 105.5 \pm 1.5$), p in Mev/c. For Cu the total investigated momentum range amounted to $85 \div 144$ and for Fe it was $81.2 \div 135$ Mev/c. In conclusion, the results obtained by the experimentally found angular distribution are compared with the theoretical muon-distribution curves by Kol'yer (Molière ?), which are based upon the assumption of a point nucleus. Good agreement was found. In an appendix to this paper calculation of the geometrical corrections in angular measurements are discussed (Figs 4, 5).

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Scattering of μ -Mesons With
Momenta of About 100 Mev/c in Copper and Iron

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The authors finally thank Professor A. I. Alikhanyan for his interest and discussions, B. I. Luchkov for his assistance, and F. R. Arutyunyan and M. I. Ter-Mikayelyan for taking part in discussions. There are 6 figures, 1 table, and 7 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy inzhenerno-fizichoskiy institut
(Moscow Engineering and Physics Institute)

SUBMITTED: August 28, 1958

Card 4/4

Kirillov-Ugrumov, V.G.

8/056/60/038/02/12/061
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AUTHORS: Alikhanyan, A. I., Kirillov-Ugrumov, V. G.,
Kotenko, L. P., Kuznetsov, Ye. P., Samoylov, A. V.

TITLE: Single Scattering of μ^- -Mesons on Carbon at Energies of
10 - 30 Mev ⁷⁹

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 38, No. 2, pp. 387 - 393

TEXT: The authors investigated the single μ^- -meson scattering on carbon with a propane bubble chamber and compared the experimental results with theory. The chamber had a size of 370·104·100 mm. The μ^- -mesons used for irradiation originated from the decay of π^- -mesons from the synchrocyclotron of the Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). The 150-Mev π^- -mesons had been produced in the inner beryllium target of this synchrocyclotron. The experimental setup is briefly described. On an average 3 - 4 μ^- stopping points were recorded per photograph (with Industar-23 lenses), or a total of about 60,000. On interpreting the pictures, such

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Single Scattering of μ^- -Mesons on Carbon at
Energies of 10 - 30 Mev

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μ^- -tracks were selected for analysis as were longer than 1.5 cm, which corresponds to an energy of over 10 Mev. The μ^- -stopping point was identified according to the μ^- -decay. Table 1 offers data concerning the flux and the energy spectrum of μ^- -mesons. 48,100 ($\pm 2.3\%$) μ^- -mesons were recorded, whose range was >1.5 cm. The investigated energy range of 10 - 30 Mev corresponded to a muon range of 1.5 - 10 cm in propane, the density of the latter amounting to 0.4 g/cm³. Table 2 gives the numbers of scattering events recorded in angular intervals of 10° each between 15 and 85°, and in the interval 85 - 180°. The following columns of the table contain the numbers of events after correction for non-recording, the finite chamber size, the passage from one angular interval to another, the π^- -decay, and the scattering on hydrogen. The correction factors averaged over the angular intervals are compiled in Table 3. The various corrections are discussed in greater detail. Column 7 of Table 2 contains the final numbers of scattering events after the application of all corrections. 204,350 cm μ^- tracks were evaluated, which number corresponds to 1260 nuclear path lengths of carbon. In this connection, 263 single scattering events on carbon were

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Single Scattering of μ^- -Mesons on Carbon at
Energies of 10 - 30 Mev

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ascertained, whose angular projection onto the photographic emulsion was greater than 15° . The obtained angular distribution of μ^- -mesons is illustrated by a diagram. The two curves show the theoretically calculated course with Coulomb scattering in the case of a finite nucleus (Curve 1, Column 8 in Table 2), and in the case of a point nucleus (Curve 2, Column 9 in Table 2). Finally, considerations concerning "anomalous" scattering are discussed; the cross section for an "anomalous" scattering, if any, cannot exceed $1.25 \cdot 10^{-28} \text{ cm}^2$ per nucleon at a scattering angle $> 45^\circ$, for scattering through an angle $> 90^\circ$ it cannot exceed $0.7 \cdot 10^{-28} \text{ cm}^2$ per nucleon. Not a single muon decay into three electrons was recorded among all 60,000 stopping events. Hence, the ratio $(\mu \rightarrow e + \nu + \bar{\nu}) / (\mu \rightarrow e + e + e) < 1.7 \cdot 10^{-5}$ is derived. The authors finally thank Professor V. P. Dzhelepyov for having rendered the experiments on the synchrocyclotron possible, and furthermore the co-workers of the laboratoriya yadernykh problem OIYaI (Laboratory for Nuclear Problems of the OIYaI), especially H. B. Yedovina and V. G. Svyatkina, as well as A. A. Bednyakov for his assistance. There are 1 figure, 3 tables, and 10 references: *ll*

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Single Scattering of μ^- -Mesons on Carbon at
Energies of 10 - 30 Mev

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5 Soviet, 3 British, 1 Indian, and 1 Dutch.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Institute of Physics imeni P. N. Lebedev of the Academy
of Sciences, USSR)

SUBMITTED: August 11, 1959

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Card 4/4

KIRILLOV-UGRYUMOV, V.G.

Atomic energy research in Switzerland. Atom. energ. 11 no.1:
79-80 JI '61. (MIRA 14:7)
(Switzerland—Atomic energy—Research)

KIRILLOV-UGRYUMOV, V.G.; KROPIN, A.A.; ROGANOV, V.S.; SAMOYLOV, A.V.

Angular and energy dispersion of π^- -mesons in a scattered magnetic field of a six-meter synchrocyclotron. Atom. energ. 11 no.3: 245-246 S '61. (MIRA 14:9)
(Mesons--Scattering) (Synchrotron) (Magnetic Fields)

KIRILLOV-UGRYUMOV, Viktor Grigor'yeovich

A decisive factor in the growth of productive forces. Voen.
vest. 41 no.11:12-13 N '61. (MIRA 16:11)

1. Rektor Moskovskogo inzhenerno-fizicheskogo instituta.

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B104/B112

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AUTHORS: Demidov, V. S., Kirillov-Ugryumov, V. G., Ponosov, A. K.,
Protasov, V. P., Sergeev, F. M.

TITLE: Elastic scattering of π^- mesons with energies of 5-12 Mev
by carbon nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,
no. 6, 1962, 1687-1688

TEXT: The experiments were made with a propane bubble chamber (dimensions, 370 by 140 by 100 mm³) exposed to the pion beam of the synchrocyclotron of the OIYaI. 19,576 π^- mesons, identified from the characteristic star at the end of their path, were selected to measure the angle of singly scattered π^- mesons projected onto the plane of the film. 81 π^- meson decay events were registered between 15 and 180°. The sign of the potential of the system pion - carbon nucleus can be determined directly from the difference between the angular distributions of π^+ and π^- mesons. There is 1 table.

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