

KRESTINSKAYA, V. N.

"The Mechanism of the Adsorption of Silver Sulphate on Sols of Silicia and Acid of Aluminium Hydroxide." Krestinskaya, V. N., and Hakimov, Z. V. (p. 129)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1944, Volume 14, no. 3.

KRESTINSKAYA, V. N. i SHATEMIROV, K. SH.

42429. Peptiziruyushcheye deistviye kislot shchelochey i soley na kolloidy karbonatinikh pochv kirgizii. Trudi Khim in-Ta. (Kirgiz Filial Akad. Nauk SSSR.) Vyp. 2, 1947 (izd: 1948) S. 3-16--Pibliogr: 19 Nazv.

KRESTINSKAYA, V.N.

42080. KRESTINSKAYA, V.N., BELOVA, O.I.-Adsorbtsiya ionov svintsa i tsinka na zolyakh gidratopektina i pektinovoy kisloty. Trudy khim. in-ta (Kirgiz, filial Akad. nauk SSSR), vyp. 2, 1947 (izd: 1948), s. 29-35.-Bibliogr: 10 nazv.

So: Setopis' Zhurnal'nykh Statey, Vol. 47, 1948

KRESTINSKAYA, V.N.; BELOVA, O.I.

Hydrophobization of pectin substances of sugar beet. Izvest. Kirgiz. Filial.
Akad. Nauk S.S.S.R. '47, No.7, 139-46. (MLRA 5:10)
(CA 47 no.22:12472 '53)

Change in the stability of a sulfur sol as influenced by the pH of the medium. I. V. N. Kretschkova and N. S. Muratova (Kirghis Pedagogical Inst., Russia), *Kolloid. Zhur.* 9, No. 1, 43-52 (1947).—The purpose of this investigation was to elucidate the difference between hydrophilic and hydrophobic colloids and the transformation of one into the other (cf. C. A. 33, 7709⁹). The sol studied was S in H₂O. It was obtained by the action of H₂SO₄ on Na₂S₂O₈ with ice cooling. The mixt. was held for 20-25 min. and then the S was pptd. with a satd. NaCl soln. The pptd. S was peptized with distd. H₂O, the suspension was neutralized to litmus with NaHCO₃, filtered, and dialyzed. The dialysis was carried out over 6-7 days; the H₂O was changed frequently until free of polythionates and NO₃⁻. The sols were transparent, had a pH near 7, and their concn. was around 1 g. per l. They were relatively stable but aged, sep. out S and becoming more acid. It was therefore necessary to make the detns. as soon after prepn. of the sols as possible. For each sol was detd. the quantity of KBr needed to coagulate the sol. Then the pH of the sol was changed by adding HCl and the new quantity of KBr needed for coagulation was detd. The effect of KOH in concns. of 0.001-0.06 N on sols was tested. They all caused cloudiness. The strongest effect was exerted by 0.01 N KOH. HCl coagulated the S sol, the rate of coagulation increasing with the concn. of HCl. In the presence of HCl, coagulation of the sols with KBr was complex. At small concns. HCl not only restored the original resistance of the sols to KBr but raised it markedly. After it had reached a

max., further addns. of HCl caused a decline in the stability of the sol. The stabilizing effect of HCl is attributed to the transformation of Na₂S₂O₈ which acts as stabilizer of the S sol, into H₂S₂O₈. The latter is less dissoct. than the salt, and its molcs. impart hydrophilic properties to the micelles. Further addns. of HCl depress the dissoct. of H₂S₂O₈ still more and thereby enhance the hydrophilic properties of the sol and at the same time its stability. When the dissoct. of H₂S₂O₈ is completely depressed, the sol has changed from a hydrophobic to a hydrophilic colloid and attains its max. stability. HCl added beyond this point acts as coagulant. The pH values of filtrates from pptg. the sol with KBr in the presence of various quantities of HCl were detd. In order to test whether HCl reacts with polythionates on the micelles. The measurements did not bear out this contention. Cataphoretic measurements showed that HCl and LiBr are capable of neutralizing the ζ-potential of a S sol and thereby stopping the migration of the particles toward the anode. Polythionic acid and polythionates acting as stabilizers for S colloids do not dissoct. and orient H₂O molcs. uniformly with their neg. poles toward the micelle. In a hydrophobic state of the sol, H₂O molcs. are grouped around the ions of the stabilizer and also around the oppositely charged H₂O molcs. around the micelles.

M. Iliev

2

ADR-51A METALLURGICAL LITERATURE CLASSIFICATION

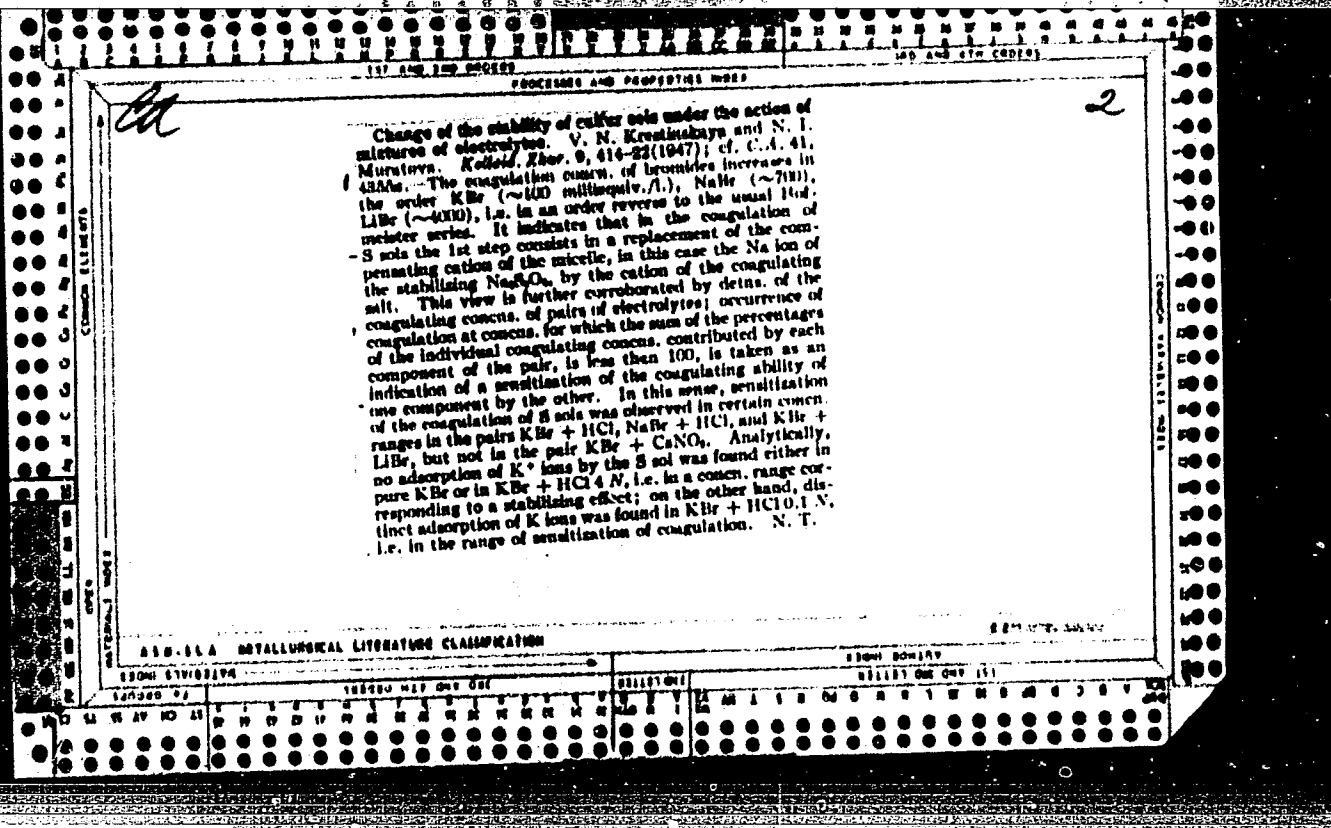
SEARCH DIVISION

SEARCHED INDEXED

SERIALIZED

FILED

APR 1948



KRESTINSKAYA, V.N.

42081. KPESTINSKAYA, V.N., KONDRAR, F.A.-Issledovaniye kolloidnykh rastvorov vol'framovoy kisloty v sistem: vol'framat natriyarodanid ammoniya-sernaya kislota. Trudy khim. in-ta (Kirgiz. filial Akad, nauk. SSSR), vyp. 2, 1948 (izd: 1948), s. 85-93. Bibliogr: 8 nazv.

So: Setopis' Zhurnal'nykh Statey, Vol. 47, 1948

CA

2

Adsorption of alkali metal and alkaline earth metal ions by a colloidal solution of sulfur during its coagulation. V. N. Kyratimbaya and N. G. Abdullina (Kirgiz Branch, Acad. Sci. U.S.S.R.). *Kolloid. Zhur.* 13, 280-97(1961).—Raffo soils were coagulated by salts, and the amt. α of the coagulating cation adsorbed by the ppt. was detd. The α of Ba^{++} was 56-64% of the amt. equiv. to the $\text{Na}_2\text{S}_2\text{O}_3$ stabilizing the sol; for Ca^{++} it was 55%, Mg^{++} 44%, Cs^+ 87%, Rb^+ 37%, K^+ 0%, Na^+ 0%, and Li^+ 26-30%. The coagulating concn. was about 0.01 g. equiv./l. for BaCl_2 and CaCl_2 , 0.20 for MgCl_2 , 0.075 for CsCl and RbNO_3 , 0.10 for KCl , 0.81 for NaCl , and 5.3 for LiCl . As the orders of the ions for α and for coagulation do not agree and as α is always much less than 100%, the exchange adsorption seems to have secondary importance in the coagulation of S sols. In acidified S sols, K^+ is strongly adsorbed during coagulation. J. J. B.

CA

11A

Removal of sericin from raw silk with solutions containing products of sericin hydrolysis. V. N. Krestinskaya and M. B. Almukhamedova. *Zhur. Priklad. Khim.* 24, 634-6 (1961); cf. *C.A.* 46, 4238c. — Sericin (I) is extd. from cocoon shreds with distd. H₂O, either by prolonged contact at room temp. or by boiling for 2-6 hrs. Such solns ext I from raw silk more effectively than H₂O. J. P. Danahy

CA

29

The role of amino acids in the solution which removes ceresine from raw silk. V. N. Krestinskaya and M. B. Almukhamedova. *Zhur. Priklad. Khim.* (J. Applied Chem. U.S.S.R.) 24, 1298-1303 (1951); cf. *ibid.* 634 - The dialyzed soln. from solns. contg. ceresine hydrolysis products is active in the removal of ceresine from silk. Hence a true soln. or very highly disperse state of the active material is responsible for the effect. Amino acids are not the active material since the most active solns. have the lowest amino acid content. Concn. of soln. increases activity and the content of polypeptides, but the amino acid content drops to nearly zero. On standing the activity drops and polypeptide concn. drops while that of amino acids rises; the same occurs on boiling. G. M. Kosolapoff

CA

11-A

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Chemical composition of the stabilizer of sericin. V.
N. Krestinskaya and M. B. Alinukhmedova. *Zhur.
Prklad. Khim. (J. Applied Chem.)* 25, 197 204(1952);
cf. *C.I.* 46, 7127b. The activity of solns. obtained by
dialysis of colloidal solns. of sericin (prepd. by boiling the
cucous in water) increases with increased content of poly-
peptides in such solns. The activity is detd. by the ability
of the solns. to remove sericin from fibers. The activity is
detd. to a great extent by the concn. of free amino acids, but
solns. that are rich in amino acids after dialysis are inactive
and the activity must be ascribed to the presence of rather
high-mol.-wt. peptides in highly dispersed state.
G. M. Kosolapoff

KREUTINSKIYA, V. N.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Biological Chemistry

②
Chemical composition of the stabilizer of sericin. V. N.
Kreutinskaya and M. B. Almkhamedova. *J. Appl.
Chem. U.S.S.R.* 25, 207-13(1952) (Engl. translation).—See
C.A. 46, 9638g.
H. J. II

Мандельштам, М. С.; Мандельштам, В. А.

"The Solubility of Argon in Liquid Oxygen", Zhur. Fiz. Khim. 16, nos. 3-4, 1942.

Moscow, All-Union Electrical Engineering Institute. Received 24 April 1941.

FBI Report 7-1423, 24 Oct. 1951.

KRESTINSKIY, Yu. A.

USSR/ Scientists - Commemoration

Card 1/1 Pub. 124 - 34/39

Authors : Krestinskiy, Yu. A.

Title : Ten years since the death of A. N. Tolstoi

Periodical : Vest. AN SSSR 25/5, 98 - 99, May 1955

Abstract : An account is given of a special session held by the A. M. Gorky Institute of World Literature of the Academy of Science on February 18th. The session commemorated the 10th anniversary since the death of A. N. Tolstoi, Soviet writer and academician. Papers were read recalling his life history.

Institution :

Submitted :

KRESTMEYN, G.Ye. (Moskva)

Two fatal complications in a woman treated with cortico-steroids. Klin. med. 40 no.12:111-113 D '62.

(MIRA 17:2)

1. Iz Gorodskoy infektsionnoy klinicheskoy bol'nitsy No.7 (glavnyy vrach N.G. Zaleskver).

KRESTNIKOV, A.M., inzh.

Pneumatic transportation of keramzit. Stroimaterialy. 7 no.6:28
Jg '61. (MIRA 14:7)
(Kuybyshev--Aggregates (Building materials)--Transportation)

KHUKHROV, I.; KRESTNIKOV, I.

From practices in the utilization of power presses for lard
crackling pressing. Mias.ind.SSSR 33 no.2:41-42 '62.

(MIRA 15:5)

1. Leningradskiy myasokombinat.
(Lard)

MITROFANOV, Yuriy Mikhaylovich. Primali uchastiye: SHISHKOV,
V.N., inzh.; KRESTNIKOV, I.L., inzh.; IVANOVSKAYA, K.M.,
red.; BODANOVA, A.P., tekhn. red.

[Reinforced concrete sectional spans] Zhelezobetonnye chlenen-
nye proletnye stroeniia. Moskva, Avtotransizdat, 1963. 55 p.
(MIRA 17:4)

ANDRIANOV, B.D., inzh.; KRESTNIKOV, I.L., inzh.; MEKHIN, N.I., inzh.;
KHAREBAVA, B.A., inzh.

Constructing pile foundations using 0.6m precast reinforced
concrete shells. Transp. stroi. ll no.1:11-13 Ja '61.

(Ural River—Bridges—Foundations and piers) (MIRA 14:1)

MITROFANOV, Yu.M.; POL'YEVKO, V.P.; KRESTNIKOV, I.L.

Laying span structures by pushing without temporary supports.
Avt.dor. 25 no.7:8-10 J1 '62. (MIRA 15:8)
(Bridge construction)

N. V. KRESTNIKOV

USSR/Medicine - Epidemiology
Medicine - Epizootic Diseases

Jul 47

"The Use of 'Czechoslovakian Holes' for the Disposal of Infectious Animal Corpses,"
Prof A. A. Polyakov, Dr Vet Sci, N. V. Krestnikov, Engr, 2pp

"Veterinariya" No 7

PA 31/49T88

KRESTNIKOV, N. V.

PA 31/49T96

USSR/Medicine - Veterinary Medicine Aug 48
Medicine - Hospitals, Administration
and Organization

"Building of Veterinary-Medical Institutions,"
N. V. Krestnikov, Engr, 4 $\frac{1}{4}$ pp

"Veterinariya" No 8

Describes project for typical rayon veterinary hospital. Includes ward for ambulatory patients, noninfectious ward, isolation ward, washing and drying rooms, gas chamber, and smithy. Article contains five plans.

31/49T96

PA47T37

KRESTNIKOV, S. V.

Feb 1948

USSR/Electricity
Voltage Regulators
Transformers

"Variations in Transformer Efficiency during Voltage Regulation of Theater-Type Autotransformer,"
S. V. Krestnikov, Engr, GosteaSvet Works, 3 pp

"Vest Elektro-Prom" No 2

Describes changes in transformer efficiency of regulated theatrical autotransformer during the adjustment of voltage by sliding contact system. Transformer operating at maximum efficiency when the contact placed at tap $4/5$ of the total turns of the coil, at which time transformer dissipation is equal to 9.8% of nominal capacity of lamps in the circuit.

47T37

PA 196T25

KRESTNIKOV, S. V.

USSR/Electricity - Transformers
Voltage Regulation
"Gosteasvet" Plant

Aug 51

"Autotransformers With Continuous Voltage Regula-
tions," A. B. Podol'ner, S. V. Krestnikov,
Engineers, G. K. Aladzhalov, V. P. Krylov, S. G.
Pel'dman, "Gosteasvet" Plant, Moscow

"Elektrichestvo" No 8, pp 26-30

Describes series of autotransformers which pro-
vide continuous voltage regulation under load,
and gives principles underlying their design.

196r25

USSR/Electricity - Transformers (Contd) Aug 51

These transformers were designed and put into
series production by the "Gosteasvet" plant.
Submitted 9 Dec 50.

196r25

KRESTNIKOV, V. N.

SEE ALSO: KRESTOVNIKOV, V. N.

KRESTNIKOV, V. N.

PA 52T33

USSR/Geology
Geological Prospecting

Oct 1947

"Arkosic Sandstone in the Headwaters of the Alzan'
and Stori Rivers," V. N. Krestnikov, 2½ pp

"Dok Akad Nauk SSSR" Vol LVIII, No 1

Discussion of formation of sandstone in this area.
Two cuts show: 1) muscovite 3%, biotite 1%, quartz
27%, microcline 43%, plagioclase 20%, calcite 6%;
2) muscovite 5%, quartz 51%, microcline 43%, plagioclase
8%. Submitted by Academician D. S. Belyankin,
22 Mar 1947.

52T33

KRESTNIKOV, V. N.

"The Stratigraphy of the Devonian Deposits on the Western Slope of the Urals," Byul. Mosk. Obshch. Ispytat, Prirody, Otdel. Geol., 53, No.6, 1948.

KRESTNIKOV, V. N.

"The History of the Geological Development of the Eastern Caucasus in the
Region of the Tushet Intersection," Iz. Ak. Nauk SSSR, Ser. geol., 2, 1949

ZERNSTNIKOV, V. N.

Caucasus - Geology, Structural

Comparison of the seismicity and structure of East Central Caucasus. Dokl. AN SSSR 65
No. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952 ~~xxxx~~
1953, Uncl.

KRESTNIKOV, V.N.

USSR/Geology

Card 1/1 Pub. 46 - 6/19

Authors : Krestnikov, V. N.

Title : History of the development of the structure and the seismism of northern Tan'-Shan

Periodical : Izv. AN SSSR. Ser. geol. 3. 92 - 108, May - Jun 1954

Abstract : Geological data are presented regarding the Meso-Cenosite history of the development of northern Tan'-Shan, problems of its structure, newest migrations and the seismism of this section. Twenty-two Russian and USSR references (1886 - 1952). Maps.

Institution:

Submitted: September 29, 1953

KRESTNIKOV, V.N.

Effect of the Paleozoic structural plan on the development of
uplifts in northern Tien Shan during the Neogene and Quarter-
nary periods. *Biul.MOIP.Otd.geol.*30 no.6:55-68 N-D '55.
(Tien Shan--Geology) (MLRA 9:4)

KHMSNIKOV, V.N., ROBINSON, V.N.

On the Paleozoic in northern Kakhetia. Dokl. AN SSSR 105 no.5:
1076-1079 D '55. (MLBA 9:3)

1. Geofizicheskiy institut Akademii nauk SSSR. Predstavleno
akademikom D.I. Shcherbakovym.

(Kakhetia--Geology, Stratigraphic)

KRESTNIKOV, V.N.

Relationships between geological and seismic phenomena in Tien Shan.
Biul. Sov. po seism. no.3:81-94 '57. (MIRA 11:5)
(Tien Shan--Seismology)

KRESTNIKOV, V.N., kand. geol.-mineral. nauk.

Seismicity and geological structure. Priroda 46 no.8:25-34 Ag '57.
(MLRA 10:9)

1. Institut fiziki Zemli Akademii nauk SSSR, Moskva.
(Tien Shan--Geology, Structural)
(Seismic waves)

SOV/49-58-3-3/17

AUTHORS: Gzovskiy, M.V., Krestnikov, V.N., Neisesov, I.L. and
Reysner, G.I.

TITLE: Tectonic and Seismic Conditions of Garmskiy Rayon in
Tajik SSR (Sopostavleniye tektoniki i seysmichnosti'yu
Garm'skogo rayona Tadzhikskoy SSR.I) Part I.

PERIODICAL: Izvestiya Akad mii Nauk SSSR, Seriya Geofizicheskaya,
1958, Nr 8, pp 959 - 976 + 2 plates (USSR)

ABSTRACT: A junction of the vast Asian mountain chains, Himalaya-
Pamir geosyndine and the T'ien-Shan Range with the Tajik
depression represents territory of very active seismic
activities. Particularly, the Garmskiy rayon is known for
its highest concentration of the epicentres (Figures 1
and 5).

The history of its alpine, tectonic movements and the
formation of its geological structure can be represented
in the form of diagrams. The structural changes which were
undergone during the periods of the Mesozoic and the
Kainozoic in the eastern part of the region along the
line NW-SE are shown in Figure 2, while Figure 3
represents the same cross-section running through Garm-
skiy rayon.

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SOV/ 49-58-8-3/17

Tectonic and Seismic Conditions of Garmskiy Rayon in Tajik SSR

Some of the data given in the diagrams were interpolated from the places situated farther away (Figure 4) but it was assumed that the possibility of error could not affect the general character of the graphs.

A clear difference in the tectonic movements between the geosyncline and the plateau areas can be clearly distinguished in Figures 5 and 6.

The present structure (Figure 7) of the Garmskiy rayon and NE part of the Tajik depression is characterised by several divisions of which the most important is the alpine district of Pamir and Darvaz.

A main feature of the structure of the Garmskiy rayon is a vertical displacement of the isolated blocks separated by the tectonic faults which break through the Earth's core. The traces of these faults can be found even in the Palaeozoic base. A change occurred in their direction in comparison with that in the Neogen and Quaternary periods at the time when an inversion took place of the pre-Pamir depression and when the region of the Kabudkrin rose above the surrounding areas.

Card2/5 At the same period in the north-west of the Kabudkrin

SOV/49-58-8-3/17

Tectonic and Seismic Conditions of Garmskiy Rayon in Tajik SSR

anticline, a series of faults developed, the depth of which is characterised by the long and narrow grabens filled with small rocks (Figure 1). These grabens could not be independent structures as those in other areas (Figure 7). It can be assumed that they are the remnants of the changed direction of the movements of neighbouring regions. Originally, a rise of one of the regions caused the formation of a fault. The faults, in turn, caused a break in the general movement of the area. Thus, at the boundary of two neighbouring tectonic regions, the faults can be found, usually at the narrow ridges (Figures 1 and 3). The formation of new faults in relation to the dislocations are explained by the faults being not vertical. They are mostly inclined towards its lifted side.

A noticeable feature is a very well-maintained range of the young faults and folds of neogen-Quaternary origin. Their large number signifies a horizontally directed course of the tectonic regions. Also, it can be assumed from their general orientation that the shear effect is directed along the Meridian.

The Palaeozoic foundation of the Garmskiy rayon was effected

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SCV/49-58-8-3/17

Tectonic and Seismic Conditions of Garmskiy Rayon in Tajik SSR

by both the strong, vertical forces and the weaker, horizontal shearing stresses, thus being subjected to a deformation which was of plastic character. This can be seen on the surfaces where the Palaeozoic is found close to the Mesozoic rocks. Where this type of deformation occurred with great speed, the faults were formed. It could be said that all the blocks of Palaeozoic origin behaved not as rigid bodies but as a plastic medium with some parts of the Earth core being somewhat of greater viscosity in relation to the Mesozoic and the Tertiary sedimentations.

The general character of the mechanism of formation of the alpine structure of the Garmskiy rayon could be also applied to the regions of Tajik depression (figure 0). It can be assumed that the developments in the Garmskiy rayon took place during the second half of the Quaternary period and lasted about 120-230 thousand years which can be compared with 600 thousand years of the total time of the Quaternary period.

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SOV/49-58-2-3/17

Tectonic and Seismic Conditions of Garmskiy Rayon in Tajik SSR

There are 8 figures and 28 references, 25 of which are Soviet and 3 German.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki Zemli
(Ac.Sc.USSR, Institute of Terrestrial Physics)

SUBMITTED: August 28, 1957

1. Geology--USSR

Card 5/5

SOV/49 -58-12-1/17

AUTHORS: Gzovskiy, M. V., Krestnikov, V. N., Nersesov, I. L.,
Reysner, G. I.

TITLE: Comparison between the Tectonics and Seismicity of Garmskiy
Rayon of Tadzhik SSR. II (Sopostavleniye tektoniki s seys-
michnost'yu Garmskogo rayona Tadzhikskoy SSR. II)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya geofizicheskaya,
1958, Nr 12, pp 1425-1442 and 2 inserts (USSR)

ABSTRACT: It was observed that more than 9000 epicentres of the
energy from 10^4 - 10^{13} j showed activity during 1955 and 1956
in Garmskiy rayon of about 13 500 km² (Figs.2, 3 and 8). The
earthquakes were registered in sufficient detail to give a
complete picture of the seismicity of this region (Fig.1).
This region, therefore, was chosen for the investigation on
the relationship between seismicity and tectonic structure.
A quantitative method of investigation was chosen so that the
analysis of tectonics could be utilised in the determination
of seismicity. The mean gradient of the velocity of vertical
tectonic movements of the earth crust was calculated from
Eqs.(1) and (2). Some results are shown in Figs.4, 5 and 7
and Tables 1 and 2. The cross-sections I-I and II-II
employed in the calculations can be seen in Fig.6. The com-
parison showed that in Garmskiy rayon the areas of higher

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SOV/ 49-58-12-1/17

Comparison between the Tectonics and Seismicity of Garmskiy Rayon of Tadzhik SSR. II.

seismic activity coincide with the banded structure, for which a mean gradient of tectonic movements in the Quaternary period was high (Figs.5 and 6). Therefore, it can be stated that the velocity of seismic activities increases with an increase of mean tectonic gradient. In order to verify this relation, a method was devised which could be applied to any region having seismic activity of short duration (2 to 3 years), provided weak earthquakes and the measurable gradients of tectonic movements are of recent origin. This method is based on the detailed analysis which showed that the correlation between the frequency of earthquakes (Fig:1) and the tectonic gradient, Fig.6, is maintained in various areas of the Garm region (Table 3, A₇ - frequency). As the above relation was found for one region only, it is possible that some modifications

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SOV/ 49 -58-12-1/17

Comparison between the Tectonics and Seismicity of Garmskiy Rayon of Tadzhik SSR. II.

are necessary for the different tectonic structures or for various depths of the earth crust. Therefore, the investigations in this matter are not yet concluded and the additional information will be presented at some future date. There are 3 tables, 8 figures and 28 references, of which 23 are Soviet, 3 are German (2 translated from Hungarian), and 2 are English.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of Sciences, USSR, Institute of Physics of the Earth)

SUBMITTED: August 4, 1958.

Card 3/3

KRESTNIKOV, V.N.

Development of the Paleozoic geosynclinal area in the Pamirs
and adjacent parts of Asia. Izv.vys.ucheb.zav.; geol.i razv.
2 no.4:3-28 Ap '59. (MIRA 12:12)

1. Institut fiziki zemli AN SSSR.
(Asia, Central--Geology, Structural)

KRESTNIKOV, V.N.

Development of the Paleozoic geosynclinal area in the Pamirs and adjacent parts of Asia. Izv. vys. ucheb. zav.; geol. i razv. 2 no.7: 3-26 J1 '59 (MIRA 13:3)

1. Institut fiziki zemli Akademii nauk SSSR.
(Asia--Geology, Structural)

PHASE I BOOK EXPLOITATION

SOV/5096

Bune, V. I., M. V. Gzovskiy, K. K. Zapol'skiy, V. I. Keylis-Borok,
V. N. Krestnikov, L. N. Malinovskaya, I. L. Nersesov, G. I. Pavlova,
T. G. Pautian, G. I. Reysner, Yu. V. Riznichenko, and V. I. Khalturin

Metody detal'nogo izucheniya seysmichnosti (Methods of Detailed Seismic Research)
Moscow, Izd-vo AN SSSR, 1960. 327 p. No. of copies printed not given.
(Series: Akademiya nauk SSSR. Institut fiziki zemli. Trudy, vyp. 9 [176])

Resp. Ed.: Yu. V. Riznichenko, Corresponding Member AS USSR; Ed. of Publishing
House: S. I. Mosarskiy; Tech. Ed.: O. G. Ul'yanova

PURPOSE: This book is intended for geophysicists, particularly seismologists.

COVERAGE: The book summarizes the principal results of the work of the TKSE
Instituta fiziki zemli AN SSSR (Tadzhik Complex Seismological Expedition
of the Institute of Physics of the Earth of the AS USSR) and the Institut
seysmologii AN Tadzhijskoy SSR (Institute of Seismology of the AS Tadzhijsk
SSR) during the period 1955-1957. Among the topics discussed are: seismic
apparatus used, new methods for determining the coordinates of earthquake

Card 1/16

7

Methods of Detailed Seismic Research

SOV/5096

foci, detailed methods for determining the structure of the earth's crust, some results of these determinations, methods of determining seismic energy on the basis of a series of criteria, analysis of dominant frequencies, the use of frequency-selective apparatus, a general description and analysis of seismic conditions in the Garm and Stalinabad areas, the geological structure of the Garm region and the history of its development, and a comparison of the spatial distribution of seismicity and the geological and tectonic structure of the area. The Foreword mentions Academician G. A. Gamburtsev [deceased] who laid the foundations for this work when he was director of the IKSE. The individual chapters of the book were written by: Introduction and Chapter 1 -- I. L. Nersesov and Yu. V. Riznichenko; Chapter 2 -- I. L. Nersesov; Chapter 3 -- I. L. Nersesov and T. G. Rautian; Chapter 4 -- T. G. Rautian; Chapter 5 -- K. K. Zapol'skiy and V. I. Khalturin; Chapter 6 -- V. I. Keylis-Borok, L. N. Malinovskaya, G. I. Pavlova, and V. I. Khalturin; Chapter 7 -- V. I. Bune, I. L. Nersesov and Yu. V. Riznichenko; Chapter 8 -- M. V. Gzovskiy, V. N. Krestnikov, and G. I. Reysner; Chapter 9 -- V. I. Bune, M. V. Gzovskiy and I. L. Nersesov. There are 272 references: 185 Soviet, 73 English, and 14 German.

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S/049/60/000/03/001/019
E131/E691

AUTHORS: Gzovskiy, M.V., Krestnikov, V.N., Nersisov, I.L. and Reysner, G.I.

TITLE: New Principles of Seismic Zoning Derived for Central Tyan'-Shan. II

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1960, Nr 3,
pp 353-370 (USSR)

ABSTRACT: This is a continuation of work published in this journal, Nr 2, 1960. The investigation is based on the seismic zoning chart of the USSR (Ref 13). Only earthquakes of magnitude 9, corresponding to the energy $E = 10^{15}$ J, were considered. The purpose of the investigations was to establish those areas considered to be the safest from the point of view of engineering construction. The method was based on the rate of tectonic movements as described by Gzovskiy et al. (Ref 5). The map shown in Fig 1 was compiled on the basis of the results thus obtained. The method of seismic prognosis consisted of three separate stages:

- 1) The territory was divided according to the gradients of tectonic movements.
- 2) The zones thus determined were classified according to the magnitude of the above rate.

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E131/E691

New Principles of Seismic Zoning Derived for Central Tyan'-Shan. II

3) The seismic safety was decided on the basis of the above in conjunction with geological data. As an example, the three safety zones, 1, 2, 3, are shown in Fig 2. The seismic activity Λ of a zone is defined as a period of the earthquake frequency, $T = 1/N$, the isolines of which were plotted as shown in Figs 3-5. The first chart was based on the observations during 1957/58, the second during the period 1950-56 and the third was based on the strong earthquakes during the period starting 1885. The unit zones on the charts are of 1000 km^2 , the time unit is one year and the energy $E = 10^{10} \text{ J}$ ($K = 10$). The seismic charts obtained, therefore, differ from the usual zoning charts by inclusion of the frequency of earthquakes. The final choice of a zone for hydro-engineering construction could be based on the magnitude of earthquakes defined by the standards SN-2-57 (Ref 14) or GOST 3999-48 (Ref 8).



Card 2/3

S/049/60/000/03/001/019
E131/E691

New Principles of Seismic Zoning Derived for Central Tyan'-Shan. II

As an example, the probability $p \leq 0.001$ of occurrence of earthquakes (once or less in 1000 years) is suitable for the erection of less durable structures and $p \leq 0.0001$ (once or less in 10000 years) for long-lasting structures. Determination of such a probability can be based on the above zoning charts and the nomogram given in Fig 6. Charts showing the regions of various probabilities of the occurrence of earthquakes, calculated for Central Tyan'-Shan, are given in Figs 7 and 8. There are 8 figures and 19 references, 17 of which are Soviet and 2 English.

ASSOCIATION: Akademiya nauk SSSR, institut fiziki zemli (Academy of Sciences USSR,
Institute of Physics of the Earth)

SUBMITTED: July 9, 1959

Card 3/3

GZOVSKIY, M.V.; KRESTNIKOV, V.N.; LEONOV, N.N.; REZANOV, I.A.; REYSNER, G.I.

Map of recent tectonic movements in Central Asia. *Izv. AN SSSR. Ser. geofiz.* no.8:1168-1172 Ag '60. (MIRA 13:8)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Soviet Central Asia--Geology, Structural--Maps)

S/169/61/000/010/009/053
D228/D304

AUTHORS: Bune, V. I., Gzovskiy, M. V., Zapol'skiy, K. K.,
Keylis-Borok, V. I., Krestnikov, V. N., Malinovskaya,
L. N., Nersesov, I. L., Pavlova, G. I., Rautian, T. G.,
Reysner, G. I., Riznichenko, Yu. V., and Khalturin, V. I.

TITLE: Methods of the detailed study of seismicity

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 10, 1961, 12-13,
abstract 10A144 (Tr. In-ta fiz. Zemli AN SSSR, no. 9,
1960, 327 p.)

TEXT: The Tadzhik complex seismologic expedition was organized with
the aim of studying the nature of earthquakes and the conditions of their
genesis. The most seismically-active zones of the USSR (Garmo and Stalina-
bad) were chosen as the work areas. The specific conditions of working
and processing the data demanded the development of special systems of ob-
servation and methods of interpretation. The large amount of recorded

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Methods of the detailed...

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D228/D304

seismic phenomena permitted the use of statistical methods for studying their distribution in space and time; these methods, in their turn, provided the basis for introducing the quantitative indices of the seismicity characteristics of the seismically-active areas. The actual seismic observations were closely coordinated with geologic investigations, and this provided the possibility of exposing the tectonic basis of the seismic phenomena. A general review of the work area is given in Chapter 1, and concise data on major earthquakes are cited together with the general position of the expedition stations. A description of the standard main and auxiliary apparatus used at the stations, and also the layout and description of newly developed equipment--including an automatic seismic station with a magnetic memory--is cited in Chapter 2. The methods developed and utilized in the expedition for studying the crust's structure in the area under investigation from the records of nearby earthquakes are described in Chapter 3. Horizontal and vertical hodographs were constructed. The resulting material enabled the crust to be represented as a one-layer mass

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D228/D304

with a longitudinal-wave velocity of 6.0 - 6.1 km/sec. At the Mohorovicic boundary, the velocity suddenly changes to 8.0 km/sec. and then somewhat decreases, but at a depth of 300 km it subsequently increases to 9.2 km/sec. These data underlay the construction of isochrone charts used to localize the epicenters and to determine the focal depths. The isochrone charts were constructed with an account of the heterogeneity of the work area's geologic structure and the peculiarity of the seismic stations' location. This enabled the precision of hypocenter localization to be substantially increased, reducing it to 1 - 2 km at the center of the work area's topographic map. In Chapter 4, the definition of the concept of seismic energy at the focus is given, and the basic formulas are derived for its calculation. On the basis of experimentally obtained laws for the dying out of energy with distance, nomographs were constructed to determine practically the energy at the focus from the records of nearby earthquakes. Appraisal of the precision of calculation of the energy in relation to different factors shows that it may be determined accurately to the order of its magnitude. In this connection, the value $K = \lg E_j$.

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D228/D304

is introduced for characterizing the energy class of earthquakes. The value of K is compared with the earthquake magnitude M . The study of the iso-energy lines shows that the different degrees of the dying out of seismic energy along and across the strike of geologic structures exert a decisive influence on the form of the isoseisms. In Chapter 5, the frequencies of seismic vibrations are studied--in relation to the earthquake energy, the distance from the source, the geologic conditions at the point of observation and at the hypocenter, etc.--from recordings at both the customary stations and a special WCC (ChISS) seismic-station intended for frequency analysis of seismic waves directly at their place of registration. A detailed description is given for the frequency-selective seismic-station WCC-1954 (ChISS-1954) and for the results of the investigation of its recordings. Certain epicentral zones with an anomalous frequency are thereby revealed. The procedure for theoretically calculating the focal characteristics, and also for appraising these latter from empirical data, is given in Chapter 6. Several formulas are

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D228/D304

Methods of the detailed...

cited for determining the size of a focus in relation to its energy on the basis of different physical propositions. The dynamic parameters of the foci are determined; there appear to be definite predominant directions for both the strike and dip of the fracture planes. The characteristics of the seismic conditions of the Garmu and Stalinabad seismically-active regions--both as a whole and in individual areas--are quoted together with the variations in the parameters of the conditions in time. The quantitative expression of the seismicity during constant seismic conditions is determined by the seismic activity. The possibility is shown of constructing graphs of the recurrence of earthquakes from short observations of weak shocks, and methods are given for determining the period required to obtain the parameters of the seismic conditions with a pre-set precision in relation to the energy of the recorded earthquakes. The statistical constancy of the seismic conditions is determined by the so-called measure of dispersion of the frequency of earthquakes. A brief description of the area's stratigraphy and the history of its geologic development is given in Chapter 8. The structural schemes and descriptions of the most important

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Methods of the detailed...

S/169/61/000/010/009/053
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deep faults are cited. The contemporary structure of the Garmu area is depicted as two main regions: the alpine geosynclinal zone in the south and the activated epi-Hercynian platform in the north. In section, it is drawn as several steps of Paleozoic basement adjoining each other along deep faults. A comparison of the seismicity with the tectonics of the study areas is made in Chapter 9. The construction of maps of isolines of seismic activity and gradients of the rate of tectonic movements is recommended for appraising the connection between the seismicity and the tectonics. Methods are cited for constructing such maps. The congruence between these magnitudes is established for the regions under investigation, and areas with the maximum gradient values correspond to those with the highest values of seismic activity. 272 references. [Abstracter's note: Complete translation.]

Card 6/6

KELSTEROV, V.N.; REYNER, G.I.

Alpine tectonics of the central Tien Shan. Sov. geol. 3
no. 2-2-21 D '61. (MIR 14:2)

1. Institut fiziki Zemli AN SSSR.
(Tien Shan--Geology, Structural)

KRESTNIKOV, V.N.

History of the geological development of the Pamirs and adjacent parts of Asia in the Meso-Cenozoic (Triassic and the lower Cretaceous). Sov. geol. 4 no.4:60-85 Ap '61. (MIRA 14:5)

1. Institut fiziki Zemli AN SSSR.
(Pamirs--Geology, Stratigraphic)

KRESTHIKOV, V.K.

Geological development of the Pamirs and adjacent areas of
Asia in the Mesozoic and Cenozoic; upper Cretaceous Quaternary.
Sov.geol. 4 no.7:68-94 JI '61. (MIRA 14:10)

1. Institut fiziki Zemli imeni G.Ya.Snidta AN SSSR.
(Pamirs—Geology, Stratigraphic)

PETRUSHEVSKIY, B. A., geolog; BELOUSOV, V. V., geolog; GZOVSKIY, M. V., geolg;
GORYACHEV, A. V., geolog; KIRILLOVA, I. V., geolog; KRESTNIKOV, V. N.
geolog; RASTVOROVA, V. A., geolog; REZANOV, I. A., geolog; SORSKIY,
A. A., geolog.

Geologic principles of seismis division into districts. Studii
astron seismol 6 no.2:181-186 '61.

1. Institut fiziki Zemli AN SSSR.

KRESTNIKOV, Vladimir Nikolayevich; BELOUSOV, V.V., otv. red.;
FIN'KO, V.I., red, izd-va; POLYAKOVA, T.V., tekhn. red.

[History of the development of epeirogenic movements of the
earth's crust in the Pamirs and adjacent areas of Asia] Istorii
razvitiia kolebatel'nykh dvizhenii zemnoi kory Pamira i sopredel'-
nykh chastei Azii. Moskva, Izd-vo Akad. nauk SSSR, 1962. 177 p.
(MIRA 15:6)

1. Chlen-korrespondent Akademii nauk SSSR (for Belousov).
(Central Asia—Earth movements)

KRESTNIKOV, V.N.; NERSESOV, I.L.

Tectonic pattern of the Pamirs and Tien Shan and its relation
to the surface relief of Mohorovicic. Sov.geol. 5 no.11:36-69
N '62. (MIRA 15:12)

1. Institut fiziki Zemli AN SSSR imeni O.Yu, Shmidta.
(Tien Shan--Geology--Structural) (Pamirs--Geology, Structural)

KRESTHIKOV, V.N.; REYSNER, G.I.

Characteristics of the latest tectonic movements of the Western Sayan Mountains and eastern Tuva. Dokl. AN SSSR 160 no.4:897-900 F '65. (MIRA 18:2)

1. Institut fiziki Zemli im. O.Ya. Shubnina AN SSSR. Submitted March 11, 1964.

PRESTNIKOV, V.N.; REYSNER, G.I.

Stratigraphy of the Tertiary continental sediments of Tuva in
Central Asia. Dokl. AN SSSR 164 no.6:1378-1381 0 '65.

(MIRA 18:10)

1. Institut fiziki Zemli im. O.Yu.Shmidta AN SSSR. Submitted
April 19, 1965.

ACC NR: AP6032982

SOURCE CODE: UR/0011/66/000/010/0078/0090

AUTHOR: Krestnikov, V. N.; Reysner, G. I.

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR, ^{Moscow} (Institut fiziki Zemli, Akademiya nauk SSSR)

TITLE: Naryn-Chichkan transverse region of the subcrustal fault of Western Tyan-Shan'

SOURCE: AN SSSR. Izvestiya. Seriya geologicheskaya, no. 10, 1966, 78-90

TOPIC TAGS: geologic exploration, geologic surveying, geomorphology, physical geology, subcrustal fault orogeny, earth crust, *tectonics*

ABSTRACT: The present article describes the Naryn-Chichkan transverse region of the subcrustal fault of Western Tyan-Shan'. It is shown that the Naryn-Chichkan subcrustal fault and the associated depression strike transverse to the main tectonic blocks of the lower Naryn River basin. It is assumed that the fault extends further south into the West-Karasuy and Fergana valleys near the city of Namangan, where it joins one of the subcrustal faults along the northern boundary of the Fergana valley. The fact that the Naryn-Chichkan subcrustal fault dates back to before the Lower Quaternary indicates recent tectonic changes in the ancient structural plan of this part of Tyan-Shan. The Naryn-Chichkan subcrustal fault region was formed unevenly with respect to time and space. It underwent down-

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UDC: 551.24(235.216)

ACC NR: AP6032982

warping during most of the Quarternary period in the area of confluence of the Chichkan, Naryn, and Uzunakhmat Rivers. The most intense downwarping in the Chichkan area took place during the Upper-Quaternary period. Chronological analyses are presented of the major geological processes of the Tyan-Shan', and tectonic maps showing the Alpine and Quaternary orogenies are included. Orig. art. has: 7 figures.

SUB CODE: 08/ SUBM DATE: 26May64/ ORIG REF: 010/

Card 2/2

SLAVYANSKIY, V.T., KRESTNIKOV, Ye. N., PROSKURYAKOV, M.V.

New method for analysing gases in glass. Stek. 1 ker. 17

no.6:29-33 Je '60.

(MIRA 13:6)

(Glass)

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 53 (USSR) SOV/137-58-12-24299

AUTHOR: Krestnikov, Ye. P.

TITLE: Production of Calcium Hydride in Continuous Equipment (Proizvodstvo gidrida kal'tsiya v apparate nepreryvnogo deystviya)

PERIODICAL: Tr. Ural'skogo n.-i. khim. in-ta, 1957-1958, Nr 5, pp 118-135

ABSTRACT: An investigation is made of the process of Ca hydrogenation, with selection of optimum conditions for industrial performance of this process. The influence of the level of purity of the Ca and the structure of the material upon the hydrogenation process is noted. It is found that addition of up to 1% Na to the ground Ca (by fusing with metallic Na or with its chloride) results in a stable reaction at 240°C and is efficient with Ca of various levels of purity. Owing to the highly exothermic nature of the reaction and the similarity of the melting points of Ca and its hydride, it is possible to overheat and fuse the material. Inhibition of the reaction is performed by the charging of return hydride or inert gas. A continuous equipment has been developed. It is a gastight shelf-type electric furnace with 5 groups of heaters and automatic temperature control. The equipment

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SOV/137-58-12-24299

Production of Calcium Hydride in Continuous Equipment (cont.)

works at a 50-100mm Hg excess H_2 pressure. The Ca shavings enter the first zone of the furnace at a temperature of 250° , and Ar is introduced to prevent overheating. The upward progress of the H_2 in the furnace provides assurance that Ar will be present only in the upper portion of the furnace. The temperature of the next zone is $300-350^\circ$. The material is in the furnace for 1 hour altogether. The charging of the shavings, the motion thereof through the furnace zones, the grinding of the hydride in a cone crusher (down to 1-1.5 mm grain size), and the unloading are mechanized. Several hundred kg of hydride were produced on a test model. Bibliography: 23 references.

L. P.

Card 2/2

PHASE I BOOK EXPLOITATION

SOV/6417

Suslov, Nikolay Ivanovich, Aleksey Dmitriyevich Grigor'yev, Igor' Veniaminovich Pimenov, Yevgeniy Pavlovich Krestnikov, Valentina Ivanovna Susorova, Valentina Ivanovna Morotskaya, Tamara Vasil'yevna Basargina, and Pavel Alekseyevich Zaytsev

Nemetallicheskiye materialy; spravochnik (Nonmetallic Materials; A Handbook). Moscow, Mashgiz, 1962. 360 p. Errata slip inserted. 32,000 copies printed.

Ed. (Title page): N.I.Suslov, Engineer; Reviewers: A.V.Podol'skiy, Engineer, A.I.Lesik, Engineer, T.V. Basargina, Engineer, and Yu.I. Bagin, Engineer; Tech. Ed.: N.A.Dugina; Executive Ed. of Ural-Siberian Department (Mashgiz): N.D.Chilikina, Engineer.

PURPOSE: This handbook is intended for engineers and technicians in the machine building industry.

COVERAGE: The book contains systematized information on non-metallic materials used in machine building in the Soviet Union.

Card 1/3

Nonmetallic Materials (Cont.)

SOV/6417

Trade names, GOST designations, properties, and applications are given in tabular form for plastics, adhesives, varnishes, dyes, oils, and chemicals. The book deals primarily with plastics, which are divided into seven classes. Chapter I was compiled by Engineer N.I.Suslov; Chapter II, by Candidate of Technical Sciences A.D.Grigor'yev and Engineer I.V.Pimenov; Chapter III, by Engineer V.I.Susorova; Chapter IV, by Engineers E.P.Krestnikov, V.I.Morotskaya, and T.V.Basargina; and Chapter V, by Engineer P.A. Zaytsev. There are 84 references: 83 Soviet and 1 English.

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| Ch. II. Adhesives | 151 |

Card 2/3

Krestnikov, Yu. S.
USSR/ Physics

Card 1/1 Pub. 22 - 12/63

Authors : Blinov, G.A.; Krestnikov, Yu. S.; and Pershin, I.I.

Title : Observation of tracks of ionizing particles

Periodical : Dok. AN SSSR 99/6, 929-930, Dec 21, 1954

Abstract : Experiments with molybdenum glass ampoule filled with propane (C_3H_8) are described. The experiments were conducted to determine the possibilities of using the "bubble" cameras for photographing very-high energy ionizing particles which would provide a valuable means for the solution of various problems of nuclear physics. Six references (1952-1954). Photograms.

Institution:

Presented by: Academician A.I. Alikhanov, November 4, 1954

Krestnikov, Yu. S.

Liquid bubble chambers for the study of ionizing particles.
V. A. Krestnikov, Yu. S. Krestnikov, and L. L. Perkin. *Bull. Acad. Sci. U.S.S.R., Phys. Ser.* 6, 686-8 (1962) (English translation).—See *C.A.* 50, 7818g. H.M.L.

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BLIMOV, G.A.; KRESTNIKOV, Yu.S.; PERSHIN, I.I.

Liquid bubble chambers for investigating ionizing particles.
Izv.AN SSSR.Ser.fis. 19 no.6:758-760 N-D '55. (MLRA 9:4)

1.Akademiya nauk SSSR.
(Cosmic rays) (Nuclear physics)

BLINOV, YU. S., BLINOV, G.A. and LITVINOV, N.F.

Measurement of the ionizing capacity of particles in
a bubble chamber (II/40)

CERN-Symposium on High Energy Accelerators and Pion
Physics.

Geneva, 11-23 June 56.
In. French #5.

KRESTNIKOV, Yu. S.

Measurement of the ionizing capacity of particles in a bubble chamber. G. A. Glinin, Yu. B. Krestnikov, and M. R. Lomanov (Acad. Sci. U.S.S.R., Moscow). Soviet Journal of High Energy Accelerators and High Energy Physics, 1958, Proc. 2, 25-7. — The track d. of particles in a bubble chamber is proportional to the square of the charge on the particle divided by the square of the ratio of particle velocity to the velocity of light, and is independent of chamber conditions.

James R. Oliver

1-4E30L
1-4E4j
1-RMj
RMj/172

KRESTNIKOV, YU.S.
SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1770
AUTHOR BLINOV, G.A., KRESTNIKOV, YU.S., LOMANOV, M.F.
TITLE Measuring the Ionization Power of Particles in a Bubble Chamber.
PERIODICAL Zhurn. eksp. i teor. fis, 31, fasc. 5, 762-770 (1956)
Issued: 1 / 1957

Contrary to other authors the authors of the present work employed the method of pressure drop up to a certain level, which warranted a very stable operation of the chamber. The experimental part of the work was carried out by means of the synchrocyclotron of the Institute for Nuclear Problems of the Academy of Science in the USSR.

Structure of the chamber and selection of mode of operation: The work space of the chamber consists of a cylindrical vessel of stainless steel (inner diameter 92 mm, height 70 mm). Simply distilled technical propane with a vapor density of 30 atm at 64° C was used as an operating liquid. The construction of the chamber is discussed on the basis of a drawing. A particular feature of the device described is the drop of pressure in the chamber down to a constant regulatable level. By a pressure stabilizer and through an electromagnetic inlet valve carbonic acid gas is introduced under pressure of 38 atm. This pressure is transferred by means of water to two membranes. After complete condensation of the gaseous phase the chamber is ready for expansion. During work with an accelerator the chamber was fitted in a collimated bundle of neutrons with average energy, in a bundle of γ -quanta originating from the decay of neutral pions, or in a bundle of particles emitted from the target and from the

Žurn.eksp.i teor.fiz,31,fasc.5,762-770 (1956) CARD 2 / 2 PA - 1770

walls of the collimator in the direction of the protons. A control system made the remotely controlled measuring of temperature, pressure, and other quantities possible in the chamber.

Methods for the measuring of the density of the traces: At present the grain densities in nuclear photo emulsions are being determined by the method of the average length of distances and from the number of distances. The authors employed similar methods, viz. 1.) The method of simply counting the number of bubbles. 2.) The method of the average length of distances, which is the most objective. 3.) Determination of the number of distances exceeding a certain minimum distance. This method is the most accurate for dense traces. The densities of the traces of 5 cm length can be determined within a 20-fold variation range with errors of from 6 to 10% without modifying the accuracy of the chamber.

In conclusion the identification of the particles and the dependence of the density of the trace on the velocity of the particle is discussed. The distinguishing features of electrons, protons, deuterons, and pions are pointed out.

INSTITUTION:

KRESTNIKOV, V.S.

Distr: 4E3d

1991

MEASUREMENT OF THE IONIZING POWER OF PARTICLES IN A BUBBLE CHAMBER

Krestnikov, and M. P. Lomayev, G. A. Binyayev, Soviet Phys. JETP 4, 601-701 (1957) June.

The possibility of the measurement of the ionizing power of particles in a propane bubble chamber is demonstrated. The chamber was operating in conjunction with an accelerator. The use of the method of the reduction of pressure to a controllable constant level ensured the stability of chamber operation necessary for ionization measurements. The period of sensitivity was 40 msec. Measurements of the ionizing power of particles were carried out in the range up to eight times minimum ionization. It was found that the track density changes with the velocity of the particle as $1/\beta^2$ for $\beta < 0.9$. For velocities close to that of light, relativistic increase in the track density is observed. The used methods on the track evaluation are described. (auth)

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AUTHOR BLINOV, G.A., YU.S. KRESTNIKOV, LOMANOV, M.F., SHALAMOV, Ya.Ya. 56-6-4 Q/56
TITLE On the Use of a Mixture of Two Liquids for a Bubble Chamber.
(Primeneniye smesi dvukh zhidkostey dlya puzyr'kovoy kamery-Russian).
PERIODICAL Zhurnal Eksperiment. i Teoret. Fiziki, 1957, Vol 32, Nr 6, pp 1572-1573
U.S.S.R.

ABSTRACT If the dimensions of bubble chambers are enlarged, the technical difficulties connected with their operation are increased, for it is necessary to provide for such temperatures and pressures in the chamber as correspond to the liquid used. These difficulties might be removed to a considerable extent if it were possible to work at a temperature that is near room temperature. Perhaps a good working temperature might be attained by the suitable mixture of two liquids (as e.g. propane and phreon). For this purpose the authors carried out experiments with a bubble chamber which was filled with a mixture of phreon-12 (CCl_2F_2) and phreon-13 ($CClF_3$). The construction of the chamber used for this purpose has already been described in a previous paper. By fitting a Co^{60} - γ -source beside the chamber, it was possible to watch the traces of the electrons and to photograph them. In this way it was possible to find out at what temperatures, pressures, and concentrations, the traces can be observed. The authors selected mixtures of two different compositions. The data of the two mixtures are given. The experiments were carried out in the case of the first mixture at temperatures of from 19 to 38°C and in

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

56-6-40/56

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

ASSOCIATION Not Given.
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21 (7)

AUTHORS:

Krestnikov, Yu. S., Meshkovskiy, A. G., SOV/56-37-3-52/62
~~Shalimov, Ya. Ya.~~ Shebanov, V. A., Kobzarev, I. Yu.

TITLE:

On the Decays $\mu \rightarrow e + \gamma$ and $\mu \rightarrow e + \nu + \bar{\nu} + \gamma$

PERIODICAL:

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

ABSTRACT:

From the hypothesis of the existence of an intermediate boson of great mass (universal A-V interaction) it follows that the decay $\mu \rightarrow e + \gamma$ is possible, which is forbidden according to A-V point interaction. Feynberg calculated the probability of this interaction and showed that the ratio $g_1 = R(\mu \rightarrow e + \gamma)/R(\mu \rightarrow e + \nu + \bar{\nu})$ depends on the cut-off parameter Λ . If Λ is equal to the boson mass $g_1 \approx 10^{-4}$, if $\Lambda < M$, it may become arbitrarily small. The authors of the present "Letter to the Editor" searched for the $\mu \rightarrow e + \gamma$ decays by means of a 17 liter freon bubble chamber. The chamber was located in the external π^+ beam of the synchrocyclotron of the OIYaI (Joint Institute of Nuclear Research). The 200 Mev π^+ -mesons were slowed down by means of a graphite filter and were stopped in the chamber space. About 20000 stereophotographs

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On the Decays $\mu \rightarrow e + \gamma$ and $\mu \rightarrow e + \nu + \bar{\nu} + \gamma$

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were obtained, which were twice evaluated. The evaluation lines are given. Of the three possible decays $\mu \rightarrow e + \nu + \bar{\nu} + \gamma$, $\pi \rightarrow \mu + \nu + \gamma$, and $\mu \rightarrow e + \gamma$ not a single one of the third kind was found among 91000 π - μ - e decays. ϱ_1 was determined as amounting to $\approx 4.3 \cdot 10^{-5}$. In the evaluation of the plates reactions of the first kind were found with $(e, \gamma) < 180^\circ$; such a photo is shown by figure 1. Such a decay has hitherto not been observed. A table shows all cases in which $E_\gamma \geq 15 - 20$ Mev and in which the angle $(e, \gamma) \geq 50 - 60^\circ$. The table contains data concerning the (e, γ) -angle, E_e and E_γ , as well as the energy of the decay products, Q . For processes of the first kind it was found that $Q = 105.2$ Mev, for those of the second kind - 33.9 Mev. Figure 2 shows investigation results in form of a diagram, where the number of recorded pairs is plotted versus the angle of rotation in the muon stopping point. The ratio of the reactions $\varrho_2 = R(\mu \rightarrow e + \nu + \bar{\nu} + \gamma) / R(\mu \rightarrow e + \nu + \bar{\nu})$ was determined as amounting to $(0.80 + 0.24) \cdot 10^{-3}$.

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Theoretically, $1.02 \cdot 10^{-3} < \varrho_2 < 1.80 \cdot 10^{-3}$ was obtained

On the Decays $\mu \rightarrow e + \gamma$ and $\mu \rightarrow e + \nu + \bar{\nu} + \gamma$

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

SUBMITTED: June 9, 1959

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B029/B077

AUTHORS:

Barmin, V. V., ~~Krestnikov, Yu. S.~~, Pershin, I. I.,
Rumyantseva, V. P., Shalamov, Ya. Ya., Shebanov, V. A.

TITLE:

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

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 39, No. 5(11), pp. 1229-1231

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

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

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N_{\uparrow} and N_{\downarrow} denote the number of pions leaving the production level in an upward or downward direction. The values of αP at energies above 1 Bev permit conclusions about the polarization of Λ^0 hyperons produced at these energies. Therefore, the authors investigated the asymmetry in the decay of Λ^0 hyperons which were produced on light nuclei by negative pions with a momentum of (2.8 ± 0.3) Bev/c in a 17-liter Freon bubble chamber without a magnetic field. The measurements were made with a beam of negative mesons of the proton synchrotron of OIYaI (Joint Institute of Nuclear Research) For negative pions with a momentum of 2.8 Bev/c, Λ^0 particles were produced mainly according to the reaction $\pi^- + N \rightarrow \Lambda^0 + K + n\pi$, and a preliminary estimate yielded $\bar{n} \approx 1.5$. The first examination of about 60,000 stereo-photos showed about 1200 "forks" at the end of pion tracks. 183 Λ^0 decays were selected, of which 165 refer to the production of Λ^0 particles by Freon (that is, by nuclei of C, F, Cl). 18 cases refer to production by a propane-xenon mixture, that is, by nuclei of H, C, Xe. The average momentum of the Λ^0 particles used for the measurement was 650 Mev/c in the laboratory system. Results of αP measurement:

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

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| Filling material of the chamber | Total number of Λ^0 decays | Number of negative pions produced by the decay of a Λ^0 hyperon emitted | | | $\alpha\bar{P}$ |
|------------------------------------|---------------------------------------|--|----------|-----------------------------|-----------------|
| | | upward | downward | on the produ- cing level | |
| Freon | 165 | 67 | 95 | 3 | -0.34 ± 0.16 |
| Xenon-propane | 18 | 9 | 8 | 1 | +0.12 ± 0.47 |
| Total number of cases | 183 | 76 | 103 | 4 | -0.30 ± 0.15 |

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

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

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

SUBMITTED: July 2, 1960

Card 4/4

KRESTNIKOV, YU.S.

LATHIN, V. V.; ~~KRESTNIKOV, Yu. S.~~; ELIZAVETSKAYA, P. V.; ~~ELIZAVETSKAYA, A. G.~~;
NIKIFOROV, Yu. P.; ~~SHKOLNIKOV, V. A.~~

" π^+ "-Production in the Coulomb Field of Nucleus"

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

Institute of Theoretical and Experimental Physics, Moscow, USSR

BAJMIN, V.V., KRISTINKOV, Yu. S., KUZNETSOV, Ye. V., MENKOVSKIY, A. G., and
SHEBANOV, V. A.

"Search for Resonances in the Reaction of $K\bar{K}$ Pair Production"

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

Inst. of Theoretical and Experimental Physics, Moscow, USSR

S/056/62/043/004/b16/061
B102/B100AUTHORS: Barin, V. V., Krestnikov, Yu. S., Ruznetsov, Ye. V., Mesh-
kovskiy, A. G., Nikitin, Yu. P., Shebanov, V. A.TITLE: $\bar{\pi}^0$ meson production in the nuclear-Coulomb fieldPERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 4(10), 1962, 1223 - 1230

TEXT: To study the mechanism of coherent interaction, in which momentum transfer is very low and nuclear excitation absent, $\bar{\pi}^- + N_Z^A \rightarrow \bar{\pi}^- + \bar{\pi}^0 + N_Z^A$ reactions were examined. They can only occur via interaction with the nuclear Coulomb field, diffractive pion "dissociations" being strongly forbidden. Only one pion dissociation experiment is hitherto known (Baldassarre et al. Nuovo Cim. 21, 459, 1961). Using a 2-liter xenon bubble chamber and 2.8 Bev/c $\bar{\pi}^-$ mesons from the proton-synchrotron of the OIYaI about 10,000 stereophotographs were obtained, and a similar number with a freon chamber: 48 and 31 events of $\bar{\pi}^-$ scattering through $3-30^\circ$ accompanied by two electron-positron pairs were found respectively. After kinematic ana-

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π^0 meson production ...

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B102/B180

lysis, there remained 25 and 13 events which could be attributed to the $\bar{\pi} + \text{Xe} \rightarrow \bar{\pi} + \pi^0 + \text{Xe}$ reaction. This is $(3.7 \pm 1.3) \cdot 10^{-3}$ of the total number of inelastic interactions, the cross section of which was 1200 mb, from which the pion dissociation cross section was found to be $\sigma_c = 4.4 \pm 1.6$ mb. Recording efficiency was taken into account. There was a sharp peak at $\theta < 10^\circ$ in the angular distribution of this reaction. For σ_{ph} the mean cross section of the photoprocess $\gamma + \bar{\pi} \rightarrow \bar{\pi} + \pi^0$, 0.6 ± 0.2 mb was obtained using the relation $\sigma_c = 7.5 \sigma_{ph}$. It holds for the energy range $4m^2 \leq w^2 \leq 21m^2$, where m is the pion mass and w the center-of-mass total energy of the pions produced in the photoprocess. There are 3 figures and 1 table.

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

SUBMITTED: May 17, 1962

Card 2/2

S/056/62/043/004/061/061
B104/B186

AUTHORS: Barmin, V. V., Krestnikov, Yu. S., Kuznetsov, Ye. V.,
Meshkovskiy, A. G., Shebanov, V. A.

TITLE: Search for resonances of $K^0\bar{K}^0$ pair production reactions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 4(10), 1962, 1564-1565

TEXT: $K^0\bar{K}^0$ pair production processes with 2.8 Bev/c π^- -mesons in Freon and xenon bubble chambers had been studied by Ye. V. Kuznetsov and I. Ye. Timoshin (PTE, 4, 40, 1959) and G. A. Blinov et al. (PTE, 1, 35, 1958). In these studies 38 and 13 events respectively of $K^0\bar{K}^0$ pair production were observed. To find possible resonances in the $K^0\bar{K}^0$ system the distribution of the pairs detected over their effective masses was now constructed (Fig. a). The error in the masses is approximately ± 25 Mev. The broken lines indicate the boundary values of the $m(K^0\bar{K}^0)$. The distribution has a peak at $m(K^0\bar{K}^0) = 1275$ Mev but the statistical reliability of this is very low. It was shown that the hypothesis of the decay of a σ_0 -meson according to the scheme $\sigma_0 \rightarrow K^0 + \bar{K}^0 + \pi^0$ could be completely

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Search for resonances of ...

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B104/B186

refuted. A total of nine events was detected in which two K^0 -mesons departed without any charged particle or quantum. These events can be interpreted according to the reaction $\pi^- + p \rightarrow K^0 + \bar{K}^0 + n$. In this case the effective mass of $\bar{K}^0 + n$ can be determined from the momentum and angle of departure of the K^0 -meson (Fig. b). The peak at 1715 Mev has little statistical reliability so the resonances can only be supposed. There is 1 figure. ✓

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

SUBMITTED: July 17, 1962

Card 2/2

BARMIN, V.V.; KRESTNIKOV, Yu.S.; KUZNETSOV, Ye.V.; MESHKOVSKIY, A.G.;
NIKITIN, Yu.P.; SHEBANOV, V.A.

Generation of π^0 -mesons in the Coulomb field of the nucleus.
Zhur. eksp. i teor. fiz. 43 no.4:1223-1230 0 '62. (MIRA 15:11)

1. Institut teoreticheskoy i eksperimental'noy fiziki
AN SSSR.

(Mesons)
(Bubble chamber)

BARMIN, V.V.; KRESTNIKOV, Yu.S.; KUZNETSOV, Ye.V.; MESHKOVSKIY, A.G.;
SHEBANOV, V.A.

Search for resonances in the reaction of $K^0\bar{K}^0$ pair
production. Zhur. eksp. i teor. fiz. 43 no.4:1564-1565
0 '62. (MIRA 15:11)

1. Institut teoreticheskoy i eksperimental'noy fiziki.
(Mesons)
(Nuclear reactions)

S/056/63/044/002/052/065
B184/B102

AUTHORS: Barmin, V. V., Krestnikov, Yu. S., Kuznetsov, Ye. V.,
Meshkovskiy, A. G., Nikitin, Yu. P., Shebanov, V. A.

TITLE: New data on π^0 meson production in the nuclear Coulomb field

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
no. 2, 1963, 748 - 749

TEXT: The present article is a continuation of experimental studies (ZhETF, 43, 1223, 1962) on the reaction $\pi^- + Xe \rightarrow \pi^- + \pi^0 + Xe$, observed in a xenon bubble chamber bombarded by pions of 2.3 Bev/c. 25 events had been found on scanning about 10,000 stereophotographs. Now another 15,000 stereophotographs were scanned four times and 53 π^0 production events were found. Since $d\sigma/d\Omega = f(\theta)$ tends to zero with $\theta \rightarrow 30^\circ$, the reaction cross-section was determined from the values obtained for $30^\circ \leq \theta \leq 30^\circ$, and $\sigma_c = 2.65 \pm 0.90$ mb was obtained; θ is the angle of π^- emission. The inelastic scattering cross-section was taken as 1200 mb. From this result also the cross-section $\bar{\sigma}_p$ of the reaction $\gamma + \pi^- \rightarrow \pi^- + \pi^0$ was estimated; assuming $\sigma_c/\bar{\sigma}_p = 7.5$, a value of 0.35 ± 0.12 mb was obtained for $\bar{\sigma}_p$. There are Card 1/2