GUZEYEV, A.A., inzhener.

Pneumatic equipment for wash boring and molding concrete piles. Rats. i izobr. predl. v stroi no. 58:3-7 '53. (MLRA 7:2)
(Concrete piling)

GUZEYEV, A.A., inzhener.

Turbine cutter boring of large diameter holes. Shakht.stroi. no.6:16-19 Je '57. (MLRA 10:7)

1. Trest Dzerzhinskruda.
(Turbodrills) (Mining machinery)

GUZEYEV, A.G., gornyy inzhener.

Organization of the shaft-sinking cycle. Ugol' vol.28 no.11:12-16 N '53.
(MLRA 6:11)
(Shaft sinking)

[illegible], A.A.

[illegible], A.A. -- "Investigation of the Process of Mechanical Rock Removal in Breaking through Vertical Shaft Columns." Min Higher Education Ukr [illegible] SSR. Donest Order of Labor Red Banner Industrial Inst imeni I.F. Krushchev. Stalino, 1955
(Dissertation for the Degree of Candidate in Technical Sciences.)

SO: Knizhnaya Letopis', No 9, 1956

GUZNYEV, Aleksandr Georgiyevich; ZVORYKINA, L.N., red.izd-va; SABITOV, A., tekhn.red.

[Splitting shaft pillars for connection with shaft bottom areas] Rassechka sopriashenii stvolov shakht s okolostvol'nymi dvorami. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 73 p. (MIRA 13:8)
(Mining engineering)

BABICHEV, N.S., kand.tekhn.nauk; GUZEYEV, A.G., kand.tekhn.nauk

"Sinking and deepening vertical shafts" by S.A.Fedorov. Reviewed by N.S.Bavichev. Gor.zhur. no.4:76-78 Ap '62. (MIRA 15:4)

1. Donetskiy politekhnicheskiy institut.
(Shaft sinking) (Fedorov, S.A.)

GUZEYEV, A.I. (Leningrad, ul. Kirillovskaya, d. 14, kor. 72)

Analysis of repeated surgery on the stomach. Klin. khir. no.10: 13-16 O '62. (MIRA 16:7)

1. Klinika khirurgicheskikh bolezney (zav.- zasl. deyatel' nauki, prof. P.N. Napalkov) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.
(STOMACH—SURGERY)

GUZEYEV, A.I. (Novgorod, Komsomol'skaya ul.,7/12, kv.2)

Strangulated transmesenteric hernia. Vest. khir. 92 no.2: 107-108 F '64. (MIRA 17:9)

1. Iz khirurgicheskogo otdeleniya (zav.-A.I. Guzeyev) Novgorodskoy gorodskoy bol'nitsy (glavnyy vrach - M.M. Pishchelev).

GUZEYEV, A.T.

Clinical aspects in dissecting aneurisms of the aorta. Trudy LSGMI 74:272-275 '62. (MIRA 17:10)

GUZEYEV, G., mladshiy nauchnyy sotrudnik

Extermination of moths in mountain forests. Zashch. rast. ot vred. i bol. 10 no.5:29 '65. (MIRA 18:6)

1. Sredneaziatskiy institut lesnogo khozyaystva, Kalininskiy rayon, Tashkentskoy oblasti.

MAKHNOVSKIY, I., kand. sel'skokhoz. nauk; GUZEYEV, G., nauchnyy sotrudnik; GALINSKIY, V.; OCHERETENKO, Ye.; VOLGINA, T.; MULLIN, S.; SAFIULLIN, M., aspirant; BABASYAN, A.

Use of toxic chemicals. Zashch. rast. ot vred. i bol. 10 no.8:21-24 '65. (MIRA 18:11)

1. Sredneaziatskiy institut lesnogo khozyaystva, Tashkent (for Makhnovskiy, Guzeyev). 2. Zaveduyushchiy Kabardino-Balkarskoy toksikologicheskoy laboratoriyey, Nal'chik (for Galinskiy). 3. Zaveduyushchiy kafedroy zashchity rasteniy Kamenets-Podol'skogo sel'skokhozyaystvennogo instituta (for Ocheretenko). 4. Starshaya laborantka Kamenets-Podl'skogo sel'skokhozyaystvennogo instituta (for Volgina). 5. Nachal'nik Tatarskoy stantsii zashchity rasteniy (for Mullin). 6. Kazanskiy pedagogicheskiy institut (for Safiullin). 7. Zaveduyushchaya Irkutskoy toksikologicheskoy laboratoriyey Vsesoyuznogo nauchno-issledovatel'skogo instituta zashchity rasteniy, Irkutskaya oblast' (for Babasyan).

MAKHNOVSKIY, I.K.; GUZEYEV, G.F.

Aerosol method for controlling apple and fruit tree ermine moths in the mountains of Central Asia. Zashch. rast. ot vred. i bol. 6 no.9:29-30 S '61. (MIRA 16:5)
(Soviet Central Asia--Fruit--Diseases and pests)
(Soviet Central Asia--Moths--Extermination)

MAKHNOVSKIY, Ivan Konstantinovich; GUZEYEV, Grigoriy Fedorovich; PYLAYEVA, L.N., red.; SAMIKOV, S., tekhn. red.

[Using aerosols in controlling apple and ermine moths in mountain forest fruit stands in Central Asia] Primenenie aerozolei v bor'be s iablonevoi i plodovoi moliami v gornykh lesoplodovykh nasazhdeniiakh Srednei Azii. Tashkent, Redaktsionno-izdatel'skii otdel MSKh UzSSR, 1962. 60 p. (MIRA 16:5)

(Soviet Central Asia--Moths--Extermination)
(Spraying and dusting in agriculture)
(Soviet Central Asia--Fruit--Diseases and pests)

MAKHNOVSKIY, I. K., kand.sel'skokhoz.nauk; GUZEYEV, G. F., mladshiy nauchnyy sotrudnik

Aerosols in controlling moths. Zashch. rast..ot vred. i bol. 8 no.5:17-18 My '63. (MIRA 16:9)

1. Sredneaziatskiy institut lesnogo khozyaystva, Tashkent.
(Kirghizistan--Moths--Extermination)

GUZEYEV, O. YE.

USSR/Medicine - Electrical Equipment Mar/Apr 52

"New Methods of Recording Additional Processes in Connection With Oscillographic Measurements By Means of a Cathode-Ray Oscillograph," O. Ye. Guzeyev, Ya. I. Magrachev, Exptl Workshops, Leningrad Order of Lenin Inst of Advanced Tng for Physicians imeni S. M. Kirov

"Med Prom SSSR" No 2, pp 41-44

Describes electronic circuits which permit recording by a new method of time marks, order number marks, and the irritation in connection with the recording of bioelec processes by means of a cathode-ray oscillograph.

20T57

GUZEYEV, O.Ye.

Balance amplifier of bioelectrical potentials. Fiziol. zh. SSSR 39 no.2:240-246 Mar-Apr 1953. (CLML 24:3)

1. Experimental Laboratories, Leningrad Institute for the Advanced Training of Physicians imeni S. M. Kirov.

GUZEYEV, O.Ye.

Electric oncograph. Fiziol. zhur. 40 no.6:729-734 N-D '54.
(MLRA 8:2)

1. Kafedra normal'noy fiziologii Pediatricheskogo meditsinskogo instituta i eksperimental'nyye masterskiye GIDUV, Leningrad.
(PHYSIOLOGY, apparatus and instruments,
oncograph, electric)

VASILEVSKIY, N.N.; [illegible]

Device for recording pressure pulse volume and the [illegible] on the MPO-2 oscillograph. Biofiz. zhur. 49 no. [illegible] (MIRA 17:11) '63.

1. From the Central Research Laboratory, First Medical Institute, Leningrad.

ORLOV, R.S.; GUZEYEV, O.Ye.

Tensometric transistor amplifier. Biul. eksp. biol. i med. 59 no.4:117-118 Ap '65. (MIRA 18:5)

1. Kafedra normal'noy fiziologii (zav. - doktor med. nauk R.S. Orlov) Sverdlovskogo meditsinskogo instituta.

GUZEYEV, V.A.

Case of traumatic pneumodephalus. Zdrav. Kazakh. 23 no.2: 76'63. (MIRA 16:10)

1. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. A.B.Rayz) Kazakhskogo meditsinskogo instituta.
(BRAIN— WOUNDS AND INJURIES)

GUZEYEV, V.K.

Repairing instruments in the Kirgzhiz S.S.R. Izm.tekh. no.7: 59-60 Jl '62. (MIRA 15:6)
(Kirghizistan--Measuring instruments--Maintenance and repair)

S/732/61/019/000/001/001
D207/D307

3,9110

AUTHORS: Guzeyev, V.T. and Dunayev, A.M.

TITLE: Measurements of the magnetic field in the Pacific Ocean sector of the Antarctic

SOURCE: Sovetskaya antarkticheskaya ekspeditsiya. Trudy. t. 19: Tret'ya morskaya ekspeditsiya na d/e 'Ob',' 1957-1958 gg.; obshcheye opisaniye i nauchnyye rezul'taty. Leningrad, Izd-vo 'Morskoy transport,' 1961, 224-237

TEXT: Three methods of measuring the geomagnetic field components were used during the Third Sea Expedition (1957-58): the eight-bearing method, measurements on board with the ship Ob' following a steady course, and the outboard method. The eight-bearing method, based on B.A. Bologov's theory and developed by V.T. Guzeyev during the Second Sea Expedition, consisted of measuring the vertical (Z) and horizontal (H) components, by means of magnetically saturated sensors placed in the upper-bridge binnacle, while the ship sailed

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Measurements of the magnetic field ...

along the eight sides of a small regular octagon. These measurements were carried out at 31 locations, beginning with 65° 44'S 114° 22'E on January 19, 1958, and the results were analyzed by a method due to B.A. Bologov. These measurements were supplemented by determination, with the same apparatus, while the ship followed a steady course: 121 such determinations of H and Z were made, beginning from the location at 65° 04'S 116° 00'E on January 20, 1958. In the outboard method a suitably sealed instrument was trailed astern at a distance (35-40 m) sufficient to avoid the magnetic effects of the ship's steel hull. With this instrument, developed by A.M. Dunayev using magnetically saturated sensors, measurements of Z and H were made at 6 locations (beginning at 65° 44'S 114° 22'E, on January 18, 1958) and the instrument was then lost due to the attachment wire which snapped during bad weather. A second instrument was made on board and further outboard measurements (Z only) were carried out at 49 locations, ending at 55° 15'S 64°50'W on June 13, 1958. Most of the locations were in meridians in the southern part of the Pacific. The accuracy of the outboard instrument was checked on land by comparing

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Measurements of the magnetic field ...

its readings with those of a Z-balance; good agreement between the two sets of readings was obtained. At sea the bad weather reduced considerably the accuracy of the outboard measurements. There are 7 tables. [Abstracter's note: Pages 231-237 containing most of the tables are missing. Pagination taken from the list of contents]

Card 3/3

KALYAZIN, Ye.A.; GUZEYEV, V.T., kand. tekhn. nauk

Portable equipment for temperature measurement with the use of semiconductor thermoresistances. Inform. sbor. TSNIIMF no.81: Tekh. ekspl. mor. flota no.17:90-95 '62. (MIRA 16:6)

(Temperature--Measurement)
(Thermistors)

S/169/63/000/002/005/127
D263/D307

AUTHOR: Guzeyev, V. T.

TITLE: Determination of magnetic-field elements in the Antarctic from a steel ship

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 44, abstract 2A255 (Inform. byul. Sov. antarkt. ekspeditsii, 1962, no. 32, 34-37)

TEXT: A considerable number of magnetic observations was collected during the 2nd and 3rd sea expeditions on the dieselelectric vessel "Ob'", which allow some positive conclusions to be made regarding the possibility of determining the geomagnetic field elements Z, D and H directly on a steel ship. Measurements were made with a ferro-sonde magnetometer, at rest relative to the ship, at special 8-directional stations. Observed values were read visually on the principal instrument of the control desk. The results were used for developing methods of magnetic measurements, which make it possible to determine absolute values of the field elements with an

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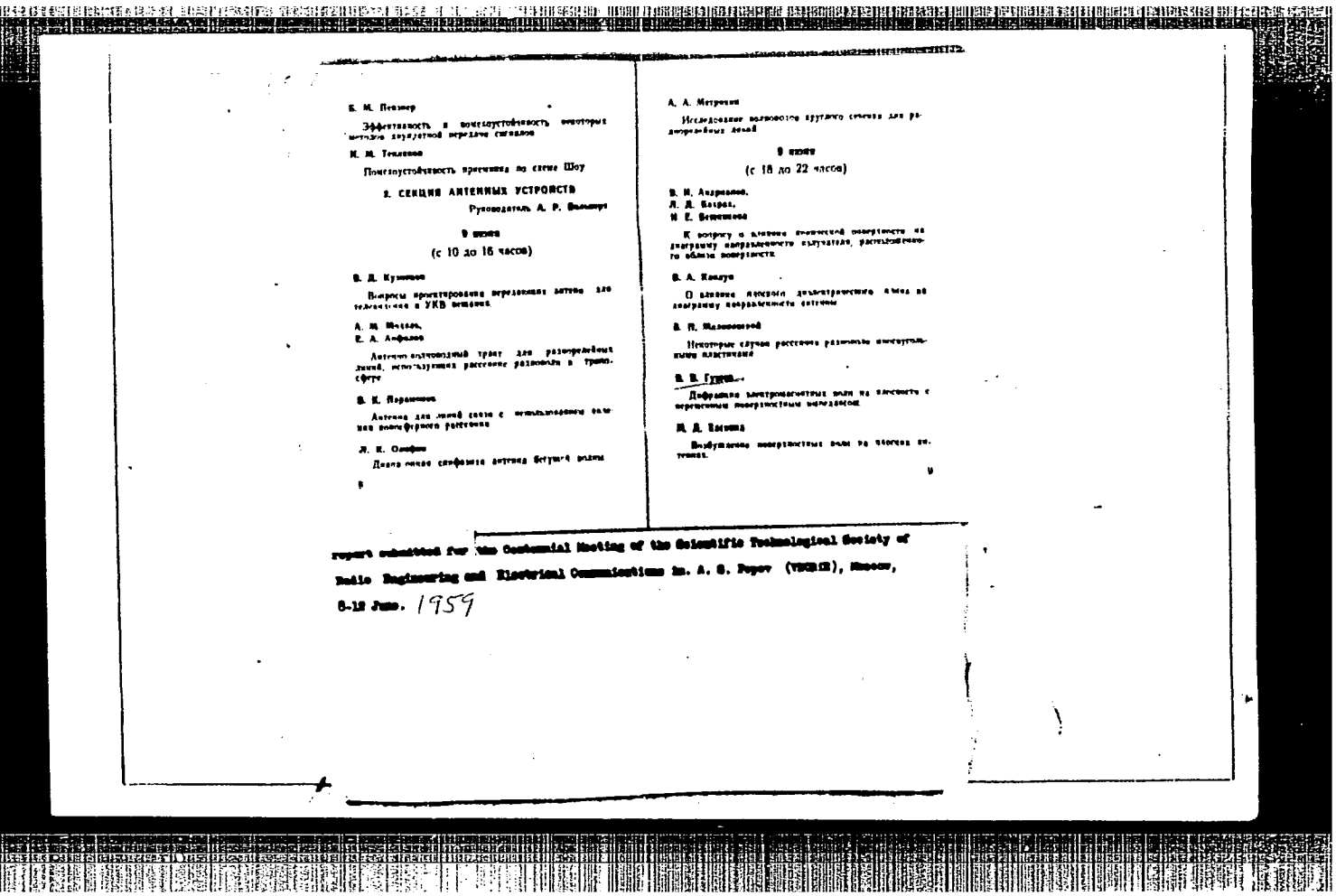
accuracy sufficient for practical purposes. The methods of analysis of route observations automatically eliminate error due to heeling of the ship during measurement. Absolute values of the Z and H components for the Antarctic in the first half of 1958 were obtained from an analysis of the magnetic observations by the above method. [Abstracter's note: Complete translation.]



Б. М. Петлер

Эффективность и помехоустойчивость некоторых методов двоичной передачи сигналов

Н. М. Тепляков

Помехоустойчивость приемника по схеме Шоу

2. СЕКЦИЯ АНТЕННЫХ УСТРОЙСТВ

Руководитель А. Р. Вольперт

9 июня

(с 10 до 16 часов)

В. Д. Кузнецов

Вопросы проектирования передающих антенн для телевизионных и УКВ станций

А. М. Мелкин,
Е. А. Анфилов

Антенна волноводный тракт для разнополяризованных линий, использующих рассеяние радиоволн в тропосфере

В. К. Нарышкин

Антенна для линий связи с использованием явления многократного рассеяния

Л. К. Оленин

Диаграммообразующая система бегущей волны

А. А. Метрогин

Исследование волнового пучкового сечения для радиорелейных линий

9 июня

(с 18 до 22 часов)

В. Н. Андрианов,
Л. Д. Бахрах,
Н. Е. Вешняков

К вопросу о влиянии диэлектрической поверхности на диаграмму направленности излучателя, расположенного вблизи поверхности

В. А. Калуго

О влиянии плоского диэлектрического слоя на диаграмму направленности антенны

В. Н. Малиновский

Некоторые случаи рассеяния радиоволн многослойными пластинами

В. В. Гущин

Дифракция электромагнитных волн на плоскости с периодически поверхностными неоднородностями

М. Д. Хаскинд

Возбуждение поверхностных волн на плоских антеннах.

Papers submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNIIRE), Moscow, 8-12 June. 1959

5.3831

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67847

S/153/59/002/06/025/029

B115/B000

AUTHORS: Ryabov, A.V., Guzeyev, V.V., Tarakanov, O.G.

TITLE: II. The Change in Viscosity of the Reaction System During Bulk Polymerization of Methyl Methacrylate With Methacrylic Acid

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 6, pp 954-955 (USSR)

ABSTRACT: This paper is devoted to the investigation of the viscosity during bulk polymerization of methyl methacrylate (MMA) and its mixture with methacrylic acid (MAA) in dependence on the content of various initiators in the monomer mixture. The azodinitrile of isobutyric acid (ADNB), the azodinitrile of 2,4-dimethyl valeric acid (ADNV), benzoyl peroxide (BP), and diacetyl (DA) were used as initiators. Values obtained for the initial polymerization rate of MMA in the presence of the initiators mentioned are given (Table). A diagram representing the dependence of the initial rate for the polymerization of a monomer mixture consisting of 85% MMA and 15% MAA on the ADNB concentration is also given (Fig 1), from which the linear dependence of the initial polymerization rate on the square

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II. The Change in Viscosity of the Reaction System During Bulk Polymerization of Methyl Methacrylate With Methacrylic Acid

S/153/59/002/06/025/029
B115/B000

root of the ADNB concentration may be seen. In additional figures (Figs 2 and 3), the dependence of the logarithm of viscosity on the conversion degree of MMA and its mixture with 15% MAA in the presence of various initiators is given. The change of the viscosity for a monomer-polymer mixture consisting of 85% MMA and 15% MAA in dependence on the conversion degree is also investigated for various concentrations of the initiator ADNB (Fig 4). From the table and the figures, it may be seen that the viscosity of the polymerization system corresponding to a defined conversion degree decreases with the increase in activity and the concentration of the initiator, respectively. The shapes of the curves logarithm of viscosity conversion degree of the polymerization system depend only little on the initiator used and its concentration. It was shown by an analysis of the curves of the change of the polymerization rate as well as of the curves of the change of viscosity of the reaction system (Ref 1) that the viscosity for MMA and its mixture with 15% of MAA corresponding to the gel effect is 100 to 500 P, and does not depend on the com-

II. The Change in Viscosity of the Reaction System During Bulk Polymerization of Methyl Methacrylate With Methacrylic Acid

position of the initiator and its concentration. The authors thank docent Ye.I.Fedotova for the ADNV put to their disposal for the experiments. There are 4 figures, 1 table, and 2 Soviet references.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet imeni N.I.Lobachevskogo, kafedra vysokomolekulyarnykh soyedineniy (Gor'kiy State University imeni N.I.Lobachevskiy, Chair of Macromolecular Compounds)

SUBMITTED: September 11, 1958

Card 3/3

GUZEYEV, V.V.; MOROZOV, V.I.; SHTARKMAN, B.P.; RYLOV, Ye.Ye.

Automatic instrument for the turbidimetric titration of polymer solutions. Vysokom.soed. 1 no.12:1840-1843 D '59.
(MIRA 13:5)

(Polymers)

ACCESSION NR: AP4040492 S/0190/64/006/006/1116/1119

AUTHORS: Malinskiy, Yu. M.; Guzeyev, V. V.; Zubov, Yu. A.; Kargin, V. A.

TITLE: Thermodynamics of the deformation of oriented fibers. 1. Temperature dependence of a caprone fiber

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 6, 1964, 1116-1119, and insert facing p. 1073

TOPIC TAGS: caprone fiber, reversible contraction, crystal pulling, shrinkage hysteresis, temperature dependence

ABSTRACT: The authors studied the temperature dependence (in the range 20 to 70C) of the length of polycaprolactam fiber samples, previously pulled to various degrees. The extent of reversible contraction on heating and lengthening on cooling depends upon the degree of the pulling and on the crystallinity. For fibers swollen in water the relation of temperature to change in fiber length is about four times that for air-dried specimens. The temperature dependence of the water content and desorption processes markedly affects this relationship. It is concluded that the phenomenon of reversible contraction during heating is due to the tendency of oriented macromolecules to increase the conformational assemblage,

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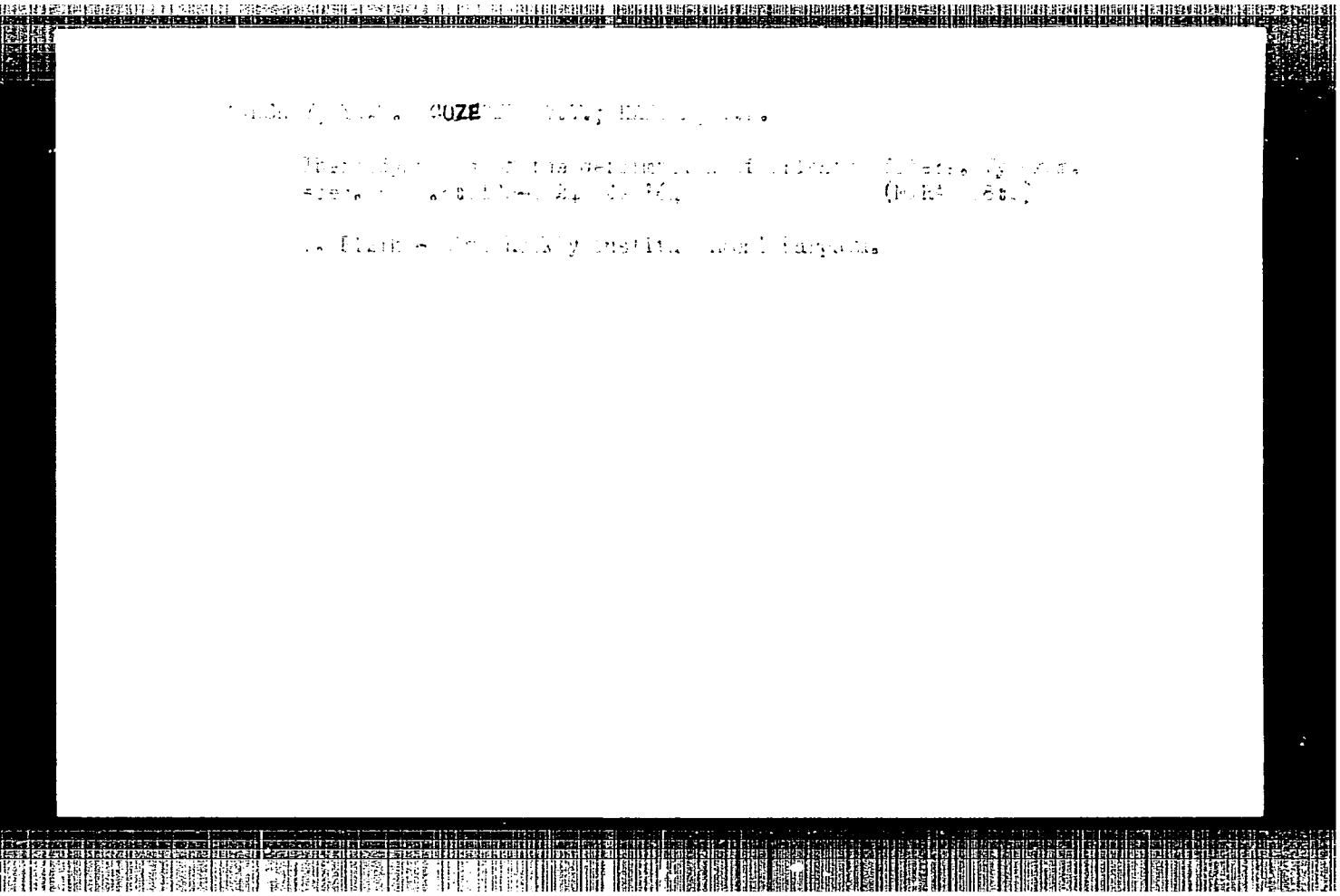

L 45410-65 EWP(j)/EWT(m)/T Pc-4 RM

ACCESSION NR: AP5011247 UR/0190/65/007/004/0633/0641

AUTHORS: Malinskiy, Yu. M.; Guzeyev, V. V.; Kargin, V. A.

TITLE: Deformation of polypropylene fiber

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 4, 1965, 638-641

TOPIC TAGS: polypropylene, fiber, temperature dependence, thermal expansion, heat treatment / Moplen polypropylene

ABSTRACT: In order to determine the correction for thermal linear expansion, the temperature dependence of the length of polypropylene fibers was studied. Two types of fibers were examined: some stretched to 7.6 times, some to 12 times their original lengths. The first were obtained from Moplen polypropylene. They were stretched in glycerin at 120C at a rate of 35 m/min. The fibers were washed from the glycerin by water at 50C. The second type of fibers was obtained from the first at 140C in nitrogen at a rate of 15% per minute. The fibers were heat-treated at constant lengths at 100C for 3 hours and were then set at 45C for 9-10 hours. The first type of specimen had a sp gr of 0.903, the second 0.906. The temperature dependence of length was then measured. Specimens of the first type had a coefficient of linear thermal expansion near zero,

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ACCESSION NR: AP5011247

and specimens of the second type showed a reversible contraction on heating. Results thus show that increase in stretching leads to increase in reversible contraction during heating. With increase in crystallinity, the amount of contraction declines. Fibers heat-treated for 3 hours contracted less than those treated for 1 hour. The entropy component in the recovery force proved to be less than 40%. The amount of this contribution and the sign are functions of the strain and the amount of stretching. This fact indicates that antibonding and disordering are important factors during deformation of oriented crystalline polymers. "The authors express their sincere thanks to V. S. Klimenkov for kindly furnishing the specimens." Orig. art. has: 5 figures.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute)

SUBMITTED: 07Jun64 ENCL: 00 SUB CODE: OC, MT

NO REF SOV: 005 OTHER: 000

Card 2/2 mb

GUZEYEV, V.V.; MALINSKIY, Yu.M.

Accounting for the factor of anisotropy in the study of strain thermodynamics in oriented fibers. Vysokom. soed. 7 no.5:945-946 My '65. (MIRA 18:9)

MULIN, N.M., kand.tekhn.nauk; ARTEM'YEV, V.P., kand.tekhn.nauk;
BELOBROV, I.K., kand.tekhn.nauk; GUZEYEV, Ye.A., inzh.;
KRASOVSKAYA, G.M., inzh.; PETROVA, K.V., inzh.; FIGAROVSKIY, V.V., inzh.

Basis for calculating the deformations of reinforced concrete elements in the draft of the new standards. Bet. i zhel.-bet. 8 no.11:491-498 N '62. (MIRA 15:11)
(Precast concrete)

MULIN, N.M.; SOKOLOVSKIY, P.I.; GUZEYEV, Ye.A.; YAKOVLEVA, V.S.

Heat-treated rod steel for the reinforcements of prestressed concrete constructions. Standartizatsiia 29 no.1:29-33 Ja '65.
(MIRA 18:4)

GUZEYEV, Yu.M., subordinator.

Testing hearing by the conditioned reflex method. Vest. oto-rin. 16 no.1:68 Ja-F '54. (MLRA 7:3)

1. Iz kliniki bolezney ukha, gorla i nosa (ispolnyayushchiy obyazannost' direktora - dotsent R.A.Barilyak) Stanislavskogo meditsinskogo instituta. (Conditioned response) (Hearing)

GUZEYEV, Yu.M. (Yalta)

Treatment of tuberculosis of the bronchi and lungs by inhalations of aerosols of garlic juice. Zhur. ush., nos. i gorl. bol. 20 no.5:21-26 S-O '60. (MIRA 14:6)

1. Iz otdeleniya legochnogo tuberkuleza (zav. - kand.med.nauk V.K. Dargevich) Yaltinskogo nauchno-issledovatel'skogo instituta klimatologii i klimatoterapii imeni I.M.Sechenova.
(TUBERCULOSIS) (AEROSOLS)
(GARLIC--THERAPEUTIC USE)

GUZEYEV, Yu.M.

Organization of research in sanatoriums on the southern coast of the Crimea. Vop. kur., fizioter. i lech. fiz. kul't. 25 no. 6:545-546 N-D '60. (MIRA 14:2)

1. Iz organizatsionno-metodicheskogo otdela (zav. - kand.med.nauk S.P. Shuvalov) Instituta meditsinskoy klimatologii i fizicheskikh metodov lecheniya imeni I.M. Sechenova (dir. - prof. S.R. Tatevosov).
(CRIMEA--SANATORIUMS)

GUZEYEV, Yu.M., nauchnyy sotrudnik

New design in a bronchoaspirator and the method of its use. (MIRA 15:1)
Vest.otorin. no.6:87-88 '61.

1. Iz kliniki legochnogo tuberkuleza (zav. - kand. med.nauk V.K. Dargevich) Ukrainskogo nauchno-issledovatel'skogo instituta meditsinskoy klimatologii i klimatoterapii imeni I.M. Sechenova, Yalta.

(BRONCHOSCOPY--EQUIPMENT AND SUPPLIES)

GUZEYEV, Yu.M., kand.med.nauk

Simultaneous bronchoscopy and bronchography under local anesthesia in pulmonary tuberculosis. Probl. tub. no.8: 105-106'62. (MIRA 16:9)

1. Iz kliniki legochnogo tuberkuleza (zav. V.K.Dargevich) Yaltinskogo mauchno-issledovatel'skogo instituta meditsinskoy klimatologii i klimatoterapii imeni I.M.Sechenova (d'r. B.V. Bogutskiy).

GUZEYEV, Yu.M.

Course of the portoperative period following pulmonary resection in tuberculosis depending on the condition of the bronchial tree before the operation. Probl. tub. 40 no.6:52-55 '62 (MIRA 16:12)

1. Iz khirurgicheskoy kliniki (zav. - prof. A.G. Gil'man) kliniki legochnogo tuberkuleza (zav. - kand. med. nauk V.K. Dargevich) i patologoanatomicheskogo otdeleniya (zav. - kand. med. nauk A.A.Smirnov) Yaltinskogo nauchno-issledovatel'skogo instituta meditsinskoy klimatologii i klimatoterapii imeni I.M.Sechenova (dir. B.V. Bogutskiy).

GUZEYEV, Yu.M., kand.med.nauk

Role of climatic factors in compound treatment of patients suffering from bronchial and pulmonary tuberculosis. Vrach. delo no.3:136-138 Mr '63. (MIRA 16:4)

1. Klinika legochnogo tuberkuleza (zav. - kand.med.nauk V.K. Dargevich) Yaltinskogo nauchno-issledovatel'skogo instituta meditsinskoy klimatologii i klimatoterapii imeni I.M.Sechenova.
(TUBERCULOSIS) (CLIMATOLOGY, MEDICAL)

GUZEYEV, Yu.M., kand.med.nauk

Methodology of anesthesia in tracheobronchoscopy. Zhur.ush. nos. i gorl. bol. 23 no.2:76 Mr-Ap'63. (MIRA 16:8)

1. Iz Yaltinskogo nauchno-issledovatel'skogo instituta meditsinskoy klimatologii i klimatoterapii imeni I.M.Sechenova (direktor - B.V.Bogutskiy).
(INTRATRACHEAL ANESTHESIA) (BRONCHOSCOPY)

GUZEYEV, Yu.M., kand. med. nauk

Effectiveness of different methods of endobronchial therapy in the complex treatment of patients with bronchial and pulmonary tuberculosis. Probl. tub. 42 no.1:34-39 '64.
(MIRA 17:8)

1. Klinika legochnogo tuberkuleza (zav. -- kand. med. nauk V.K. Dargevich) Nauchno-issledovatel'skogo instituta meditsinskoy klimatologii i klimatoterapii imeni Sechenova (dir. B.V. Bogutskiy), Yalta.

GUZEYEV, V.V.

Hypertrophy of the thymus gland. Pediatriia no.7:54-58 '61.
(MIRA 14:9)

1. Iz kliniki propedevtiki detskikh bolezney (zav.kafedroy - prof. A.M. Kropachev) Saratovskogo meditsinskogo instituta (dir. - dotsent N.R. Ivanov).
(THYMUS GLAND--DISEASES)

GUZEYEV, V.V.; MALINSKIY, Yu.M.

Apparatus for measuring stress relaxation of fibers. Zav.lab. 29 no.11:1373-1374 '63. (MIRA 16:12)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.

PETROV, Ye.D., kand.med.nauk; GUZEYEVA, I.S.; RYAZANTSEVA, N.F.; KHOROSHYN, G.M.

Treatment of pneumopleuritis in pulmonary tuberculosis on the Crimean southern shore [with summary in French]. Probl.tub. 37 no.1:84-87 '59. (MIRA 12:2)

1. Iz klimatoterapevticheskoy kliniki (zav. - kand.med.nauk Ye.D. Petrov) Instituta klimatoterapii tuberkuleza imeni I.M. Sechenova (dir. - prof. S.R. Tatevosov).

(TUBERCULOSIS, PULMONARY, compl.
pneumopleurisy, climatother. (Rus))
(CLIMATE,
climatother. of pneumopleurisy in tuberc. (Rus))

GUZEYEVA, I.S.

Treatment of abdominal tuberculosis at the southern shores of the Crimea. Vrach. delo no.4:48-51 Ap'63. (MIRA 16:7)

1. Klinika legochnogo tuberkuleza (zav.-kand.med.nauk Ye.K. Dargevich) Ukrainskogo nauchno-issledovatel'skogo instituta meditsinskoy klimatologii i klimatoterapii imeni I.N.Sechenova, Yalta.

(ABDOMEN--TUBERCULOSIS)
(CRIMEA--HEALTH RESORTS, WATERING PLACES, ETC.)

GUZEYEVA, V.A.

Cytological characteristics of punctates of the liver in brucellosis. Zdrav. kazakh. 21 no.12:20-23 '61. (MIRA 15:3)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - prof. M.A. Brener) Kazakhskogo meditsinskogo instituta i iz brutselleznogo otdeleniya I gorodskoy klinicheskoy bol'nitsy (konsul'tant - prof. N.D. Beklemishev).
(BRUCELLOSIS)
(LIVER--DISEASES)

GUZEYEVA, V.A.

State of blood proteins in brucellosis. Zdrav. Kazakh. 22 no.10: 40-44 '62. (MIRA 17:5)

1. Iz kafedry propedevitiki vnutrennikh bolezney (zav. - prof. M.A. Brener) Kazakhskogo meditsinskogo instituta i brutselleznogo otdeleniya I gorodskoy klinicheskoy bol'nitsy Alma-Ata (konsul'tant prof. N.D. Beklemishev).

GUZGANU, C.

"Income for poultry breeding."

p. 17 (Drumul Belsugului) No. 6, June 1957
Bucharest, Rumania

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

AUTHOR: Bakayev, [illegible]

TITLE: Optimal reception of FM signals under conditions of the Doppler effect

SOURCE: Radiotekhnika i elektronika, v. 10, no. 1, 1965, 171-175

TOPIC TAGS: FM signal, radio reception, Doppler effect

ABSTRACT: The importance of the Doppler effect in FM reception is noted; this effect may bring about a spurious FM. The structure of an optimal FM receiver is synthesized on the basis of a set of equations describing the useful FM and frequency fluctuations due to the relative motion of the stations. As the system optimality is lost outside the synchronization band, the synchronizing ability of the synthesized optimal system is investigated; this is done by the method of periodization of the system V-function. It is also demonstrated that a simple AGC system will be sufficient for the optimal FM receiver. Orig. art. has:

Card 1/2

L [illegible]
ACCESSION NR: AP5002911

1 figure and 30 formulas.

ASSOCIATION: none

SUBMITTED: 10Feb64 ENCL: 00 SUB CODE: EC

NO REF SOV: 004 OTHER: 000

Card 2/3

GRIGAGINA, I.I., Cand Med Sci -- (diss) "[illegible] for Treatment [illegible] of traumatic obstruction and obliteration of the urethra." Orenburg, 1958. 14 pp (Orenburg State Med Inst), 150 copies (KL, 46-58, 114)

GUZHAGINA, I.N.

Late results of treating traumatic stricture and obliteration of the male urethra. Urologiia 23 no.3:19-20 My-Je '58 (MIRA 11:6)

1. Iz kafedry fakyl'tetskoy khirurgii (zav. - prof. B.F. Kolosovskaya) Sverdlovskogo meditsinskogo instituta.
(URETHRA, stenosis
traum., remote results of plastic surg. in male (Rus))

GUZHAGINA, I.N.

Congenital valves of the urethra. Urologiia 24 no.6:38-40 '59.
(MIRA 13:12)

(URETHRA--ABNORMITIES AND DEFORMITIES)

GUZHALOVSKIY, A.A.

Influence of active games and physical exercise on the physical development of the younger students in a boarding school. Pediatriia no.7:26-26-29 '62. (MIRA 15:12)

1. Iz sektora fizicheskogo vospitaniya detey i molodezhi TSentral'nogo nauchno-issledovatel'skogo instituta fizicheskoy kultury.
(CHILDREN—GROWTH) (PHYSICAL EDUCATION AND TRAINING)

KARPUKHIN, Dmitriy Nikolayevich; BORISOVSKAYA, M.A., red.; GUZHANOVA, T.N., mladshiy red.; GERASIMOVA, Ye.S., tekhn. red.

[Correspondence between the increase in labor productivity and wages; based on materials on industry in the U.S.S.R.] Sootnoshenie rosta proizvoditel'nosti truda i zarabotnoi platy; na materialakh promyshlennosti SSSR. Moskva, Ekonomuzdat, 1963. 173 p. (MIRA 16:5)
(Wages and labor productivity)

KORNIYENKO, Vasiliy Petrovich; BORISOVSKAYA, M.A., red.; GUZHANOVA, T.N., mladshiy red.; PONOMAREVA, A.A., tekhn. red.

[Communal division of labor during the period of the transition to communism]Obshchestvennoe razdelenie truda v period perekhoda k kommunizmu. Moskva, Ekonomizdat, 1963. 260 p. (MIRA 16:3)
(Division of labor)

BUDARAGIN, Vladimir Vasil'yevich; DIKHTYAR, G.A., doktor ekon. nauk, otv. red.; GUZHANOVA, T.N., red.; PONOMAREVA, A.A., tekhn. red

[Economic relations between trade and industry] Ekonomicheskie sviazi torgovli s promyshlennost'iu. Moskva, Ekonomizdat, 1963. 204 p. (MIRA 16:7)
(Russia--Commerce) (Supply and demand)

SIGOV, Ivglaf Ivanovich; BORISOVSKAYA, M.A., red.; GUZHANOVA, T.N., mlad. red.; PONOMAREVA, A.A., tekhn. red.

[Division of labor in agriculture during the transition to communism] Razdelenie truda v sel'skom khoziaistve pri perekhode k kommunizmu. Moskva, Ekonomizdat, 1963. 262 p. (MIRA 16:10)

(Agriculture) (Division of labor)

MENDEL'SON, Abram Solomonovich, prof., doktor ekon. nauk;
DEMENT'YEV, V.A., red.; G'ZHANOVA, T.N., mlad. red.;
PONOMAREVA, A.A., tekhn. red.

[Value and price; a theoretical study] Stoimost' i tsena; teoreticheskii ocherk. Moskva, Ekonomizdat, 1963. 118 p.
(MIRA 16:10)

(Value) (Prices)

KIRSANOV, Aleksey Vasil'yevich; DEMENT'YEV, V.A., red.; GUZHANOVA, T.N., mladshiy red.; GERASIMOVA, Ye.S., tekhn.red.

[True face of the "American way of life"] "Amerikanskii obraz zhizni" bez prikras. Moskva, Ekonomizdat, 1963. 143 p. (MIRA 16:10)

(United States--Economic conditions)
(United States--Social conditions)

PEKELIS, Grigoriy Borisovich; GUZHAVIN, G.I., red.; VOROPAYEV, D.I.,tekhn.red.

[Power engineering in White Russia during the sixth five-year plan] Energetika Belorusskoi SSR v shestoi piatiletke. Minsk, 1956. 33 p. (Obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii Belorusskoi SSR, no.22) (MIRA 10:12)
(White Russia--Electric power plants)

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S/072/60/000/012/002/008
B021/B058

15.2120 1136 1155

AUTHORS: Dubrovskiy, V. A., Guzhavin, O. V.

TITLE: The Influence of the Composition of Acid Baths on the Hardening of Sheet Glass

PERIODICAL: Steklo i keramika, 1960, No. 12, pp. 8 - 11

TEXT: Special investigations have been made regarding the rate of glass etching in mixtures of hydrofluoric acid and sulfuric acid. The experiments were conducted with glass from the Konstantinovskiy zavod "Avtosteklo" (Konstantinovka "Avtosteklo" Plant). The experimental results of the etching of vertically drawn glass within 15 min are shown in Fig.1. The rate of etching not only depends on the chemical composition of glass, but also on processes occurring in the acid baths. The influence of the composition and concentration of various acid baths on the strength of glass was established in experiments. The mechanical strength of glass in these and subsequent experiments was determined by symmetrical bending. The experimental results of glass etching in acid mixtures show that the glass durability depends to a high degree on the chemical

Card 1/2

ACCESSION NR: AP4031146 S/0056/64/046/004/1245/1256

AUTHORS: Guzhavin, V. M.; Kliger, G. K.; Kolganov, V. Z.; Lebedev, A. V.; Marish, K. S.; Prokoshkin, Yu. D.; Smolyankin, V. T.; Sokolov, A. P.; Soroko, L. M.; Ts'ui Wa-ch'uang

TITLE: Pion production in pp collisions at 650 MeV energy

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1245-1256

TOPIC TAGS: pion production, pion pion interaction, resonance scattering, Mandelstam representation, isotopic invariance

ABSTRACT: A liquid-hydrogen bubble chamber was used to investigate pion-nucleon correlations and the angle and energy distributions of pions produced by 650-MeV protons. The investigation was motivated by the few unanswered questions which the Mandelstam phenomenological resonance model (Proc. Roy. Soc. v. A244, 491, 1958) does not supply. Among these questions are the possibility that isospin is not con-

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ACCESSION NR: AP4031146

served and the role of the (3/2, 3/2) resonance in pion production. Four reactions are investigated

$$p + p \to p + p,$$
$$p + p \to d + \pi^+,$$
$$p + p \to p + n + \pi^+,$$
$$p + p \to p + p + \pi^0.$$

The results of the investigation indicate that the experimental angular distributions of neutral and charged pions are consistent with the assumption of isotopic invariance. The contributions of πN-subsystem states with isospin $T_{\pi N} = 1/2$ and 3/2 are measured and found to be 72 $\pm$ 3% in the latter case. The cross sections, the angular distributions, and energy spectra of the particles were determined by methods free of the influence of systematic errors inherent in experiments using particle counters. In addition, angle and energy

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correlations were obtained in the three-particle processes (3) and (4); these characteristics could not be obtained by earlier procedures. The liquid-hydrogen bubble chamber makes it possible to carry out an exhaustive study of all pp scattering processes in a single experiment. It was confirmed that the cross section for pion pair production in this energy range is negligible. "In conclusion we thank the technicians and laboratory assistants for good operation of the liquid-hydrogen bubble chamber, the scanning group of ITEF headed by D. I. Tumanova, the scanning group of OIYaI who reduced the photographs, and also Ye. M. Landis and Ye. S. Gal'pern for setting up the program and performing the calculations on the electronic computer." Orig. art. has: 14 figures, 21 formulas, and 1 table.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki GKAE (Institute of Theoretical and Experimental Physics, GKAE); Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Institute of

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000617710019-9"

ACCESSION NR: AP4031146

Nuclear Research)

SUBMITTED: 14Nov63 DATE ACQ: 07May64 ENCL: 01

SUB CODE: GP, NP NR REF SOV: 013 OTHER: 003

Card 4/5

ENCLOSURE: 01

ACCESSION NR: AP4031146

Comparison of pion energy spectra

Number of cases

(interval) T_{π^+}, MeV, (интервал)	Число случаев $N(\cos^2\theta_{\pi^+}>1/3)$	Число случаев $N(\cos^2\theta_{\pi^+}<1/3)$	$\frac{N(\cos^2\theta_{\pi^+}<1/3)}{N(\cos^2\theta_{\pi^+}>1/3)}$
0—20	4	10	$1,8\pm0,5$
20—40	11	17	
40—60	18	34	$2,2\pm0,4$
60—80	13	33	
80—100	18	52	$1,9\pm0,3$
100—120	26	31	
120—140	28	41	$1,7\pm0,3$
140—160	11	27	
160—180	0	1	
0—180	129	246	$1,9\pm0,2$
Average energy — Средняя энергия, MeV	93 ± 5	90 ± 5	

Card 5/5

L 13945-65 EWT(m)/T/EWA(m)-2 AFWL/SSD/ASD(a)-5/ESD(dp)/ESD(t)
ACCESSION NR: AP4047888 S/0056/64/047/004/1228/1231

AUTHORS: Guzhavin, V. M.; Kliger, G. K.; Kolganov, V. Z.; Lebedev, A. V.; Marish, K. S.; Musin, M. A.; Prokoshkin, Yu. D.; Smolyankin, V. T.; Sokolov, A. P.; Soroko, L. M.; Ts'ui, Wa-ch'uang 19

TITLE: Elastic proton scattering at 650 MeV

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 4, 1964, 1228-1231

TOPIC TAGS: proton proton scattering, elastic scattering, angular dependence, scattering cross section, differential cross section

ABSTRACT: A total of 1767 events of elastic p-p scattering at 650 MeV was registered with the liquid-bubble chamber of the ITEF, placed in the beam of protons with energy 650 ± 5 MeV. The equipment and procedure were described by the authors elsewhere (ZhETF v. 46, 1245, 1964); the proton scattering angles were measured with

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L 13945-65
ACCESSION NR: AP4047888

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the LYaP reprojector (A. T. Vasilenko et al. PTE, No. 6, 34, 1957). A statistical comparison of the present data with earlier results is made. The angular dependence of the differential cross section, averaged over angle intervals of 3°, is deduced from the results and approximated by means of an empirical polynomial. "In conclusion we thank M. P. Baldin for help with the measurements on the reprojector and microscope, and L. I. Lapidus for a discussion of the results." Orig. art. has: 2 figures, 2 formulas, and 1 table.

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

SUBMITTED: 30Apr64 ENCL: 00

SUB CODE: NP NR REF SOV: 006 OTHER: 001

Card 2/2

guzhavin, v.v.; guzhavina, o.a.

"Comparison of the Fermi-Landau Theory With Some Experimental Data on Cosmic Rays," by O. A. Guzhavina, V. V. Guzhavin, and G. T. Zatsepin, Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR, Zhurnal Eksperimental'noy i Teoreticheskoy Fizika, Vol 31, No 5 (11), Nov 56, pp 819-830

The energy of secondary particles created in high energy nuclear collisions is computed on the basis of Landau's theory (Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 17, 51, 1953). The spectra thus obtained are used to compute the altitude dependence of "nuclear-active" particles in the atmosphere and also to determine the high energy μ-meson flux at sea level.

The results of the computation are compared with experimental data and it is concluded that "the theory of high energy nuclear collisions does not allow one to make quantitative determinations of cascade processes because of the indeterminate form of the energy spectrum close to the upper limit."

The opinion is advanced that a more precise formulation of the theory will not lead to any better agreement with experimental data, but that "new premises" are required.

SUM. 1287

AUTHOR GUZHAVIN, V.V., ZATSEPIN, G.T. PA - 2687

TITLE The Courses Taken by the Heights of the Broad Atmospheric Showers according to Different Models of the Elementary Act of Nuclear Collision. (Vysotnyy khod atmosfernykh livney soglasno raslychnym modelyan elementarnogo akta yadernykh stolknoveniy - Russian).

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 2, pp 365-366 (U.S.S.R.)

Received 5/1957 Reviewed 6/1957

ABSTRACT The development of the nuclear and the electron-photon components of the broad atmospheric showers in the atmosphere are computed for three different energies of the primary protons ($1o^{14}$, $1o^{16}$, $1o^{18}$ eV) with two varieties of the model of the nuclear collisions. In both varieties the free length of path of the nucleons and pions was assumed to be independent of energy and equal to 65 g/cm^3, which correponds to the geometric cross section of the nucleons of air atoms. The first variety describes the production of particles on the occasion of nuclear collisions at energies of the nucleons and pions exceeding $5.1o^{12}$ eV by means of the theory by LANDAU. Some other assumption are also made. In the second variety assumes a nucleon of any energy (also for $E > 5.1o^{12}$ eV) to lose only $3o^0/_0$ of its energy by the production of mesons at nuclear collisons to retain the remaining $7o^0/_0$. Furthermore, only π^{+-} +Mesons are to be produced on the occasion of collisions. Development of avalanches of nuclear particles was computed for both varieties by means of the method of successive deviations under consideration of the decay of π^{+-}-mesons.

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The Courses Taken by the Heights of the Broad Atmospheric Showers According to Different Models of the Elementary Act of Nuclear Collision. PA .. 2687

The electron-photon avalanches resulting from neutral pions were summarized graphically. The results of computations according to both varieties are shown together in a table. The experimental data determined from the height dependence of the number of showerd originating from protons with from $E \sim 10^{14}$ to 10^{16} eV., agree best with the assumption that on the occasion of nuclear collisions, the nucleon loses only 30% of its energy. The results obtained here are an important argument for the fact that the nucleon at $E > 5.10^{13}$ eV (at least up to $E \sim 10^{14}$ or 10^{15} eV) lose at the utmost 1/3 of its energy on the occasion of collisions with the nuclei of air atoms. In the case of extremely high energies ($E\ 10^{18}$eV), however, a considerable decrease of nucleon energy on the occasion of nuclear collisions must be assumed.
(1 table)

ASSOCIATION Physical Institut "P.N.LEBEDEV" of the Academy of Sciences on the USSR.
PRESENTED BY
SUBMITTED 20.7.1956
AVAILABLE Library of Congress
Card 2/2

PA - 3135

AUTHOR GUZHAVIN V.V., IVANENKO I.P.

TITLE On the Function of the Angular- And the Spatial Distribution of the Particles in the Maximum of a Cascade Shower.
(O funktsii uglovogo i prostranstvennogo raspredeleniye chastits v maksimume kaskadnogo livnya)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 3, pp 533-536 (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT According to the opinion of the authors the method of moments is well suited for the solution of the problem mentioned above. The authors here suggest a simple method for the computation of the functions from the known moments, as mentioned in the title. These functions depend upon $\bar{r}$ and $\bar{\theta}$ only in the combination $x_\theta = E\theta/E_s (x_r = E_r/E_s)$, where E_s amounts to 21MeV.

The differential function of the angular distribution $P(E_0, E, \theta, t) = P_{prod}(E_0, E, T_s) P(s, x_\theta)$ remains finite at $\theta = 0$.
The authors approximate the function $P(1, x_\theta)$ by a sum of polynomials $P(1, x_\theta) = e^{-\alpha x_\theta} \sum_{n=0}^{k/2-1} a_n V_n(\alpha x_\theta)$. The explicit expressions of the polynomials $V_n(\alpha x)$ as well as the polynomials $V_n(y)$ which are orthogonal to them are explicitly given. Also the expressions for the coefficients a_n are easily determined by the corresponding moments of the function of spatial distribution. The results of the computation of the function $P(1, x_\theta)$ are given in a table. The method of approximation of the function suggested here furnishes fairly accurate values even at $k = 4$. In addition, also an approxi-

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On the Functions of the Angular- And the Spatial Distribution of PA -3135
the Particles in the Maximum of a Cascade Shower.

mation formula for the integral function of the spatial distribution in the maximum of the shower is derived. Also here there is a sum of polynominals, and for the coefficients contained therein ixplicit expressions are given. The results of the computation of this integral function of the spatial distribution are shown together in a table. By means of this method the authors hope to be able, by taking account of the ionization losses, to determine the functions of the spatial distribution and the angular distribution. The corresponding computations are carried out.
(2 Tables)

ASSOCIATION Moscow State University
PRESENTED BY SKOBEL'TSYN D.V., Member of the Academy
SUBMITTED 24.11.1956
AVAILABLE Library of Congress
Card 2/2

GUZHAVIN, V.V.

20-6-10/48

AUTHORS: Guzhavin, V.V., Ivanenko, I.P.

TITLE: On the Function of the Spatial Distribution of Particles in an Electron-Photon Shower (O funktsii prostranstvennogo raspredeleniya chastits v elektronnofotonnom livne)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 115, Nr 6, pp. 1089 - 1092 (USSR)

ABSTRACT: In the preparatory paper (Doklady AN SSSR, 1957, Vol. 113, Nr 3) a method for the computation of the angular distribution and the spatial distribution of the electrons in the maximum of a cascade shower was suggested. The present paper develops a method for the computation of a more general class of functions from their known moments. The authors here investigate the function $\Phi(r, s)$ which is dependent on the parameter s and a few other parameters. This function is defined in the interval $0 \leqslant r < \infty$ where for r - 0 it is valid $\Phi(r,s) = (1/r^{2-s})$ $\varphi(r, s)$. Moreover it is valid $\varphi(r, s) = \text{const} \neq 0$; $0 < s \leqslant 2$. The moments of the function $\Phi(r, s)$ are defined by the formula $\overline{r^n_\Phi}(s) = \int_0^\infty \Phi(r, s) r^n dr / \int_0^\infty \Phi(r, s) r dr$ and they are assumed as known here. In all practically interesting cases it is

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On the Function of the Spatial Distribution of Particles in an Electron-Photon Shower

not succeeded in obtaining an explicit analytical expression for the moments. Usually only the numerical values of some of the first moments of the distribution function wanted is obtained. Therefore it is practically more advantageous when computing the function $\Phi(r, s)$ from the moments to approximate this function by a certain different function of which some first moments are identical with the exact moments of the function wanted. The authors approximate the function by the aid of the polynominals $R_n(\alpha r, s)$ as follows:

$\varphi(r, s) = e^{-\alpha r^{\beta}} \sum_{n=0}^{N} a_n(s) R_n(\alpha r, s)$. The coefficients $a_n(s)$ are determined from an orthogonality-condition for these polynominals. The coefficients $a_n(s)$ are expressed by the moments. From this easily follow the conditions for the determination of the polynominals.

In the authors' opinion this approximation method is suitable for many problems. The present paper applies this method for the computation of the functions of the spatial distribution of the particles in an electron-photon shower. The expressions for the polynominals and for the coefficients are given expli-

On the Function of the Spatial Distribution of Particles in an Electron-Photon Shower

citly. The formulae here deduced also provide useful results, if for example only the first two results are used. There are 1 table and 8 references, 4 of which are Slavic.

ASSOCIATION : Moscow State University imeni M.V. Lomonosov (Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova)

PRESENTED: April 9, 1957, by D.V. Skobel'tsyn, Academician

SUBMITTED: April 2, 1957

AVAILABLE: Library of Congress

SOV/56-34-3-33/55

AUTHORS: Guzhavin, V. V., Ivanenko, I. P.

TITLE: On the Function of the Spatial Distribution of Photons in the Maximum of a Cascade Shower (O funktsii prostranstvennogo raspredelaniya fotonov v maksimume kaskadnogo livnya)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr 3, pp. 746 - 747 (USSR)

ABSTRACT: The authors computed the function of the spatial distribution of photons by the method of momenta. The fact that the function of the spatial distribution of the photons $N_\Gamma(x_r)$ with an energy greater than E with $x_r \longrightarrow 0$, is proportional to $(\ln x_r)/x_r$, is taken into consideration here. Here holds: $x_r = Er/E_s^r$ with $E_s = 21$ MeV. The authors approximate the function $x_r N_\Gamma(x_r)$ by means of the following sum of polynomials: $x_r N_\Gamma(x_r = Ei(-\alpha\sqrt{x_r}) \sum_{n=o}^{N} \alpha_n R_n(\alpha x_r)$.

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On the Function of the Spatial Distribution of Photons in the Maximum of a Cascade Shower

In this case, $R_n(\alpha x_r)$ denote the orthogonal polynomials in the interval $(0, \infty)$ with the function of weight $Ei(-\alpha\sqrt{x_r})$. Conditions for the calculation of these polynomials are given. Also the explicit analytical terms for some of such polynomials R_n are written down. Formulae for the coefficients occurring in these terms are given. The results of the computation of the function of spatial distribution of photons are illustrated in a diagram and compared with the results obtained by G. Moliere (Reference 2). The corresponding curves do not differ by more than 20 % up to approximately $x_r \sim 0.1$. With $x_r \sim 1$, these curves differ by approximately the double from each other, but here the curve of Moliere is already unreliable. The functions of spatial distribution of the photons calculated here (which take into account the first 3 momenta) do not differ by more than 10 % from the accurate curve. The first diagram also contains the function of spatial distribution of the electrons. Even with $x_r = 10^{-4}$, the function of photon is 3 times greater than the electron function. There are 2 figures and 3 references, 1 of which is Soviet.

SOV/56-34-3-33/55

On the Function of the Spatial Distribution of Photons in the Maximum of a Cascade Shower

ASSOCIATION: Moskovskiy gosudarstvennyy universitet
(Moscow State University)

SUBMITTED: November 6, 1957

Card 3/3

GUZHAVIN, V.V.

"CONCERNING THE TRIDIMENSIONAL ELECTRON-PHOTON AVALANCHE DEVELOPMENT"
V. V. Guzhavin, I.P. Ivanenko

The effect of the energy E_0 of the primary particle causing an avalanche, upon the form of the angular and spatial particle distribution function at small values of the argument has been considered. An approximate method of calculating these functions is proposed and the angular and spatial distribution functions are presented for different values of the parameter S, from 0.4 to 1.6, and the ratios E./E, from 10 to 10^6. In a number of specific cases, a detailed study is made of the behavior of distribution functions close to 0, with a finite value for E_0.

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

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AUTHORS: Guzhavin, V. V., Ivanenko, I. P. SOV/56-36-5-32/76

TITLE: On the Dependence of the Mean Angle of Scattering of Particles on Their Distance From the Shower (O zavisimosti srednego ugla razleta chastits ot ikh rasstoyaniya do osi v kaskadnom livne)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki 1959, Vol 36, Nr 5, pp 1509-1512 (USSR)

ABSTRACT: The problem of the theoretical treatment of spatial cascade showers has hitherto not been solved. In the three-dimensional cascade theory of showers either a spatial particle distribution function is generally used with integration with respect to the angle variable or one uses an angular distribution function and integrates over the surface which is perpendicular to the shower axis. In connection with investigations of high-energy photon showers in photoemulsions as well as with detailed investigations of the soft component in the core of an extensive air shower, knowledge of the complete solid angle distribution function of particles appears to be of importance. This is a very complicated mathematical problem, which can be approached for the time being

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On the Dependence of the Mean Angle of Scattering of Particles on Their Distance From the Shower SOV/56-36-5-32/76

only by means of methods of approximation (momentum method, numerical computation by means of an electronic computer). The authors make a contribution towards dealing with this problem by calculating the average angle $\bar{\theta}_x(E,x)$ formed by the particles with the energy E with the shower axis at a distance x from the latter. Scattering is considered to be multiple and calculated in Landau's approximation (Ref 2). Further, approximation is confined to small angles (i.e. cos $\theta \to 1$, sin $\theta \to \theta$), and ionization losses are neglected. The results obtained by theoretical investigation are compared with the results obtained by measurements carried out by N. L. Grigorov and M. A. Kondrat'yeva. Agreement (see table) is good if it is taken into account that the $\bar{\theta}$ - values were measured whereas the projections $\bar{\theta}_x$ were calculated, that $\theta_{x\,exp} = \theta_{exp}/1.6$ holds, and that, besides, errors of measurement amounted to 20 - 30%. There are 1 figure, 1 table, and 5 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

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GUZHAVIN, V.V.; IVANENKO, I.P.

Effect of the initiating particle on the three dimensional development of a cascade shower. Zhur.eksp.i teor.fiz. 38 no.2:662-664 F '60. (MIRA 14:5)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.
(Cosmic rays) (Particles (Nuclear physics))

25191
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24.6700

AUTHORS: Guzhavin, V. V., Ivanenko, I. P.

TITLE: Angular distribution function of particles in a shower released by a primary particle of a given energy

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 6, 1961, 1682-1694

TEXT: The authors wanted to derive exact expressions for the angular distribution function in a number of special cases. The basic equations of cascade theory read, for small angular deviations,

$$\begin{aligned} \partial P(E_0, E, t, \vartheta)/\partial t &= L_1 [P(E_0, E, t, \vartheta), \\ \Gamma(E_0, E, t, \vartheta)] &+ (E_k^2/4E^2)\,\Delta_\vartheta P(E_0, E, t, \vartheta), \\ \partial\Gamma(E_0, E, t, \vartheta)/\partial t &= L_2 [P(E_0, E, t, \vartheta); \Gamma(E_0, E, t, \vartheta)]. \end{aligned} \quad (1),$$

where $P(E_0, E, t, \vartheta)$ and $\Gamma(E_0, E, t, \vartheta)$ are the desired distribution functions for electrons and photons, t is the penetration depth, L_1 and L_2 are

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integral operators which take account of bremsstrahlung and pair formation, $E_k=E_s(L_{pair\,form}/L_{bremsstr})^{1/2}$, $E_s=21$ Mev. The boundary conditions for a primary, perpendicularly incident electron or photon read

$$P(E_0, E, 0, 0) = \delta(E_0 - E)\,\delta(0), \quad \Gamma(E_0, E, 0, 0) = 0 \qquad (1a)$$

and

$$P(E_0, E, 0, 0) = 0, \quad \Gamma(E_0, E, 0, 0) = \delta(E_0 - E)\,\delta(0) \qquad (1b)$$

respectively. By way of numerous integral transformations, transformations and substitutions, the distribution function of particles on the incidence of an electron is finally obtained. When neglecting the dependence of s on θ, the result of S. Z. Belen'kiy (Lavinnyye protsessy v kosmicheskikh luchakh, Gostekhizdat, 1948 (Shower processes in cosmic radiation). S. Z. Belen'kiy, I. P. Ivanenko, UFN, 69, 591, 1959) is obtained. The authors also calculated $N_p(E_0,E,t,\theta)^P$ and $P(E_0,E,t,\theta)^P$ taking account of the dependence of s on θ. The formulas are rather complicated, and are specialized for $z \ll 1$ and $z \gg 1$. The difference between the general and the two special formulas is estimated, and it is stated that the effect of a finite E_0 on the form of the distribution function is fairly important.

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namely, the more important, the smaller E_0/E and z are. For the distribution function in case of an incident photon,

$$(N_\Gamma(E_0, E, t, 0))^p = (N_\Gamma(E_0, E, t, 0))^p \frac{sF_1(s, z)}{2\pi 0^{s2^{(s-2)/2}}\Gamma(s/2)}, \quad (8)$$

is derived with (II).

$$F_1(s, z) = z^s \int_z^\infty dz' z'^{-s/2} K_{(2-s)/2}(z').$$

The angular distribution function of electrons normalized to unity and integrated over the energy is found to coincide with the angular distribution function of photons differentiated with respect to E. In addition, formulas are given for the distribution functions of particles in a shower released by a photon, generally at first, and then specialized for $z \gg 1$ and $z \ll 1$. Likewise, the distribution function of photons in a shower released by a photon is given. It is further stated that the distribution functions of electrons normalized to unity do not depend upon the nature of incident particles. As regards photons, this state-

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ment is correct for absorber depths $t>1$ only. In the second part of the paper, the distribution functions of particles are given for the case of electrons and photons along the total shower path being produced by a penetrating radiation of a nonelectromagnetic origin. In the first case $S_p(E_0,E,t,\theta)=0$, $S_\Gamma(E_0,E,t,\vartheta)=\delta(E_0-E)\delta(\theta)e^{-\mu t}$ is put, where S_p and S_Γ denote the number of produced electrons and photons with an energy E, at the depth t, and under a given angle θ. As in the previous solution methods, general and special formulas are given here as well, both taking account of and disregarding the angular dependence of s. In the second case, where $S_p(E_0,E,t,\vartheta)=\delta(E_0-E)\delta(\theta)e^{-\mu t}$ and $S_\Gamma(E_0,E,t,\theta)=0$, the same calculations are performed, and it is pointed out that the energy spectrum differs from that of an ordinary shower considerably. This difference is well observable for $\theta\leq 1$. L. D. Landau is mentioned. There are 3 figures, 1 table, and 11 references: 3 Soviet-bloc and 8 non-Soviet-bloc.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University)

38882
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AUTHOR: Guzhavin, V. V.

TITLE: Angular distribution function of the total particle number near the axis of a cascade shower

PERIODICAL: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 3, 1962, 63-65

TEXT: An analytic expression is given for the angular distribution of particles with $E > 0$, i.e., taking account of the ionization losses. The author deals with particles near the axis only, i.e. $\frac{\beta\theta}{E_s} \ll 1$, where β is the critical energy of the given substance, θ is the angle between particle trajectory and shower axis, E_s = 21 Mev.

For $N_p(E_0, E, t, \theta)$, the angular distribution of the electrons with an energy higher than E, at an angle θ to the axis, in a depth t of a shower released by an electron (energy E_0)

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AUTHOR: Guzhavin, V. V.

TITLE: The angular distribution function of cascade shower particles in small-angle approximation

PERIODICAL: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 4, 1962, 60 - 64

TEXT: The angular distribution of shower particles at an arbitrary instant of shower expansion is calculated. The electron and photon distribution functions are dealt with individually although their structure is similar. Plain and multiple scattering is taken into account. The electron differential angular distribution function (normalized to unity) is then

$$\{F^1{}_p(s, z)\}^p = \frac{z^{s/2}K_{s/2}(z)}{2^{s/2}\Gamma(1+s/2)} + \frac{(s+2)z^s}{\Omega}\left\{\int_0^\infty \frac{J_0(x)x^3 \ln x dx}{(z^2+x^2)^{(s+4)/2}} + \right. \quad (8)$$

$$\left. + \frac{\ln z}{(2z)^{s/2}\Gamma(2+s/2)}\left[\frac{z}{2}K_{(2-s)/2}(z) - K_{s/2}(z)\right]\right\} + \ldots$$

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where $z = E\Theta/P$, $P = K/2\sqrt{f(\lambda_1)}$, Θ - angle of deviation from shower axis, K and Ω - quantities dependent on the atomic number of the medium, $f(\lambda_1)$ - a known cascade function (S. Z. Belen'kiy, Lavinnyye protsessy v kosmicheskikh luchakh. - Avalanche processes in cosmic rays - Gostekhizdat, 1948), $J_0(x)$ - zero order Bessel function, $K_\nu(z)$ - modified second kind Bessel functions of ν-th order. Graphs were drawn for various values of the parameter s. With allowance for scattering, the angular distribution functions deviate from the usual ones. There are 3 figures.

ASSOCIATION: NIIYaF

SUBMITTED: December 11, 1961

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GUZHAVIN, V.V.; IVANENKO, I.P.

Effect of the nature of a primary particle of an electron-photon cascade shower on the form of the angular and spatial distribution functions. Vest. Mosk. un. Ser. 3:Fiz., astron. 18 no.5:3-7 S-O '63. (MIRA 16:10)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

GUZHAVIN, V.V., IVANENKO, I.P.

Use of the method of moments in solving a three-dimensional angular problem in electromagnetic cascade theory. Izv. AN SSSR. Ser. fiz. 28 no.11:1841-1846 N '64. (MIRA 17:12)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.