MAKSIMADZHI, Aleksandr Isaakovich; NOVIKOV, Oleg Aleksandrovich;
        SOKOLOV, Lev Georgiyevich; KOROTKIN, Ya.I., kand. tekhn.
        nauk, retsenzent; CHUVIKOVSKIY, G.S., inzh.; LIOK, E.I.,
        red.

        [Low-alloy steel in shipbuilding] Nizkolegirovannaia stal'
        v sudostroenii. Leningrad, Sudostroenie, 1964. 299 p.
                                        (MIRA 18:1)

CHEVIKOVSKIY, G.S., inzh.

Conditions for impactless sailing of vessels in waves. Sudostroenie no.6:30-41 S '65. (MIRA 18:8)

ZVYAGIN, Aleksandr Dmitriyevich; SHABAROV, Vladimir Vasil'yevich;
    KRUPITSKIY, E.Z., inzh., retsenzent; CHUVIKOVSKIY, G.S., inzh.
    retsenzent; BOCHKOV, B.F., kand. tekhn. nauk, nauchn. red.;
    VLASOVA, Z.V., red.

[Testing the strength and vibrations of ships on underwater
wings] Ispytaniia prochnosti i vibratsii sudov na podvod-
nykh kryl'iakh. Leningrad, Sudostroenie, 1965. 211 p.
                                        (MIRA 18:11)

CHUVIKOVSKIY, V.S.

SOLOMENKO, N.S.; CHUVIKOVSKIY, V.S.; SHAROV, Ya.F., redaktor;
KURDYUMOV, A.A., professor, doktor tekhnicheskikh nauk.

[Structural mechanics of ships] Stroitel'naia mekhanika ko-
rablia. Pod obshchei red. IA.F.Sharova. Leningrad, Gos.
nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry.
[Leningradskoe otd-nie] 1954. 415 p.   (MLRA 7:7)
     (Naval architecture) (Structures, Theory of)

CHUVIKOVSKIY, V., kandidat tekhnicheskikh nauk.

A valuable book on the vibration of a vessel. Mor. i rech. flot.
14 no.12:p 3-4 of cover D '54.   (MLRA 8:1
    (Ships--Vibration)

CHUVIKOVSKY, V. S., V. F. BEZUKLADOV, C. S. CHUVIKOVSKY, and SHEVANDIN, E. N.

"Fatigue of Shipbuilding steels and the Strength of Ship Structures"
a paper presented at International Conference on Fatigue of Metals, London,
Sep 56.

DSI. No. 103

CHUVIKOVSKIY, V.S.,kand.tekhn.nauk

Local strength of ship structural components subjected to
vibration stresses. Trudy NTO sud.prom. 7 no.2:283-294
'57.   (MIRA 12:1)
                    (Ships--Vibration)

BEZUKLADOV, V.F., kandidat tekhnicheskikh nauk; CHUVIKOVSKIY, G.S., inzhener;
CHUVIKOVSKIY, L.S., kandidat tekhnicheskikh nauk; SHEVANDIN, Ye.M.,
kandidat tekhnicheskikh nauk.

Fatigue of shipbuilding steels and strength of ship structures.
Sudostroenie 23 no.2:1-8 F '57.   (MLRA 10:5)
            (Steel, Structural--Fatigue)
            (Ships, Iron and steel)

CHUVIKOVSKIY V.S.

CHUVIKOVSKIY, V.S., kand.tekhn.nauk

Calculating forced vibrations in hull plate overlaps. Sudostroenie 23 no.9:16-18 S '57. (MIRA 10:12)
(Hulls (Naval architecture)) (Vibration (Marine engineering))

CHUVIKOVSKIY, V.S., kand.tekhn.nauk.

Natural vibrations of shell plating considering frame torsion.
Sudostroenie 23 no.12:12-14 D '57.   (MIRA 11:2)
             (Vibration (Marine engineering))
             (Deformations (Mechanics))

SHIMANSKIY, Yu.A., akademik, red.; SLEPOV, B.I., red.; LOKSHIN, A.Z.,
red.; TAUBIN, G.O., red.; CHUVIKOVSKIY, G.S., red.; CHUVIKOVSKIY,
V.S., red.; LUCHININOV, S.T., otv.red.; OSVENSKAYA, A.A., red.;
KONTOROVICH, A.I., tekhn.red.

[Handbook on structural mechanics of ships] Spravochnik po
stroitel'noi mekhanike korablia. Leningrad, Gos. soiuznoe izd-vo
sudostroit. promyshl. Vol.2. 1958. 528 p.   (MIRA 12:1)
        (Shipbuilding)   (Strains and stresses)

CHUVIKOVSKIY, V.S., referent; NOVOZHILOV, V.V., referent; PERNIK, A.D.,
    referent; YEGOROV, I.T., referent; TITOV, I.A., referent;
    FIRSOV, G.A., referent; BOYTSOV, G.V., inzh.; BASIN, A.M., referent

Scientific engineering conference on hydromechanics and structural
mechanics of ships. Sudostroenie 24 no.7:86-87 Jl '58. (MIRA 11:9)
            (Naval architecture--Congresses)

CHuVIKoVSKIy, U.S.

16(1),10(2)   PHASE I BOOK EXPLOITATION   SOV/2659

Akademiya nauk SSSR. Institut mekhaniki

Inzhenernyy sbornik, t. 25 (Engineering Symposium, Vol. 25) Moscow, Izd-vo
AN SSSR, 1959. 218 p. Errata slip inserted. 2,200 copies printed.

Ed.: A.A. Il'yushin; Ed. of Publishing House: D.M. Ioffe; Tech. Ed.:
Yu. V. Makmud.

PURPOSE: This book is intended for applied mathematicians, physicists and
engineers.

COVERAGE: The book is a collection of articles published by the Department of
Engineering Sciences of the Institut mekhaniki (Institute of Mechanics) of
the Academy of Sciences, USSR. The articles discuss various aspects of the
mechanics of materials and of fluid mechanics, such as stress and bending of
beams, shells, plates and rods, supersonic gas flows, vibrations, etc. The
problems are treated in a highly theoretical, i.e., mathematical, manner.
References are given at the end of each article.

Grigor'yev, A.S. On Plates of Equal Resistance to Bending   45

Sheremet'yev, M.P. Bending of an Infinite Plate Which Is Weakened
by an Elliptical Hole, and the Edge of Which Is Reinforced by a Thin Ring   51

Alekseyev, S.A. Design of a Circular Elastic Membrane Under Uniform
Lateral Load   62

Ovchinnikov, I.A. Lateral Vibrations of Rods and Plates With Reactive
Tensile Forces   81

Stepanov, R.D. On the Flutter of Cylindrical Shells Moving in a Gas   90

Lur'ye, A.I. Stability of a Fastened Shell in a Supersonic Flow   101

Kurdin, N.S. Bending of a Partially Loaded Rectangular Plate With
Two Supported and Two Free Edges   104

Kordakis, A.I. A Method of Solving Systems of Five-Termed Algebraic
Equations Pertaining to Certain Problems of Engineering Mechanics   111

Bychko, I.G. On the Stresses of a Weighable Anisotropic Semiplane
Weakened by Two Circular Holes   112

Teodorov, N.D. Stressed State of a Multiply-Connected Semiplane Caused
by Its Pressing in of Pins   135

Goliteripakov, Ya.D. Certain Problems of the Stability of Thin
Cylindrical Shells   145

Belash, P.A., and N.N. Leontiyev. Design of a Spherical Shell Supported
by a Foundation   153

Vrublevskiy, S.V. On the Stability of a Rectilinear Form of the
Equilibrium of an Elastic Compressed Twisted Rod   162

Loshkin, V.A. A One-Dimensional Problem of the Temperature Stresses
in a Plastic-Elastic Medium   171

Masyev, A.Ye. A Study of Heat-Exchange in Supersonic Air Flows
in Pipes   177

Tur'yev, I.M. Approximate Solution of the Fundamental Boundary Value
Problem of a Supersonic Gas Flow   188

Sushkova, Ye.K. Flow of Liquid to a Vertical Fissure With Filler   197

Ezyukov, Y.A. On the Displacement of a Water-Oil Contact
in Formations With Bottom Water   200

DAVYDOV, Vadim Vasil'yevich, prof., doktor tekhn.nauk; MATTES, Natal'ya
Viktorovna, prof., doktor tekhn.nauk; CHUVIKOVSKIY, V.S., kand.
tekhn.nauk, retsenzent; NOVITSKIY, D.I., dotsent, red.; VITASH-
KINA, S.A., red.izd-va; YERMAKOVA, T.T., tekhn.red.

[Structural mechanics of a ship. Dynamic stress calculations]
Stroitel'naia mekhanika korablia. Dinamicheskie raschety.
Moskva, Izd-vo "Rechnoi transport," 1959. 378 p.   (MIRA 13:2)
    (Marine engineering)   (Ships--Hydrodynamics)

AUTHOR: Chuvikovskiy, V. S. (Leningrad)   SOV/179-59-3-11/45

TITLE: Flexural-torsional Vibrations of Non-prismatic Beams,
            Allowing for Energy Dissipation and for Deformation by
            Shear Forces (Izgibno-krutil'nyye kolebaniya
            neprizmaticheskikh balok s uchetom deformatsiy sdviga
            ot pererezyvayushchikh sil i rasseivaniya energii)

ABSTRACT: The paper is a continuation of earlier work (Ref 12).
          The flexural-torsional vibrations of beams (turbine
          blades, wing systems, ships' hulls) have been discussed
          in several works (Refs 1-3). It is assumed that when
          the beam vibrates in a liquid, the system can be dealt
          with by adding to the mass of the beam a certain mass
          which can be found from linear hydrodynamic relationships
          (Refs 4-6). In the present work, the internal resistance
          of the material is allowed for by introducing a complex
          elasticity modulus E and shear modulus G given by:

Card 1/2 $E = E_o(1 + i\omega\varepsilon)$, $G = G_o (1 + i\omega\gamma)$ (1.1)

SOV/179-59-3-11/45

Flexural-torsional Vibrations of Non-prismatic Beams, Allowing for
Energy Dissipation and for Deformation by Shear Forces

where E_o and G_o are the moduli neglecting internal
resistance and ε and χ are resistance coefficients.
To simplify the problem, the beam is regarded as a hinged
system of discrete masses (a Hencky hinged chain). This
implies replacement of the differential equation by a
finite difference equation and formal solutions are
obtained of the difference equations. The paper is
purely mathematical, and there are no numerical examples.
There are 2 figures and 12 references, 8 of which are
Soviet and 4 English.

SUBMITTED: October 17, 1958

Card 2/2

24(6)

AUTHOR: Chuvikovskiy, V. S. (Leningrad)

TITLE: On Forced Vibrations of Supporting Coverings in the Presence of
             Energy Scattering

ABSTRACT: N. N. Babayev (Ref 1) considered the influence of internal re-
             sistance on the vibrations of the simplest covering consisting
             of a large number of equal crossbeams and one stringer. This re-
             sult is generalized here for a more complicated construction of
             a ship's hull. It is assumed that not only an internal but also
             an external resistance are present. The calculation consists
             of three parts: calculation of the loaded crossbeams on the
             assumption that they are resting in the nodal points on firm
             supports, and calculation of the support pressures; calculation
             of the covering under stress by the support pressures and the
             external exciting forces but without considering the loads on
             the crossbeams; the resulting motion of the covering is found
Card 1/2   by adding the results of the above-mentioned calculation. As

On Forced Vibrations of Supporting Coverings in the   SOV/179-59-4-29/40
Presence of Energy Scattering

the first and third stages of calculation cannot present any
difficulty, only the second stage is investigated here and cal-
culation is pointed out. The physical meaning of the solution
given here lies in the circumstance that the crossbeams are re-
placed by a continuous elastic energy-scattering surface. But
the rigidity and the parameters of the resistance in the elastic
surface are not only different for every stringer but also for
each sound of the free vibrations of the respective stringer.
The solution of N. N. Babayev (Ref 1) is obtained for the special
case of one stringer. Finally, the vibration of a covering rest-
ing in the point (x_0, y_0) on an elastic support with a certain
rigidity is investigated. Cases with several elastic supports can
be investigated in a similar way. There are 5 Soviet references.

SUBMITTED: October 17, 1958

Card 2/2

CHUVIKOVSKIY, V.S. (Leningrad)

Lateral vibrations of rods and plates in the presence of reactive
tensile stresses. Inzh. sbor. 25:81-91 '59.

(MIRA 13:2)

(Elastic rods and wires--Vibration)
(Elastic plates and shells--Vibration)

CHUVIKOVSKIY, V.S., kand. tekhn. nauk

Forces causing localized vibration in bottom structures.
Sudostroenie 25 no.6:13-15 Je '59.   (MIRA 12:9)
(Ships--Vibration)

S/179/60/000/03/035/039
E081/E441

AUTHOR: Chuvikovskiy, V.S. (Leningrad)

TITLE: Non-Linear Vibrations of Beam Constructions

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, Nr 3, pp 176-180 (USSR)

ABSTRACT: The paper is a continuation of previous work (Ref 2). An algorithm is suggested for calculating the steady forced lateral vibrations of beams and beam constructions in which the bending and shear rigidities of each section depend on the magnitude of the deformation (the material does not obey Hooke's law, the effective moment of inertia and plane sections of the beam change with deformation). The construction may be supported on an elastic foundation and on elastic supports with non-linear rigidity characteristics. The algorithm is based on the general method of residues (Ref 1) and involves the successive introduction of elements of mechanical systems with inertialess elastic connections. The recurrence relations of the algorithm are convenient for calculations on electronic digital machines.

Card 1/3

S/179/60/000/03/035/039
E081/E441

Non-Linear Vibrations of Beam Constructions

A clamped beam (Fig 1) may be represented as a hinged
system with discrete masses to which the equations,
p 176, apply; c_j, e_j, k_j are the rigidities of the
hinges and elastic connections simulating the bending
and shear rigidities, and the rigidity of the elastic
foundation over the section j, m_j is the mass,
I_{mj} the moment of inertia of the mass of the section
about the neutral axis, EI and $G\Omega$ the rigidities of
the beam in bending and shear, x_j the coordinate of
the section, y_1 and y_2 the bending and shear
deflections, $k(x, y_1 + y_2)$ the rigidity of the elastic
foundation. The vibration of the beam is discussed in
section 2 assuming the exciting force varies as $\sin \omega t$,
and Eq (2.5) derived for the internal shearing force N_1
and bending moment M_1 (δ_j and φ_j are the
deformations of the connections e_j and c_j respectively),
In section 3, the response of the system is considered
to a driving force containing a component proportional
to $\sin 3\omega t$, as well as the $\sin \omega t$ component. Section 4
Card 2/3   deals with the modifications required if the resistances

S/179/60/000/03/035/039
E081/E441

Non-Linear Vibrations of Beam Constructions

are inelastic and section 5 with the generalization
to a frame construction (Fig 3), each junction of
which is formed by joining two beams. There are
3 figures and 5 references, 4 of which are Soviet and
1 German.

SUBMITTED: January 14, 1960

Card 3/3

CHUVIKOVSKIY, V.S. (Leningrad)

Combines vibrations of a ship's hull with those of its separate components. I_{zv}.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.4- 93-98 Jl-Ag '60.   (MIRA 13:8)
          (Ships--Vibration)

YAKOVLEV, Yuriy Sergeyevich; FOMIN, P.F., inzh.-vitse-admiral,
retsenzent; CHUVIKOVSKIY, V.S., kand. tekhn. nauk, retsenzent;
PATRASHEV, A.N., doktor tekhn. nauk, prof., zasl. deyatel'
nauki i tekhniki RSFSR, nauchnyy red.; FOMICHEV, A.G., red.;
KOROVENKO, Yu.N., tekhn. red.

[Hydrodynamics of explosions] Gidrodinamika vzryva. Leningrad,
Sudpromgiz, 1961. 312 p.   (MIRA 15:4)
   (Shock waves)   (Explosions)

Chuvi'koosky, U.S.

BOROVSKIY, P. V. *1)*

PHASE I BOOK EXPLOITATION   SOV/6 206 *75*

Konferentsiya po teorii plastin i obolochek. Kazan', 1960.

Trudy Konforentsii po teorii plastin i obolochek; 24-29 oktyabrya
1960. (Transactions of the Conference on the Theory of Plates
and Shells Held in Kazan', 24 to 29 October 1960). Kazan',
[Izd-vo Kazanskogo gosudarstvennogo universiteta] 1961. 426 p.
1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial. Kazanskiy
gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina.

Editorial Board: Kh. M. Mushtari, Editor; F. S. Isanbayeva, Secretary;
N. A. Alumyae, V. V. Bolotin, A. S. Vol'mir, N. S. Ganiyev,
A. L. Gol'denveyzer, N. A. Kil'chevskiy, M. S. Kornishin,
A. I. Lur'ye, G. N. Savin, A. V. Sachenkov, I. V. Svirskiy,
R. G. Surkin, and A. P. Filippov. Ed.: V. I. Aleksagin;
Tech. Ed.: Yu. P. Semenov.

PURPOSE: The collection of articles is intended for scientists and
engineers who are interested in the analysis of strength and
stability of shells.

Card 1/14

Transactions of the Conference (Cont.)   SOV/6206   75

COVERAGE: The book is a collection of articles delivered at the
   Conference on Plates and Shells held in Kazan' from 24 to 29
   October 1960. The articles deal with the mathematical theory
   of plates and shells and its application to the solution, in
   both linear and nonlinear formulations, of problems of bending,
   static and dynamic stability, and vibration of regular and
   sandwich plates and shells of various shapes under various
   loadings in the elastic and plastic regions. Analysis is made
   of the behavior of plates and shells in fluids, and the effect
   of creep of the material is considered. A number of papers
   discuss problems associated with the development of effective
   mathematical methods for solving problems in the theory of shells.
   Some of the reports propose algorithms for the solution of problems
   with the aid of electronic computers. A total of one hundred
   reports and notes were presented and discussed during the con-
   ference. The reports are arranged alphabetically (Russian) by
   the author's name.

Card 2/14

Transactions of the Conference (Cont.)   SOV/6206

Card 12/14

CHUVIKOVSKIY, V.S. (Leningrad)

Forced vibrations of simply connected chain-type mechanical systems with nonlinear resistances. Izv.AN SSSR.Otd.tekh.nauk. Mekh.i mashinostr. no.2:158-160 Mr-Ap '62.   (MIRA 15:5)
(Chains—Vibrations)

CHUVIKOVSKIY, Vladislav Sergeyevich; NOVOZHILCV, V.V., nauchn.
red.; OSVENSKAYA, A.A., red.

[Principles of dynamics in the structural mechanics of a
ship] Printsipy dinamiki v stroitel'noi mekhanike korablia.
Leningrad, Izd-vo "Sudostroenie," 1964. 191 p.
                                        (MIRA 17:7)

DAVYDOV, Vadim Vasil'yevich; MATTES, Natal'ya Viktorovna;
KURDYUMOV, A.A., doktor tekhn. nauk, retsenzent;
CHUVIKOVSKIY, V.S., doktor tekhn. nauk, retsenzent;
TRYANIN, I.I., kand. tekhn. nauk, dots., red.;
VITASHKINA, S.A., red.

[Dynamic strength calculations of ship structures] Dina-
micheskie raschety prochnosti sudovykh konstruktsii.
Izd.2., perer. i dop. Moskva, Transport, 1965. 316 p.
(MIRA 18:5)

CHUVIKOVSKIY, V.S., doktor tekhn. neuk

Basic directions of development and problems of the structural
mechanics of a ship. Sudcstroenie 30 no.11:6-11 N '64.
(MIRA 18:3)

PALIY, O.M., kand. tekhn. nauk; CHUVIKOVSKIY, V.S., doktor tekhn. nauk

Influence of structural and technological factors on the strength
and efficiency of hull structures. Sudostroenie 30 no.11:18-
24 N '64.   (MIRA 18:3)

ACC NR: AP6021545   (A)   SOURCE CODE: UR/0198/66/002/006/0049/0054

AUTHOR: Pally, O. M. (Leningrad); Chuvikovskiy, V. S. (Leningrad)

ORG: none

TITLE: Elastoplastic axisymmetric bending of a circular cylindrical shell

SOURCE: Prikladnaya mekhanika, v. 2, no. 6, 1966, 49-54

TOPIC TAGS: cylindric shell structure, shell deformation, elastic deformation, plastic deformation

ABSTRACT: A method is proposed for determining the axisymmetric elastoplastic deformations of circular cylindrical shells of constant and variable thickness. All basic calculations used in the method are given. The method, called the generalized method of initial parameters, permits reducing the solution of the boundary-value problem to a Cauchy problem where the totality of known and variable quantities of forces and strains play the role of the initial conditions. The problems of a semi-infinite shell of constant thickness rigidly restrained on a membrane and loaded by a triaxial pressure and deformation of a semi-infinite shell of constant thickness loaded on the free edge by a moment uniformly distributed along the perimeter are examined as an example. The proposed approach is applicable in principle not only to

Card 1/2

L 41149-66

ACC NR: AP6021545 O

cylindrical but also to any other shells of revolution exposed to axisymmetric loads. In this case the general algorithm of the calculation is retained and only the expressions for the increment of forces, strains, and displacements are changed. Orig. art. has: 4 figures and 12 formulas.

SUB CODE: 13/ SUBM DATE: 20Jul65/ ORIG REF: 003/

Card 2/2 LC

KUDRYA, N.A., inzh.; CHUVILIN, A.M., inzh.; PESKOV, B.A., inzh.; CHEKULAYEV, P.G., inzh.; SOVETOV, G.A., inzh.

Testing a new boring bit for sinker hammers. Gor. zhur. no.9:51-52 S '65.   (MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov, Moskva.

MANUSADZHYAN, V.G.; ZYAKUN, A.M.; CHUVILIN, A.V.; VARSHAVSKIY, Ya.M.

Use of the mass spectrometric method for studying the
derivatives of amino acids and smaller peptides. Part 2:
Mass spectrometric analysis of ethyl esters of N-acylpeptides.
Izv. AN Arm.SSR.Khim.nauki 17 no. 2:143-155 '64. (MIRA 17:6)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN
SSSR.

L 3081-66   EWT(m)/EWP(t)/EWP(b)   JD

ACCESSION NR: AP5023997

UR/0020/65/164/002/0305/0306
539.374+539.379.4

AUTHOR: Bochvar, A. A. (Academician); Pshenichnov, Yu. P.; Chuvilina, I. N.

TITLE: On the growth of deformation twins

SOURCE: AN SSSR. Doklady, v. 164, no. 2, 1965, 305-306, and insert facing p. 306

TOPIC TAGS: twinning, bismuth, zinc, metal crystal, compressive stress

ABSTRACT: To check the hypothesis that the growth of deformation twins occurs during the load removal and reloading, the sample under load was observed directly in the course of the entire experiment. A microscope was attached to a Brinell press, which served to compress the samples at room temperature. The samples consisted of cast macrocrystalline samples of zone-refined Bi (>99.999%), commercial Bi (>98.5%), and Zn (>99.99%). It was noted that twins were formed in zone-refined Bi as soon as the maximum specified compressive load was reached (110 kg; equivalent to a stress of 1.2 kg/mm^2). Twins appeared in zone-refined Bi at loads 1.5 to 2 times smaller than in commercial Bi, and their growth rate was faster. Certain twins, formed at a given load did not show any further growth either during cyclic

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L 3081-66

ACCESSION NR: AP5023997 3

loading or when the load was increased; this was particularly apparent in the com-
mercial Bi. Results of direct observations of the development of deformation twins
were compared with changes in the size of twins subjected to cyclic loading with a
constant maximum load. In all metals, the appearance of new twins, an increase in
the size of old ones, and fusion of the twins were observed. It is concluded that
under prolonged loading, the observed growth of twins does not occur when the
maximum constant load is acting, but rather during periods when the stress condition
changes, i.e., when the load is temporarily removed or brought back up to its pre-
vious value. Orig. art. has: 3 figures.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steel and
Alloys)

SUBMITTED: 12Jun65   ENCL: 00   SUB CODE: MM, SS

NO REF SOV: 002   OTHER: 000

Pure metal

Card 2/2

CHUVILINA, L. B.

(1)

15746d

AUTHORS: Zhigach, K. F., Luft, D. B., Finkel'shteyn, N. Z.,
Goloshchapova, I. S., Zh_____ K. I., Chuvilina, L. B.

TITLE: Investigation of aqueous _____ _____ stabilized by
carboxy-methyl cellulose for electrophoretic _____

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 5, 1962, 528 - 53_

TEXT: The effect of several physicochemical characteristics of sodium
carboxy-methyl cellulose (Na-CMC) on the efficiency of a stabilizer for
aqueous suspensions of alumina for electrophoretic coating was studied.
The sedimentation stability of the suspension is raised with increasing
degrees of polymerization, etherification, and Na-CMC concentration in the
suspension. Greater thickness of coatings is obtained with an increasing
degree of polymerization of Na-CMC, while increasing etherification results
in thinner coatings. The homogeneity of coatings improves with a lower
degree of polymerization, and a higher degree of etherification and raised
concentration. The anodic gas evolution, which is very detrimental to the
quality of coatings, increases with etherification and raised concentration.

Card 1/5

Investigation of aqueous alumina...

in the suspension, and is reduced by an increasing degree of polymerization. The resistance of coatings to 0.05 N [illegible] increases with concentration, degree of polymerization, and ethe[illegible] of [illegible]. [illegible] microscopic measurements showed that the stabilizing [illegible] is based on the adsorption of high-molecular [illegible] (a [illegible]) [illegible] particles, and on the formation of [illegible] products [illegible] which prevent the joining of the individual [illegible]. The b[illegible] [illegible] obtained by stabilizing the alumina [illegible] with [illegible] having a degree of polymerization of 500-[illegible] and a degree of [illegible] of 70-80 in a concentration of 0.5-0.[illegible] of the [illegible] phase. [illegible] results were used in developing a new industrial technique of producing electrophoretic insulating coatings from [illegible] as [illegible] parts of electron tubes. Thus, the use of [illegible] and [illegible] [illegible] and of nitrocellulose can be abandoned. There are 2 figures and 1 table. The English-language reference is: L. R. [illegible], [illegible], [illegible] 78, 402, 1954.

ASSOCIATION: Moskovskiy institut [illegible] technology i [illegible] [illegible] in. I. M. Gubkin ([illegible] [illegible] [illegible] [illegible] Industry imeni I. [illegible] [illegible])

Card 2/[illegible]

S/056/62/043/003/005/063
B125/B102

AUTHORS: Ivanovskaya, I. A., Kuznetsov, Ye. V., Prokesh, A.,
              Chuvilo, I. V.

TITLE: Angular distribution of decay products from Λ-hyperons
              produced by 2.8 BeV/c π^--mesons acting on xenon nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
              no. 3 (9), 1962, 765-774

TEXT: The asymmetry coefficients for the angular distribution of the
decay products of Λ^- hyperons were determined from 360 reliably
identified Λ-particles and from 70 cases (Λ or K^0) imperfectly deter-
mined. These particles were produced by negative 2.8 BeV/c pions on
xenon nuclei according to $\pi^- + p \rightarrow K^0 + \Lambda$. The relation $\alpha P_1 = 0.27 \pm 0.12$
holds for the up - down asymmetry with respect to the plane of production
of the Λ-particles at momenta from 400 to 900 Mev/c in the coordinate
system of Fig. 2. α characterizes the degree of parity non-conservation
in the Λ-particle decay. With

Card 1/4

Angular distribution of decay ... .

S/056/62/043/003/005/063
B125/B102

$\alpha = -0.75^{+0.15}_{-0.50}$ the value $\bar{P} = 0.36^{+0.18}_{-0.22}$ is deduced for the polarization $\bar{P}$ averaged over the production angle. The transverse polarization depends on the momentum of the Λ-hyperon in the laboratory system and perhaps changes its sign at the momenta >900 Mev/c. Owing to this low polarizability, heavy nuclei cannot be used as targets for the production of polarized particles. Systematic errors, difficult to control (being perhaps of the same order as the effect itself), make it more difficult to draw exact conclusions as to the amount of $\alpha \bar{P}_2$. This amount characterizes the forward-backward asymmetry. For all Λ-particles produced according to $\pi^- + Xe \rightarrow \Lambda + K + Xe' + n\pi$, perhaps $\alpha \bar{P}_3 = 0$. The quantity $\alpha \bar{P}_3$ characterizes the right - left asymmetry. Xe' denotes the secondary nucleus and $n\pi$ are the accompanying pions. With $\varphi_\Lambda < 26°$ the asymmetry $\alpha \bar{P}_3$ is non-zero for all Λ with any momentum. There are 3 figures and 1 table.

Card 2/0

Angular distribution of decay ...   S/056/62/043/003/005/063
                                                     B125/B102

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki
                 Akademii nauk SSSR (Institute of Theoretical and
                 Experimental Physics of the Academy of Sciences USSR).
                 Ob"yedinennyy institut yadernykh issledovaniy (Joint
                 Institute of Nuclear Research)

SUBMITTED: March 27, 1962

Table: dependence of the asymmetry coefficients on momentum (in Mev/c)
and the emission angle of the Λ-particle in the laboratory system.

Card 3/3

CHUVILKIN, M.P.

Measures for economizing electric power in pump installations. Prom.
Energ. '52, No.7, 7-10.   (MLRA 5:7)
(EBA 56, no.666:2574 '53)

1. CHUVILKIN, M.P.

2. USSR (600)

4. Heating From Central Stations

7. Selecting screen pumps for large heating installations, Eng. M.P. Chuvilkin, Elek. sta. 24 no. 3, 1953.

9. **Monthly** **List** **of** **Russian** **Accessions**, Library of Congress, __AHRIL__ 1953, Unclassified.

CHUVILKIN, M.P.

CHUVILKIN, M. P. -- "Investigation of Systems and Regimes of Operating Regional Boiler Rooms and the Outlook for Their Development." Published by the Min Communal Economy RSFSR. Academy of the Communal Economy imeni K. D. Panfilov. Moscow, 1955. (Dissertation for the Degree of Candidate in Technical Sciences.)

So; Knizhaya Letopis' No 3, 1956

CHUVILKIN, M.P., kandidat tekhnicheskikh nauk.

Improvements in the design of district boiler installations.
Gor. khoz. Mosk. 29 no.4:13-16 Ap '55.

(MLRA 8:6)

1.Akademiya kommunal'nogo khozyaystva imeni K.D.Pamfilova.
(Moscow--Hot-water heating)

Chuvilkin, M.P.

CHUVILKIN, M.P.

Using district boilers in the heating system of Moscow. Gor. khoz.
Mosk. 32 no.2:21-23 F '58.   (MIRA 11:1)

1. Starshiy nauchnyy sotrudnik Akademii kommunal'nogo khozyaystva.
   (Moscow—Heating from central stations)   (Boilers)

SOV/96-58-11-20/21

AUTHOR: Chuvilkin, M.P., Candidate of Technical Science

TITLE: In the State Scientific Technical Committee of the
             Council of Ministers of the USSR (V Gosudarstvennom
             nauchno-tekhnicheskom komitete soveta ministrov SSSR)

PERIODICAL: Teploenergetika, 1958, Nr 11, p 94 (USSR)

ABSTRACT: The State Committee has set up a commission on
             district heating to develop suggestions and
             recommendations for the development of district
             heating and centralised heat-supply, the development
             of new types of equipment and district-heating
             systems and the reduction of capital and operating
             costs. The Chairman of the Commission will be
             S.F.Kop'yev, Doctor of Technical Science, and it will
             include: N.K.Gromov, Candidate of Technical Science;
             V.K.Iyuskin, Doctor of Technical Science;
             A.N.Kuranov, Engineer; L.A.Melent yev, Doctor of
             Economic Science; A.A.Nikolayev, Engineer;
             V.B.Pakshver, Candidate of Technical Science;
Card 1/3   Ye.Ya.Sokolov, Doctor of Technical Science;

SOV/96-58-11-20/21

In the State Scientific Technical Committee of the Council of
Ministers of the USSR

M.P.Chuvilkin, Candidate of Technical Science (Secretary);
Ye.O.Shteyngauz, Candidate of Technical Science;
Ye.P.Shubin, Engineer (Assistant Chairman); and
L.K.Yakimov, Doctor of Technical Science.
S.V.Byvshev, Engineer, will take part in the work of
the commission as representative of the State Scientific
Technical Committee. Work of the commission will be
based on already completed research and design work.
An important task will be to settle disputed questions
in district heating and to make recommendations. The
first tasks to be completed in 1958 are: to seek the
main directions of development and improved
effectiveness of district heating for industrial and
communal requirements; to determine the most
economic types of heat- and electric power-stations
and to determine rational circuits for heating
systems and heat-line construction. The work of

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SOV/96-58-11-20/21

In the State Scientific Technical Committee of the Council of
Ministers of the USSR

the commission will be reported in technical
periodicals. Suggestions are invited.

Card 3/3

SOV/143-59-3-20/20

8(6), 14(6)

AUTHOR: Chuvilkin, M.P., Candidate of Technical Sciences

TITLE: Concerning I.N. Butakov's Paper "The Problem of
             Centralized City Heating During the Present Phase
             of Power Engineering Development" (Po povodu stat'i
             I.N. Butakova "K voprosu o teplofikatsii gorodov na
             sovremennom etape razvitiya energetiki")

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy – Energetika,
             1959, Nr 3, pp 154-156 (USSR)

ABSTRACT: The author presents a critical review of Professor I.
             N. Butakov's paper "The Problem of Centralized City
             Heating During the Present Phase of Power Engineering
             Development", published in "Izvestiya vysshikh ucheb-
             nykh zavedeniy – Energetika", 1958, Nr 1. He states
             that Professor I.N. Butakov did not consider the
             amount of electric power generated by a TETs, which
             is of great importance in evaluating the economical
             efficiency of the latter. Further, I.N. Butakov did
             not consider the significance of increasing the ini-
Card 1/3   tial steam parameters and reducing the steam extrac-

SOV/143-59-3-20/20

Concerning I.N. Butakov's Paper "The Problem of Centralized City Heating During the Present Phase of Power Engineering Development"

tion pressure at turbines. The author states that the decrease of the economical efficiency of centralized district heating plants is caused at the present time by the lag in introducing new and more efficient equipment at these installations, compared to power plants of large distribution systems, where new equipment has been installed during the past years. Such a comparison leads to a negative evaluation of the economical efficiency of a TETs concerning fuel consumption, capital investments and number of operating personnel. The author states that the primary task of a TETs is the steam supply for district heating and the generation of power is used only for obtaining a considerable fuel economy. According to the investigations of TEP and Giprokommunenergo MKKh RSFSR, it was established that the great majority of USSR towns will be connected to power distribution systems in the near future. Therefore, turbines without condensers, but having multiple steam extraction and vacuum

Card 2/3

SOV/143-59-3-20/20

Concerning I.N. Butakov's Paper "The Problem of Centralized City Heating During the Present Phase of Power Engineering Development"

back pressure must be used in the future. Their capacities should be within the limits of 1.5 to 25 megawatts. The investigations of I.N. Butakov lead to the conclusion that condenser turbines should not be used any longer at TETs. There is 1 graph.

ASSOCIATION: Vsesoyuznyy zaochnyy politekhnicheskiy institut (All-Union Correspondence Polytechnic Institute)

SUBMITTED: February 7, 1959

Card 3/3

CHUVILKIN, M.P., kand.tekhn.nauk, dotsent

Principal type of steam turbines for future thermal electric power
plants. Izv.vys.ucheb.zav.; energ. 4 no.5:48-56 My '61.
(MIRA 14:6)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut. Predstavlena
kafedroy teploenergeticheskikh ustanovok elektricheskikh stantsiy.
(Steam turbines)   (Steam power plants)

CHUVILKIN, M.P., kand.tekhn.nauk

 Optimum parameters and number of bleeders in multiple-bleeder
turbines with vacuum back pressure. Elek. sta. 33 no.7:33-38
Jl '62.   (MIRA 15:8)

<div align="center">(Steam turbines)</div>

KUZNETSOV, V.B.; CHUVILKIN, O.D.

Long-distance transport of electric power. Vest.Mosk.un.Ser.5:
Geog. 20 no.4:80-84 Jl-Ag '65.

(MIRA 18:12)

SHAPOVALENKO, B.I.; SVISTUNOVA, N.M.; CHUVILO, B.V.

Anticorrosion technique in the production of synthetic
odorous substances. Masl.-zhir.prom. 26 no.4:37-41
Ap '60.   (MIRA 13:6)

1. Kaluzhskiy kombinat sinteticheskikh dushistykh veshchestv.
        (Kaluga--Odorous substances)
        (Corrosion and anticorrosives)

CHUVILO, I. V.

PA 35/49777

USSR/Nuclear Physics - Cosmic Radiation Aug 48
Nuclear Physics - Counters, Electronic

"Investigation of Heavy Particles in Cosmic Rays
by Means of a Proportional Counter," A. N.
Gorbunov, I. V. Chuvilo, Phys Inst imeni P. N.
Lebedev, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXI, No 6

Describes special counter, with diagram. Gives re-
sults obtained with use of this counter at heights
of 3,860 and 4,700 meters. (two measurements) in
table showing number of double concurrences per
hour. Graphs show absorption of particles generat-
ing nuclear fissions, dependence of the effective

USSR/Nuclear Physics - Cosmic Radia-   Aug 48
                                tion (Contd)

cross section of the absorption of generating
particles upon atomic weight, and number of double
and fivefold coincidences per hour. Submitted by
Acad S. I. Vavilov, 21 Jun 48.

35/49777

CHUVILO, I. [V.]

USSR/Nuclear Physics - Cosmic Rays
                    Absorption, Carbon   1 Aug 49

"Altitude Dependence and Curves of Absorption in Carbon for Particles Generating Pulses in an Ionization Chamber at Altitudes of 3,860 and 4,700 Meters," G. Guro, V. Nikolayev, L. Razorenov, I. Chuvilo, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXVII, No 4

Used a 24-cm diameter spherical ionization chamber filled with argon to a pressure of 4 ats in experiments. Registered pulses of fast-acting counters arranged to register 4- and 7- repeated coincidences. Air layer between the two altitudes was compensated for by a layer of graphite equivalent in mass. Tables show number of pulses in an unshielded chamber and in the chamber when shielded by graphite layers with thicknesses of 64, 128, and 192 g/sg cm. Submitted by Acad D. V. Skobel'tsyn 20 May 49.

PA 3/50T79

CHUVILO, I.V.

1994.   Investigation of the Relationship Between Heavy Particles and
"Special" Showers in Cosmic Rays. A. N. Gorbunov and I. V. Chuvilo.
Doklady Akad. Nauk S.S.S.R. 69, 333-5 (1949) (in Russian).

So-called "special" showers, produced in matter by cosmic rays and
containing high-energy "nucleo-active" particles that produce nuclear
disintegrations, were studied with a double proportional counter
(aluminum cylinder divided in two by an Al longitudinal partition)
and three self-quenching counters arranged in various ways: all
four counters together under Pb; the proportional counter separated from
the outers by a layer of Pb of varying thickness; all four counters
together under Pb, the thickness of the Al partition varying. The
analysis of the pulse coincides recorded by the instrument showed
that the pulses in the proportional counter were produced: (1) in
75% of all cases, by heavy particles and by nuclear disintegrations
generated in the counter's walls by penetrating particlces; (2) in 5
to 10% of cases, by heavy particles generated in the counter's walls by
"nucleo-active" particles of the "special" showers; and (3) in
15 to 20% of cases, by dense showers of 25 and more particles per
100 cm^2.

CHUVILO, I. V.

Effective cross section for the photofission of uranium
and thorium nuclei. V. A. Korotkova, P. A. Cherenkov,
and I. V. Chuvilo. *Doklady Akad. Nauk S.S.S.R.* 106,
___ (1956). *Soviet Phys. "Doklady"* 1, 77-80 (English
translation). —The relation of the photofission cross section
to the energy of the irradiation was determined experimentally.
The max. values of σ were 8.7 × 10⁻⁵ and 2.6 × 10⁻⁵
sq. cm. for U and Th, resp. The data for U are in good
agreement with previous literature data (Haxby, *et al.*,
_._, 35, 1311; Charbonier, *et al.*, C.A. 44, 1822).

_____ J. Royter-Leach

Lebedev Physical Institute, Acad. of Sci., USSR.

Chuvilo, I.V.

9618

ENERGY DISTRIBUTION OF URANIUM AND THORIUM γ-RAY PHOTOFISSION FRAGMENTS. V. A. Korotkova, P. A. Cherenkov, and I. V. Chuvilo (Lebedev Inst. of Physics). Doklady Akad. Nauk S.S.S.R. 105, 811-13(1955) Feb. 11. (In Russian)

Energy spectra of natural mixtures of U isotopes and Th nuclei fission fragments studied by γ-radiation bremsstrahlung at maximum energies of 17.7 Mev were investigated on the Lebedev Inst. of Physics synchrotron. A differential momentum ionization chamber filled with A was used for determining the energies and observing the processes of fission. The electronic component of ionization moments produced by photofission fragments in the working area of the chamber was used for the recording. The moments were intensified by a proportional intensifier and was recorded on the film by an oscillograph. The radiotechnical part of installation was similar to the facilities which had been used in previous studies for measuring effective photofission cross sections. The provisional selective scheme recorded only the energies which occurred at the moment of γ-beam passage through the ionization camera. A wire-gauze electrode was installed in front of the collecting electrode of the chamber. The calculation effectiveness of screening by the wire-gauze electrode was about 96%. The results of experiments with U and Th photofission are quantitatively analogous to the data obtained in studies of neutron fission. (R.V.J.)

539.172.5

7687.   THE ENERGY DISTRIBUTION OF THE FRAGMENTS
FROM THE FISSION OF NUCLEI OF THORIUM AND URANI-
UM BY γ-RAYS. V.A.Korotkova, P.A.Cherenkov and L.V.
Chuvilo,
Dokl. Akad, Nauk SSSR, Vol. 106, No. 5, 811-13 (1956). In
Russian.

The γ-rays were bremsstrahlung, of energy up to 17.7 MeV.
The observed asymmetry is compared qualitatively with that
found for fissions induced by the absorption of slow and fast
neutrons.   J.M.Radcliffe

Chuvilo, I.V.

USSR/Nuclear Physics - Nuclear Reaction

C-5

Abs Jour   : Ref Zhur - Fizika, No 1. 1958, 491

Author   : Chuvilo, I.V., Shevchenko, V.G.

Inst   : Physics Institute, Academy of Sciences, USSR

Title   : Angular and Energy Distributions of Protons Formed by Photofission of Be^9 and C^{12}.

Orig Pub   : Zh. eksperim i teor. fiziki, 1957, 32, No 6, 1335-1339

Abstract   : Results are given on the measurement of angular and energy distributions of protons, formed upon photofission of Be^9 C^{12}. The source of gamma-quanta is a synchrotron with $E_{max} = 265$ Mev. The protons were recorded on photographic plates. Analyzing the results obtained, the authors reached the conclusion that in the gamma-quanta energy range of 60 -- 80 Mev, the interaction between the gamma-quanta takes essentially with separate structures, produced with the given nuclei.

Card 1/1

AUTHORS: Chuvilo, I. V., Shevchenko, V. G.   SOV/56-34-3-9/55

TITLE: The Photo-Disintegration of Be^9 and C^{12} by a γ- Bremsstrahlung
             With a Maximum Energy of 44 MeV (Fotorasshchepleniye Be^9 i C^{12}
             tormoznym γ- izlucheniyem s maksimal'noy energiyey do 44 MeV)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958,
             Vol. 34, Nr 3, pp. 593-598 (USSR)

ABSTRACT: This work investigates the angular distributions and the energy
             distributions of the protons which form in the photodisintegra-
             tion of Be^9 by a γ- bremsstrahlung with the maximum energy
             $E_{\gamma max}$ = 44 MeV and in the photodisintegration of C^{12} by a γ- brems-
             strahlung with the maximum energies 3o and 44 MeV. The method of
             these measurements was described already in a previous work
             (reference 1). As target served a graphite plate with a thickness
             of 17 mg/cm^2 and a beryllium plate with a thickness of 15 mg/cm^2.
             The protons were registered in NIKFI   Ya-2-emulsions with 4oo.
             and 5oo μ thickness. First the results obtained for beryllium are
             illustrated in a diagram. The analysis of the angular distribu-
Card 1/4   tions of the groups of photoprotons with different energies speaks

The Photo-Disintegration of Be^9 and C^{12} by a
γ- Bremsstrahlung With a Maximum Energy of 44 MeV   SOV/56-34 -3-9/55

for the fact that not all the here obtained results can be
explained from the aspect of the mechanism of the photoreac-
tions in this interval of photo energies. The angular distribu-
tion of the proton group with the energies 4 - 6 MeV, which was
computed according to the model of the direct interaction of the
γ- quanta with the single nucleons in the nucleus, disagrees with
the experimentally obtained angular distribution. Therefore the
authors computed the angular distribution of the photoprotons in
the transitions of various kinds according to the model of the
resonance theory of the intermediary nucleus. A table gives the
results of these computations for the transitions into the ground
state 2^+ and into the first excited state 3^+ of the forming nucleus
Li^8. In the experimentally ascertained angular distributions the
maximum is at an angle of 50°, i. e. the angular distributions
have a high symmetry with regard to the direction 90° with predomi-
nant forward flying off of the photoprotons in the direction of
motion of the γ-quanta. The here obtained results speak for the
existence of a two-nucleon mechanism of the absorption of the
γ-quanta in Be^9 up to a proton energy of 6 - 9 MeV. Also the
energy spectrum of the photoprotons which originate from Be is
illustrated in a diagram. The analysis of the part of this spec-
trum corresponding to the high energies, also speaks in favour

Card 2/4

The Photo-Disintegration of Be^9 and C^{12} by a
γ- Bremsstrahlung With a Maximum Energy of 44 MeV

of the quasideuteron model. The angular distributions of the
protons, which are obtained from the photodisintegration of C^{12}
by a bremsstrahlung with $E_{\gamma max}$ = 30 MeV and $E_{\gamma max}$ = 44 MeV, agree
with each other. Further results are given and discussed. The ana-
lysis of the results on the photodisintegration of C^{12} does not
make possible a unique choice as yet. But the totality of the
experimental data on the photodisintegration of the nuclei Be^9
and C^{12} speaks in favour of the assertion that the photodisinte-
gration of the light nuclei by the absorption of γ-quants in the
domain of the extremely high resonance takes place with the forma-
tion of an intermediary nucleus. In the decay of the intermediary
nucleus. In the decay of the intermediary nucleus the final nucleus
mainly remains in the ground state. Already at energies of the mag-
nitude 80 MeV the two-nucleon mechanism of the absorption of γ-quanta
by the nuclei is predominant.
There are 7 figures, 1 table, and 4 references, 2 of which are Soviet.

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The Photo-Disintegration of Be^9 and C^{12} by a
γ — Bremsstrahlung With a Maximum Energy of 44 MeV   SOV/56-34-3-9/55

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physical
            Institute imeni P. N. Lebedev of the AS USSR)

SUBMITTED: October 5, 1957.

Card 4/4

AUTHORS: Grishin, V. G., Saitov, I. S., Chuvilo, I. V.   SOV/56-34-5-24/61

TITLE: The Use of the Optical Model for the Analysis of n-p- and
p-p-Scattering at High Energies (Primeneniye opticheskoy
modeli dlya analiza n-p- i p-p-rasseyaniya pri bol'shikh
energiyakh)

ABSTRACT: The authors analyse the n-p and p-p scattering at energies
above 1 BeV in the laboratory system on the basis of a
nucleon model according to which the nucleon is considered
as an optically homogeneous sphere with sharp boundaries and
with a complex refraction index. It is assumed that the in-
coherent elastic scattering may be neglected. The available
experimental data that concern the cross sections of scatter-
ing for high energies (including the total cross sections σ,
the cross sections σ and σ_i of the elastic and inelastic
cross section of p-p and n-p interactions) are compiled in
a table. The parameters of the optical nucleon model which
are to be determined from the experimental data, are the radius

Card 1/4

The Use of the Optical Model for the Analysis of π-p- and p-p-Scattering at High Energies

SOV/56-34-5-24/61

K of the homogeneous sphere and their optical characteristics K and k_1. K denotes the absorption coefficient of the medium and k_1 - the change of the real part of the wave vector of the neutron. The available experimental data on π-p and p-p scattering in the BeV energy range can be satisfactorily described by the optical nucleon model if the range of interaction is represented as a homogeneous sphere with sharp boundaries and with a complex refraction index. It is very probable that the radius R of this sphere has the value $R = (1.08 \pm 0.07) \cdot 10^{-13}$ cm which is independent of the type of the interacting particles and also of the energy of these particles. The values of the absorption coefficient K and the contributions of the real part of the scattering amplitude for 3 values of R are compiled. If the energy increases, the contribution of the real part of the scattering amplitude to the cross section of the elastic interaction is diminished. k_1 therefore, diminishes and approaches the limit value zero. In this case the homogeneous sphere became a totally absorbing sphere. For pion energies of 1.37 BeV and protonenergies above BeV the contribution from the real part of the scatter-

Card 2/4

SOV/56-34-5-24/61

The Use of the Optical Model for the Analysis of π-p- and p-p-Scattering at High Energies

ing amplitude is small and for the higher energies the scattering can be analysed on the basis of the general scattering theory (without taking into account the spin characteristics of the interaction) or else on the basis of a purely absorbing sphere. At high energies of the colliding particles the total cross sections of the elastic and inelastic interactions of pions and nucleons have equal values. At last the authors thank L. A. Isayeva and L. A. Shustrova who carried out some numerical computations for this paper. There are 3 figures, 4 tables, and 15 references, 4 of which are Soviet.

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

SUBMITTED: December 6, 1957

Card 3/4

The Use of the Optical Model for the Analysis of π-p- and p-p-Scattering at High Energies

SOV/56-34-5-24/61

1. Model nuclei--Applications 2. Particles--Scattering
3. Particles--Energy factors 4. Mathematics--Appliactions

Card 4/4

CHuvilo, I.U.

21(10)

AUTHOR: Lebedenko, M.

SOV/89-7-3-23/29

TITLE: Sixth Session of the Scientific Council of the Joint Institute
              of Nuclear Research

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 3, p 285 (USSR)

ABSTRACT: The sixth session of the Institute mentioned in the title
              took place at Dubna from May 27 to June 2, 1959. It was at-
              tended by the leading scientists of 12 Socialist countries .
              The following were the heads of the delegations present:
              Petrik Pilik (Albania), Georgiy Nadzhakov (Bulgaria), Al'bert
              Konya (Hungary), Le Van Tkhiyem (North Vietnam), Heinz
              Barwich (German Democratic Republic), Tszan' San' Tszyan
              (Chinese People's Republic), Kim Khen Bon (South Vietnam),
              Sodnom Namsrayn (Mongolian People's Republic), Andrey Soltan
              (Poland), Horia Hulubei   (Romania), Čestmir Šimane
              (Czechoslovakia), V. I. Veksler, N. N. Bogolyubov, and V. P.
              Dzhelepov (USSR). Director D. I. Blokhintsev, Vice-director
              Van Gan-Chan and E. Dzhakov alternated   in   the chair.
              Blokhintsev reported on the scientific work performed, the
              results of which were partly published in Geneva and partly
Card 1/2   in Kiyev. Wang Kang-ch'ang gave a report on the development of

Sixth Session of the Scientific Council of the Joint Institute of Nuclear Research   SOV/89-7-3-23/29

international relations. The following of the lectures deliver-
ed deserve special mention: Activation of the proton-synchro-
tron - Wang Kang-chang, I. V. Chuvilo. New decay phenomena
of the π^0-particle (Laboratoriya yadernykh problem - Laboratory
for Nuclear Problems). At the meeting, the introduction of
day-and-night operation of the proton-synchrotron was especial-
ly welcomed. Also the construction of the new accelerator
with spatial variation of the magnetic field was stressed.
There is 1 Soviet reference.

Card 2/2

CHUVILO, Ivan V.

"Pion Total Cross Sections on Protons"

"Hyperon Production by 3-Bev Negative Pions"

"On the Decay Properties of the K_2^o Meson"

paper presented at the Intl Conference on High Energy Physics, Rochester, N. Y. and/or Berkly California, 25 Aug - 16 Sep 1960.

Joint Inst. for Nuclear Reserch, Dubna, USSR

69068

21.5300   S/120/60/000/01/003/051

AUTHORS: Pantuyev, V.S., Khachaturyan, M.N. and Chuvilo, I.V.   E032/E314

TITLE: A Cherenkov Spectrometer for the Measurement of Gamma-ray Energies

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 1, pp 19 - 22 (USSR)

ABSTRACT: A description is given of the construction and the principle of a Cherenkov gamma spectrometer. The spectrometer is designed for gamma-ray energy measurements in the energy interval between 100 MeV and a few GeV. The spectrometer is based on the following principle. The incident gamma quanta form electron-photon showers in a lead-glass "radiator". A considerable fraction of the energy of the shower is absorbed in the latter. The Cherenkov radiation emitted by the charged component of the shower is taken as a measure of the initial energy of the gamma quantum. The spectrometer has been calibrated using mono-energetic electrons in the energy interval between 100 and 130 MeV. Energy resolution of the spectrometer at 200 MeV is $\pm$ 40%. The spectrometer has a 100% efficiency and is linear. Figure 4 shows a

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S/120/60/000/01/003/051
E032/E314

A Cherenkov Spectrometer for the Measurement of Gamma-ray Energies

typical distribution curve obtained with the spectrometer
at 200 MeV. This curve represents the number of pulses ·
per channel as a function of the amplitude of the pulses
(both in arbitrary units). Figure 5 shows the amplitude
of the Cherenkov pulses (in arbitrary units) in the
maximum of the above distribution as a function of the
energy of electrons in the calibration experiments. The
energy (in MeV) is plotted along the horizontal axis. As
can be seen, the relation is linear. There are 5 figures
and 8 references, 1 of which is Italian, 1 Soviet, 1
Japanese and 5 are English.

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

SUBMITTED: December 29, 1958

Card 2/2

Chuvilo, I. V.

24.6210

AUTHORS: Bayukov, Yu. M.; Vorobyev, A. A.; Kim, Ch' in; Kulakov, B. A.; Lyubimov, A.; Matulenko, Yu. A.; Savin, I. A.; Salmov, Ye. V.; Sirmov; P. A.; Chuvilo, I. V.

TITLE: Channel for Antiprotons with a Momentum of 2.8 Bev/c.

TEXT: The authors of the present paper describe a channel built for the investigation of the interaction of antiprotons in a cloud chamber. Antiprotons were produced by 9-Bev protons in a target. Fig. 1 is a schematic representation of the channel described in the following. The antiproton were identified from their velocity ($\beta = 0.95$) by means of three Cherenkov counters, each of which was provided with two photomultipliers ...

Channel for Antiprotons with a Momentum of 2.8 Bev/c.

Angle	target	particle number in the channel	relative number of antiprotons in the beam
$0°$	Be	1000	$(1.05\pm0.15)\cdot10^{-4}$
$7°$	Be	~700	$(1.3\pm0.18)\cdot10^{-4}$
$7°$	Cu	~700	$(2.4\pm0.55)\cdot10^{-4}$

The number of particles recorded in the channel agrees with data concerning...

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Channel for Antiprotons with a Momentum of 2.8 Bev/c.

There are 2 figures, 5 tables, and 4 references: 3 Soviet, 1 Italian, and 1 International (CERN).

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

SUBMITTED: September 3, 1959

Card 3/3

VIRYASOV, N.M.; VOVENKO, A.S.; VOROB'YEV, G.G.; KIRILLOV, A.D.; KIM KHI IN;
    KULAKOV, B.A.; LYUBIMOV, A.L.; MATULENKO, Yu.A.; SAVIN, I.A.; SMIRNOV,
    Ye.V.; STRUNOV, L.N.; CHUVILO, I.V.

Channel for 2.8 Bev/c momentum antiprotons. Zhur.eksp.i teor.fiz.
38 no.2:445-448 F '60.   (MIRA 14:5)

1. O"yedinennyy institut yadernykh issledovaniy.
             (Particle accelerators) (Protons)

CHUVILO, I.V.

    Possible properties of D^0-mesons. Zhur.eksp.i teor.fiz. 38
    no.3:1002-1003 Mr '60.   (MIRA 13:7)

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

24/6900

82597

S/056/60/039/01/05/029
BOO6/B070

AUTHORS: Ivanovskaya, I. A., Kuznetsov, Ye. V., Kalinkina, E. I., Prokosh, A., Sishkov, G. K., Chuvilo, I. V.
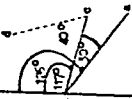
TITLE: A Possible Case of the Disintegration of a Neutral Cascade Meson

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 1 (7), pp. 44-46

TEXT: During the irradiation of a two liter xenon bubble chamber with negative pions (momentum 3 Bev/c) in the ITEF AN SSSR (Institute of Theoretical and Experimental Physics of the AS USSR) 20000 photographs were taken. In their evaluation one was found, represented in Fig. 1, which is assumed to disintegrate according to the scheme $D^0 \to K^+ + \pi^-$. Fig. 2 shows the geometrical scheme of this decay event. The chamber worked without a magnetic field. Identification of the particles was made only according to ionization and multiple scattering. The results of measurement are compiled in a table. In the diagram the path ends are denoted by letters, so that the particle (i.e. the tracks) are described in each case by two letters. Point b lies in the primary pion beam. The

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directions of motion of the particles are denoted by arrows. The mass of particle "bc", which is stopped in the chamber volume, was determined to be (490±190) Mev, which agrees with the mass of the K meson within the statistical error limits. The momentum determination for the "cd" particle gave the value (180±34) Mev/c, which corresponds to a L_2 or K_2

decay. Further considerations showed that the track sequence "bc"..."cd" represents a K^0 meson decay (and not T...Λ...π^0). The "ba" particle of momentum (115±22) Mev/c and mass (195±55) Mev corresponds to a pion or a muon. Since the track ends with a nuclear disintegration, "ba" is considered to be a pion. Some other possibilities of decay modes are discussed, as for example, $K^0_1 n \to nK^+\pi^-$. But, on grounds explained here, they have very small probability. The only probable interpretation of the observed decay remains the mode $D^0 \to K^+ + \pi^-$. The mass of D^0 is taken to be (660±150) Mev and the mode of production is assumed to be $\pi^- + p \to n + D^0$.

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Since a D^+ meson is already known, it may be assumed that, D^-, D^0, and $\bar D^0$ mesons exist, which all decay according to the scheme $D \to K + \pi$. There are 2 figures, 1 table, and 7 references: 5 Soviet, 1 Chinese, and 1 Italian.

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

SUBMITTED: February 15, 1960

Card 3/3

Churilo, I.V.

AUTHORS: Lebedev, R., Smorodinskiy, Ya.,   S/053/60/070/02/009/016
             Tryphin, A.   B006/B007

TITLE: The Physics of Elementary Particles

PERIODICAL: Uspekhi fizicheskikh nauk, 1960, Vol 70, Nr 2, pp 361-374
             (USSR)

ABSTRACT: The authors give a report on the International Conference
             on High Energy Physics held at Kiyev in July 1959.
             D. I. Blokhintsev and I. Ye. Tamm. Two of the seven holders
             of the Nobel Prize represented were Russians: I. Ye. Tamm
             and P. A. Cherenkov. Apart from the surveying lectures
             seminars were held, in which the following Russian lecturers
             spoke: I. Ye. Tamm on "Diagram Technique and Field Theory",
             D. D. Ivanenko on the "Nonlinear Field- and Gravitation
             Theory", V. P. Dzhelepov on "Nucleon-Nucleon Collisions", and
             I. V. Churilo on "Bubble Chambers". The plenary sessions
             began on July 20. In the first session Bernardini (CERN)
             spoke. His scientific secretaries were A. Baldin and A. Belousov
             (Moscow). The report on the lecture mentions the data obtain-
             ed at the Fizicheskiy institut im. P. N. Lebedeva AN SSSR
             (Physics Institute imeni P. N. Lebedev AS USSR) on the "Polar-
             izability of Protons in (γp)-Collisions". B. Pontekorvo
             (Dubna) delivered a lecture, which is discussed here in de-
             tail, on "Pion Scattering by Nucleons and Production of Single
             Pions in Nucleon-Nucleon and Pion-Nucleon Interactions".
             Next, I. I. Yakulev (Dubna) spoke about "Nucleon-Nucleon and
             Pion-Nucleon Interactions in the 1.5 - 10 Bev Range".

OZHDANIY, L.; PANTUYEV, V.S.; KHACHATURYAN, M.N.; CHUVILO, I.V.

The total cross section for interaction of neutrons with protons
at the energy of 8.3 BeV. Dubna, Ob"edinennyi in-t iadernykh is-
sledovanii, 1961. 5 p.   (MIRA 14:11)
                (No subject heading)

CHUYESHKO, K.Ye.

Generalized experimental relationships for calculating doubled direct·
acting steam pumps. Trudy MIIT no.139:271-272 '61.   (MIRA 16:4)

1. Nikolayevskiy korablestroitel'nyy institut.
                    (Pumping machinery)

IVANOVSKAYA, I.A.; KUZNETSOV, Ye.V.; PROKESH, A.; CHUVILO, I.V.

Cross polarization of Λ-hyperons generated by π^--mesons
with a pulse of 2,8 Bev/c on xenon nuclei. Zhur. eksp.
i teor. fiz. 40 no.2:708-709 F '61.   (MIRA 14:7)

1. Ob"yedinennyy institut yadernykh issledovaniy i Institut
teoreticheskoy i eksperimental'noy fiziki AN SSSR.
                    (Mesons)

CHUVILO, I.V., kand.fiz.-mat.nauk (Moskva)

Bubble chambers. Priroda 50 no. 3:88-90 Mr '61. (MIRA 14:2)
(Ionization chambers)

MUKHIN, A.; SOLOV'YEV, M.; CHUVILO, I.

Tenth International Conference on the Physics of High-energy
Particles. Usp. fiz. nauk 73 no.4:775-790 Ap '61.   (MIRA 14:4)
        (Particles (Nuclear physics)—Congresses)

CHUVILO, I.V.

GRAMENITSKIY, I. M., IVANOVSKAYA, I. A., KANAREK, T., MATVEEV, A. S.,
OKHRIMENKO, L. S., PROKESH, A., STRELTSOV, S. S., TIKHONOVA, L. A. and CHUVILO, I. V.

"Neutral Strange Particles Production on Xenon Nuclei in the 9 Gev/C π^- Meson Beam"

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

Joint Institute for Nuclear Research
Laboratory of High Energies

PANTUYEV, V. S.; KHACHATURYAN, M. N.; CHUVILO, I. V.

"Cross Sections of the Interaction of Neutrons with Protons
and Nuclei in the Energy Interval 2,0 - 8,3 Gev "

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

Joint Inst. for Nuclear Research, Lab of High Energies

S/056/62/042/002/014/055
B102/B138

AUTHORS: Ozhdyani, L., Pantuyev, V. S., Khachaturyan, M. N.,
Chuvilo, I. V.

TITLE: Total neutron-proton interaction cross section at 8.3 Bev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,
no. 2, 1962, 392-394

TEXT: The neutron-proton interaction cross sections at $\bar{E}_{n(lab)} = 8.3^{+1.2}_{-1.3}$ Bev
have been measured in good geometry ($\theta/2 = 0.228^{\circ}$). The neutral beam was
produced in a 10-cm thick Be-target inside the vacuum chamber of the
OIYaI proton synchrotron. The beam had to pass through the 5-cm opening
of a 250 cm long steel collimator (divergency $\leq 0.07^{\circ}$). The gamma
quanta contained in the neutral beam due to π^0 decays were eliminated by
two lead filters, the charged particles by a field of 18,000 oe (Fig. 1).
Apart from these impurities the beam contained only neutrons and a
negligible amount of K^0_2 mesons. The neutron detector consisted of an
anticoincidence scintillation counter, a 10-cm Al converter, three
coincidence scintillation counters and a lead glass Cherenkov spectrometer.
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S/056/62/042/002/014/055
B102/B138

The counting efficiency of the detector was $\sim 1\%$. The monitor was a
telescope of three scintillation counters and an Al converter. The steel
collimator was 18.5 m, and the lead collimator 17.0 m, from the
accelerator target. The p-n interaction was measured in polyethylene
(48.53, 23.66 g/cm^2) and carbon (41.56 and 20.32 g/cm^2) targets; the total
p-n interaction cross section was 41.2 ± 2.6 mb. This value exceeds that
obtained for $E_n = 4.5$ Bev. Academician V. I. Veksler is thanked for
interest and discussions; B. A. Kulakov, Yu. A. Matulenko, M. F.
Likhachev, I. A. Savin, V. S. Stavinskiy, M. D. Shafranov, N. V. Leonov,
V. I. Ivanov, V. F. Kuranov and L. P. Zinov'yev and the accelerator team
for assistance. There are 2 figures and 6 non-Soviet references. The
four most recent references to English-language publications read as
follows: M. E. Low et al. Nucl. Phys. 9, 600, 1959; A. P. Batson et al.
Proc. Roy. Soc. A251, 233, 1959; V. Perez-Mendez et al, Bull. Amer. Phys.
Soc. 4, 253, 1959; A. Ashmore et al. Phys. Rev. Lett., 5, 567, 1960.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Insti-
                tute of Nuclear Research)

SUBMITTED: August 28, 1961

Card 2/2

IVANOVSKAYA, I.A.; KUZNETSOV, Ye.V.; PROKESH, A.; CHUVILO, I.V.

Angular distribution of the decay products of Λ-hyperons produced by 2.8 Bev./c π-mesons on xenon nuclei. Zhur. eksp. i teor. fiz. 43 no.3:765-774 '62.   (MIRA 15:10)

1. Institut teoreticheskoy i eksperimental'noy fiziki AN SSSR i Ob"- yedinennyy institut yadernykh issledovaniy.
        (Hyperons—Decay)   (Mesons)   (Xenon)

S/053/62/076/002/004/004
B117/B104

AUTHOR: Chuvilo, I. V.

TITLE: Resonance interaction of π-mesons with strange particles
               (experimental data)

PERIODICAL: Uspekhi fizicheskikh nauk, v. 76, no. 2, 1962, 329 - 350

TEXT: This is a survey on progress achieved in the field of resonance
interaction of $\pi\Sigma$-hyperons, $\pi\Lambda$-hyperons as well as of π and K-mesons.
An attempt has been undertaken to systematize experimental data and to
gain a better insight into some properties of the afore-mentioned inter-
actions. The experimental data collected refer to the mass of $\pi\Lambda^0$
resonance interaction; resonances in $\pi\Sigma$-interactions; some properties of
the generation of Y_1^x-particles; spin and parity of Y_1^x-particles;

πK-resonance interaction. It is pointed out that the experimental data
available are indicative of the resonance character of interactions taking
place at relative energies of the interacting particles of the order of
magnitude 100 - 300 Mev. On the basis of the half-widths of the mass

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Resonance interaction of...

S/053/62/076/002/004/004
B117/B104

distribution of these particles their lifetime is estimated to be of the order of magnitude of $4 \cdot 10^{-23}$ sec. This is still within the duration of processes caused by strong interactions and means that in studying the properties of Y^x and K^x-particles, the interaction of their decay products with other particles involved in the generation of Y^x and K^x-particles must not be neglected. The following isotopic spins have been found: For Y_1^x-particles 1, for neutral $\pi\Sigma$ resonance interactions 0 and for K^x-particles 1/2. Further experimental data must be collected and analysed as to the decay of free Y_1^x and K^x-particles, before final conclusions can be drawn. Up to now experimental data on spin and parity of $\pi\Sigma$ resonance interactions are not available. The spin of the K^x-particle can either be 0 or 1. Although the studies of the newly observed phenomena are not yet concluded and final conclusions on the properties of resonance states with participation of strange particles cannot yet be drawn, the very fact of their discovery is of utmost importance for the understanding of the properties of elementary particles, their interactions and general laws of nature. There are 15 figures, 2 tables, and 19 references: 5 Soviet and 14 non-Soviet. The three most
Card 2/3

Resonance interaction of...   S/053/62/076/002/004/004
                                     B117/B104

recent references to English-language publications read as follows: R. H.
Dalitz and D. H. Miller, Phys. Rev. Lett. 6, 562 (1961); M. Alston et
al., Phys. Rev. Lett. 6, 300 (1961); M. Taher-Zader et al., Bull. Amer.
Phys. Soc. 6, 510 (1961).

Card 3/3

KARZHAVIN, Yu.A.; CHUVILO, I.V.; KIRILOV, S.S.; INKIN, V.D.; GOLUTVIN, I.A.;
    NEUSTROYEV, V.D.; STEPANOV, V.D.; TULAYEV, B.P.; KOLESOV, I.V.;
    ALMAZOV, V.Ya.; PROKOF'YEV, Yu.P.; SHINAGL, I.

Device for automatic measurement of the coordinates of charged
particle tracks recorded on bubble chamber photographs. Prib.
i tekh. eksp. 8 no.5:54-60 S-O '63.   (MIRA 16:12)

1. Ob"yedinennyy institut yadernykh issledovaniy.

L 10286-63   EPF(c)/EWP(q)/EWT(m)/EDS--AFFTC/ASD--Pr-4--JD

ACCESSION NR: AP3000034   S/0056/63/044/005/1456/1462

AUTHOR: Ivanovskaya, I. A.; Kuznetsov, Ye. V.; Prokesh, A.; Chuvilo, I. V.

TITLE: Production of strange particles by 2.8 BeV/c negative pions on xenon
nuclei

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1456-1462

TOPIC TAGS: Strange particles, production cross sections, negative pions,
LAMBDA hyperons, neutral Kaons, xenon and freon

ABSTRACT: The relative and absolute cross sections were measured for the
different channels of production of strange particles, mainly LAMBDA hyperons
and neutral Kaons, by 2.8-BeV negative pions in a xenon bubble chamber. TEhe
angular and momentum distributions of these particles are also presented. Both
direct particle production and production via short-lived intermediate particles
are included. The experiment was described in detail in a separate article by
the authors (Zhurnal eksperimental'noy i teoreticheskoy fiziki, vol. 43, 765,
1962). The cross section measurement results are tabulated (Enclosure 1). It

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L 10286-63
ACCESSION NR: AP3000034   2

is concluded that reactions differing only with regard to the charge of strange
particles occur with identical intensity. The experimental cross section ratios
are in good agreement with Fermi-model calculations for some cases, and 1.5
times smaller in others. The bulk of the LAMBDA hyperons are emitted backward
within a 154-180° cone in the pion-nucleon center of mass system. The angular
distributions depend only slightly on the strange-particle charge. About 30% of
the LAMBDA hyperons are scattered in the parent nucleus. Comparison of the data
on the neutral Kaon-Antikaon pairs produced in freon and xenon indicates that the
neutral Kaons are scattered considerably less frequently in the nucleus. There
are 3 figures, 5 formulas, and one table.

ASSOCIATION: Institute of theoretical and experimental physics (Institut
teoreticheskoy i eksperimental'noy fiziki); Joint Institute of Nuclear Research
(Ob"yedenennyy institut yadernykh issledovaniy).

SUBMITTED: 17Nov62   DATE ACQ: 12Jun63   ENCL: 01

SUB CODE: PH   NR REF SOV: 007   OTHER: 007

Card   2/3