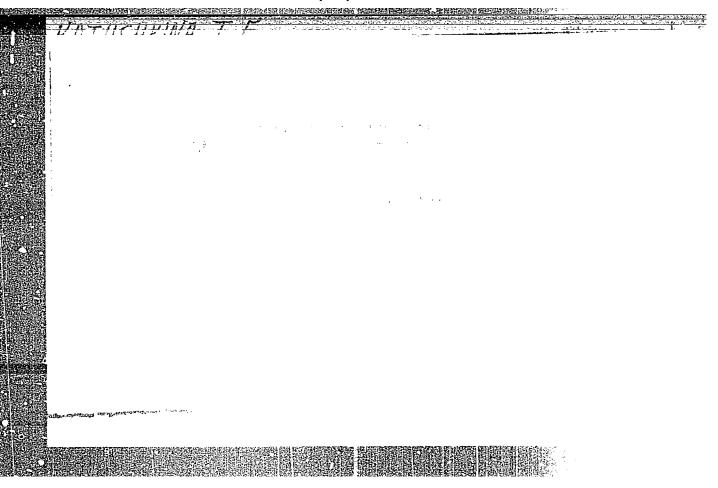BAROCHINA, B.Ya.; KATUSHKIN, V.P.; MINSTER, V.Sh.; PITINOVA, L.V.;
        PANOVA, L.N.; TRUSOVA, T.N.

Testing of a unit for the recovery of carbon disulfide.
Khim. volok. no.4:69-73 '63.   (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusst-
vennogo volokna (for Barochina, Katushkin, Minster).
2. Kalininskiy kombinat iskusstvennogo volokna (for
Pitinova, Panova, Trusova).

KATUSHKINA, I.F.; KOLCHINSKAYA, L.M.; FISHMAN, K.Ye.

Operation of the continuous polymerizing and spinning unit.
Khim.volok. no.6:68-73 '59.   (MIRA 13:5)

1. Kiyevskiy kombinat.
       (Nylon)

KATUSHKINA, V. M.,

V. M. Katushkina, in a paper, "Methods of Power Addition in Ultrashort-Wave Transmitters" considered a method of power addition making use of the principle of a balanced bridge, composed of segments of a concentric line.

Presented at the Eleventh Scientific and Technical Session of the Leningrad Section VTORiE (Scientific and Technical Society for Radio and Electricity) imeni A. S. Popov, dedicated to the celebration of Radio Day, Leningrad, 16-24 Apr 56.

(Radiotekhnika, No.7, 1956)

KATUSHKINA, V. M.

V. M. Katushkina and Z. I. Model', "Bridge method of adding powers of several generators,"
Scientific Session Devoted to "Radio Day", May 1958, Trudrezervizdat, Moscow, 9 Sep 58.

The bridge method of adding powers can be extended to the case of adding the powers
of 2^n generators. In practice, however, addition of power of an arbitrary number of
generators without loss is required. This problem can be solved by using symmetric
multiterminal bridges and an iterated network method based on the principle of successive
power build-up. Analysis shows that the energy indices of all bridge systems are identi-
cal for a change in the generator regions. It follows from an experimental investigation
of multiterminal USW bridges that the most suitable variation is a bridge constructed by
coupling square bridges.
    Iterated network circuits gave positive results when completed in the USW band as
square bridges and as slit waveguide bridges in the microwave band.

KATUSHKINA, V. M., Cand Tech Sci.--(diss)   "Principles of construction
of bridge circuits for combining the power from separately-exerted
generators.   Len. 1958   9pp   (Min of Higher Education USSR.
Len Polytechnic Inst im M. I. Kalinin),   150 copies (IL, 49-58, 123)

9(0)   SOV/112-59-2-3783

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 2,
     pp 223-224 (USSR)

AUTHOR: Katushkina, V. M.

TITLE: Bridge Circuits for Combining the Powers of USW Oscillators
     (Mostovyye skhemy slozheniya moshchnostey UKV-generatorov)

PERIODICAL: Tr. Leningr. politekhn. in-ta, 1958, Nr 194, pp 54-68

ABSTRACT: Peculiarities of bridge circuits with distributed-constant lines
     suitable for meter and decimeter waves are considered. Schemes of combining
     both symmetrical and asymmetrical oscillators are examined. Six versions of
     ring-type circuits consisting of lines of any type are considered. It is noted
     that the best frequency-response characteristics of the ring circuits are
     available when the ratio of the wave impedance to the load impedance is $\sqrt{2}$.
     Frequency response characteristics are presented that allow for matching
     quarter-wave pots and transformer; it is stated that the quarter-wave pots

Card 1/2

SOV/112-59-2-3783

Bridge Circuits for Combining the Powers of USW Oscillators

affect the characteristic but little; major impairment to the characteristic comes from the quarter-wave transformer. A modification of the bridge circuit is examined: a rectangular bridge convenient for constructional realization that does not require arm bending; connection of generators and loads to it does not cause appreciable inhomogeneities. It is shown by analysis that a slit circuit is suitable for combining wide-band oscillators. The following is noted: (1) all above circuits permit addition of oscillator powers with weak couplings between the oscillators; (2) the efficiency is fairly high if a certain ratio between the oscillator voltages is maintained. Symmetrical schemes whose balance is independent of frequency are recommended for combining wide-band oscillators. Bibliography: 6 items.

V. M. L.

Card 2/2

SOV/106-59-7-3/16

AUTHORS: Katushkina, V. I. and Model', Z. I.

TITLE: Bridge Methods of Combining the Powers of any Number of
             U.S.W. Generators and Transmitters

PERIODICAL: Elektrosvyaz', 1959, Nr 7, pp 17 - 25 (USSR)

ABSTRACT: In practice, it is sometimes necessary to combine the
             powers of several U.S.W. generators. For this purpose,
             a method in which the powers are combined in pairs, as
             shown in Figure 1, is described in the technical literature.
             This method enables the powers to be combined without
             loss in balanced impedances but only for $N = 2^n$ genera-
             tors (where n is any whole number) and the number of
             the bridges will be $N-1$. Apart from its awkwardness,
             this method is not suitable for combining the powers of
             any arbitrary number of generators. It is therefore of
             interest to consider the problem of combining the powers
             of any given number of h.f. generators while preserving
             the advantages of the bridge method: absence of coupling
             between the generators and absence of losses in the
             balanced impedances. This problem can be solved in two
             ways: multi-terminal bridge circuits and chain bridge

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Bridge Methods of Combining the Powers of any Number of U.S.W.
Generators and Transmitters

SOV/106-59-7-3/16

circuits. A multi-terminal bridge circuit takes the form
of a single symmetrical device with the number of inputs
equal to the number of combined generators. Such a
bridge, constructed with lumped constants, was described
by Z.I. Model' and A.A. L'vovich (Ref 1). This bridge,
which is a development of a "T" circuit,
can be used for medium and short waves. The chain
principle proposed by V.M. Katushkina is based on the
use of bridges which enable unequal powers of two
generators to be combined. The powers of two generators
can be combined in one bridge section, in the following
section, the combined power of the first two generators
can be combined with the power of a third, and so on
(Figure 2). Combinations of both principles are also
possible.
In the design of any particular bridge circuit, its
parameters must be chosen to meet the conditions for
balance and to obtain a given input impedance. Since in

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SOV/106-59-7-3/16

Bridge Methods of Combining the Powers of any Number of U.S.W.
Generators and Transmitters

operation it should be possible to switch out one or
more of the generators, it is necessary to know what
will be the losses in the balanced impedances in this
case and also what the losses will be when the amplitude
and phase of the generator voltages change. It is also
of interest to know how the bridge device will operate
when the load impedance changes relative to its nominal
value. The authors analyse these problems for bridge
circuits which combine the powers of N u.s.w.
oscillators (or transmitters) with independent excitation.
The Y-form multi-terminal bridge (Figures 4 and 5) was
investigated experimentally at 70 cm wavelength. The
outputs of three generators were combined and the load
and input resistances were 75 Ω . Experience with the
model revealed some disadvantages of this type of bridge:
1) The impossibility of earthing the ballast impedances
complicated the screening.
2) Due to slots at the places where the ballast
resistances were connected to the arms, some mutual
coupling occurred between the generators.

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Bridge Methods of Combining the Powers of any Number of U.S.W.
Generators and Transmitters

To overcome these disadvantages, an additional type of
circuit consisting of a double square (Figure 6) was
designed. This bridge is completely symmetrical relative
to the load impedance, the ballast circuit was divided
into two parts and each impedance was earthed. The
different current paths between the inputs 1 and 2 are either
equal or differ by $\lambda/2$, which gives the necessary phase
relationships for balance. Taking this circuit as a
starting point, a multi-terminal bridge can be constructed
by combining squares (Ref 2). Such a bridge is analysed
and its construction shown in Figures 7 and 8. Although
the circuits examined are, theoretically, balanced at one
frequency only, calculations of the frequency characteristics
showed that the frequency band of the combined square type
is approximately twice as wide as the band of the Y-form
bridge.

Results obtained from an experimental model accorded well
with the calculated results. The field of application of
Card 4/6   these circuits is, however, limited in the number of

SOV/106-59-7-3/16

Bridge Methods of Combining the Powers of any Number of U.S.W.
Generators and Transmitters

generators, their powers and their wavelengths which can
be handled and consequently development of multi-terminal
circuits is not a complete answer to the problems of com-
bining the powers of u.s.w. generators.
The shortcomings of multi-terminal bridge circuits can be
overcome by using the chain principle. Different u.s.w.
bridge circuits can be used: ring; Y-form; slotted
waveguide, etc. (Ref 5).
For metric and decimetric waves, sections having the
square bridge form (Figure 10) are most promising. A
chain circuit using square bridge sections was checked
experimentally for combining the outputs of five generators
and there was very little mutual coupling over 20% of the
frequency band. For waveguide bridge sections, the most
promising are slotted bridges.

Card5/6

SOV/106-59-7-3/16

Bridge Methods of Combining the Powers of any Number of U.S.W. Generators and Transmitters

There are 11 figures and 5 Soviet references.

SUBMITTED: January 16, 1959

Card 6/6

L 43878-66   EWT(d)/EWT(1)/EWT(m)/EWP(w)/EWP(v)/T/EWP(t)/ETI/EWP(k)   IJP(c)

ACC NR: AP6030635   SOURCE CODE: UR/0413/66/000/016/0138/0138
         JD/WW/JG/EM/DJ (A, N)

INVENTOR: Katunin, V. M.; Veklenko, I. A.

ORG: none

TITLE: Linear induction pump for transferring : liquid metals. Class 59, No. 185209.

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 138

TOPIC TAGS: induction pump, liquid metal transfer, liquid metal pumping, liquid
metal pump, LIQUID METAL

ABSTRACT: This Author Certificate introduces an induction pump for liquid metals
which includes conduit and inductors. To use the pump as a dosing device, it is
designed as free-floating with inductors enclosed in an air-tight jacket, which
are placed in such a way that the pump center of gravity is below the center of the
displaced volume. [ND]

SUB CODE: 13/ SUBM DATE: 08Jul63/ ATD PRESS: 5076

Card 1/1   olg   UDC: 621.689-837:669-154

L 08584-67   EWP(j)/EWT(m)   IJP(o)   RM

ACC NR: AR6029467   SOURCE CODE: UR/0196/66/000/006/B005/B005

AUTHOR: Ostryakov, I. A.; Mikulin, A. A.; Katusova, V. K.; Bykov, A. S.

TITLE: New restrictive properties of electric and semiconducting polymer materials

SOURCE: Ref. zh. Elektronika i energetika, Abs. 6B30

REF SOURCE: Nauchno issled. tr. Vses. n.-i. in-ta plenok i iskusstv kozhi, sb. 16, 1965, 132-135

TOPIC TAGS: semiconducting polymer, pressure transducer, electric field, resistant temperature

ABSTRACT: Conducting polymers (CP) are used in the production of electric heaters, pressure sensors, heating elements for special clothing, incubator radiators, etc. The electrostatic charges accumulating on the aircraft surfaces and vehicle bodies may be removed by the CP. Conducting polymers with specific resistance temperature coefficients were made. The polymer conductivity was obtained by using specific filler materials, manufacturing procedures, and additives. The CP exhibit restrictive properties which depend on the pressure applied to the aluminum contacts. The tested samples were shaped as 50x10x1 mm plates. Their composition (by weight) was: acetylene black, 100; caoutchouc SKN-40 rubber, 33; PKhV resin,

Card 1/2   UDC: 669.018.52

L 08584-67

ACC NR: AR6029467

33; polyamide resin, 33; and stearic acid, 1. The plate conductivity increased with an increase in the applied pressure. The restrictive properties of the plate samples were more pronounced when the contact pressure was reduced. A method was developed for measuring the resistance temperature coefficient and other electric properties of the CP by the application of an electric field. [Translation of abstract] Bibliography of 9 titles. L. Yamanova

SUB CODE: 02, 09 / 3

Card 2/2

L ... 32-67   E.T(m)/E.P(j)   1JP(c)   RM

ACC NR: AR6033328 (A) SOURCE CODE: UR/0081/66/000/014/S083/S083

AUTHOR: Ostryakov, I. A.; Mikulin, A. A.; Katusova, V. K.; Bykov, A. S.

TITLE: New rectifying properties of electroconductive and semiconductive polymer materials

SOURCE: Ref. zh. Khimiya, Part II, Abs. 14S580

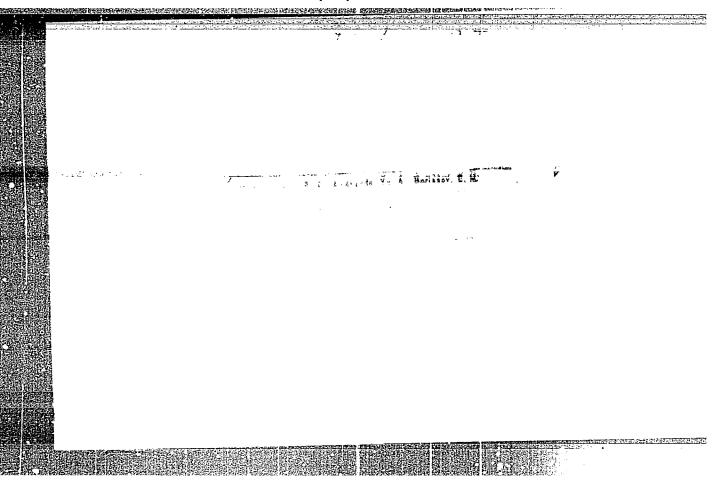REF SOURCE: Nauchno-issled. tr. Vses. n.-i. in-t plenok i iskusstv. kozhi, sb. 16, 1965, 132.135

TOPIC TAGS: semiconducting polymer, electric conductivity, electric field, pressure measuring instrument, rectification

ABSTRACT: Electroconductive polymers exhibit rectifying properties, depending on the pressure of the aluminum contact. For test purposes, film samples 50 x 10 x 1 mm were used consisting of (parts by weight): 100 acetylene black, 33 SKN-40, 33 PVKh, 33 PA, and 1 stearic acid. The electric conductivity of the films increased by increasing the pressure. It is noted that the rectifying properties of film samples increase by decreasing the contact pressure. A method has been developed for changing the temperature coefficient of resistance and other

Card 1/2

L 09432-67

ACC NR: AR6033328

electrical parameters of current-conducting polymer materials by the interaction
with an electric field. This makes it possible to increase the accuracy of readings
of the polymer pressure-measuring instruments and other products of current-
conducting polymer materials. L. Yamanova. [Translation of abstract]

SUB CODE: 11/

Card 2/2

KATUSZEWSKI, Zygmunt

Reform of labor productivity standards.   Przem chem 40 no.8:475-476
Ag '61.

KAT'YANOV, V.; LOS', A.; PROTSENKO, F.; SHARIPOV, S., zasluzhennyy uchitel' proftekhobrazovaniya Tadzhikskoy SSR

News from schools. Prof.-tekh.obr. 19 no.4:32 Ap '62.

(MIRA 15:4)

1. Direktor uchilishcha mekhanizatsii sel'skogo khozyaystva No.3, Yus'vinskiy rayon Permskoy oblasti (for Kat'yanov).
(Vocational education)

KATYK, M.

Interesting features of the type of dwelling found in Slovakia. p. 114.
KRASY SLOVENSKA. Bratislava. Vol. 31, no. 4, Apr. 1954.

SOURCE: East European Accessions List. (EEAL) Library of Congress.
Vol. 5, No. 8, August 1956.

KATYK, S.I.

KZD and KZN seaming machines. Kons. i ov. prom. 13 no.12:15-16
D '58.   (MIRA 11:12)

1.Simferopol'skiy mashinostroitel'nyy zavod imeni Kuybysheva.
        (Canning industry--Equipment and supplies)

DZHELEPOV, B.S.; KATYKHIN, G.S.; MAYDANYUK, V.K.; FEOKTISTOV, A.I.

Spectrum of internal conversion electrons emitted in Re^{184} decay.
Izv. AN SSSR. Ser. fiz. 27 no.11:1394-1401 N '63. (MIRA 16:11)

ROGACHEV, I.M.; CHECHEV, V.P.; KATYKHIN, G.S.

p_o-Transition in Pb^{210} decay. Vest. LGU 18 no.22:92-96
'63.   (MIRA 17:1)

S/048/62/026/008/012/028
B104/B102

AUTHORS: Dzhelepov, B. S., Katykhin, G. S., Maydanyuk, V. K., and
Feoktistov, A. I.

TITLE: The spectrum of internal conversion electrons and positrons
emitted in the Re184 decay

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,
no. 8, 1962, 1030 - 1034

TEXT: This spectrum was studied on the ketron of Kiyev University, using
a spectrometer with a particularly weak background. The source was separat-
ed from a tungsten foil irradiated with 13.6-Mev deuterons. The K783
1-kev line detected by B. Harmatz et al. (Phys. Rev., 123, 1758 (1961))
was not found in the hard part of the spectrum (Fig. 2) because of in-
sufficient resolution. On the other hand the K788 line was found, which is
absent from the Harmatz spectrum because of insufficient intensity. Har-
matz observed the K 1106 line, but not K 1098 which has about the same
intensity as the first-mentioned. The weak continuous electron spectrum
appears distinctly in the range of 300 - 600 kev and disappears at 900 kev.
Card 1/2

S/048/62/026/008/012/028
B104/B102

The spectrum of internal conversion ...

The spectrum is assumed to originate during the decay of Re^{184} into Os^{184}. A weak positron spectrum was also found. Its end-point energy is at about 1500 kev. The decay energy is assumed to be greater than 1320 kev. There are 4 figures and 1 table.

Card 2/2

DZHELEPOV, B.S.; KATYKHIN, G.S.; MAYDANYUK, V.K.; FEOKTISTOV, A.I.

Spectra of internal conversion electrons and positrons emitted in Re^{184} decay. Izv. AN SSSR. Ser. fiz. 26 no.8:1030-1034 Ag '62.

(Rhenium—Decay) (Electrons—Spectra)   (MIRA 15:11)

S/048/63/027/002/002/023
B104/B180

AUTHORS: Dzhelepov, B. S., Katykhin, G. S., Maydanyuk, V. K., and Feoktistov, A. I.

TITLE: The spectrum of Tc^{95} and Tc^{96} conversion electrons

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fiziche ·aya, v. 27, no. 2, 1963, 172-176

TEXT: The spectra of conversion electrons emitted in the decay of long-lived technetium isotopes were studied with the ketron of the Kiyevskiy universitet (Kiyev University). The technetium, obtained by irradiating molybdenum foils with 13.6 Mev deuterons, was radiochemically separated and deposited onto Al foils. The Tc^{95} conversion electron spectrum and the transition energies are given in table 1. With these data and with those of J. Unik and J. Rasmussen (Ref. 4. Phys. Rev., 115, 1687 (1959)) the decay scheme shown in Fig. 2 is obtained. The spectrum was studied 40-60 days after stopping irradiation. Tables 4 and 5 give results for Tc^{96}, for which no decay scheme could be constructed. There are

Card 1/5

The spectrum of Tc^{95} ...

S/048/63/027/002/002/023
B104/B180

3 figures and 5 tables.

Fig. 2. Decay scheme of Tc^{95}.
Legend: (1) 60 days.

Table 1. Transition energies and relative intensities of Tc^{95} conversion electrons.
Legend: (1) E_γ, kev; (2) Type of conversion; (3a) Relative intensities, results; (3b) Results of Ref. 4.

Table 4. Transition energies and relative intensities of conversion lines and γ-radiation.
Legend: (1) E_γ, kev; (2) Relative intensities of conversion lines; (3) Relative intensities of γ-radiation.

Table 5. Internal conversion coefficients (K-shell) and multipole type of transitions in Mo^{96}.
Legend: (1) E_γ, kev; (2) α_K; (3) Possible multipole type.

Card 2/5

L 11050-63   EWT(m)/BDS—AFFTC/ASD—DM

ACCESSION NR: AP3001184   S/0089/63/014/005/0493/0494   53

AUTHOR: Nikitin, M. K.; Katykhin, G. S.

TITLE: Study of ion exchange in solutions of hydrofluoric acid. Separation of RaD, RaE, and polonium

SOURCE: Atomnaya energiya, v. 14, no. 5, 1963, 493-494

TOPIC TAGS: ion exchange, hydrofluoric acid, RaD, RaE, polonium, separation of radioactive elements

ABSTRACT: By using the method described by K. Kraus and F. Nelson (Chemistry of nuclear fuels, Goskhimisdat, 1956, page 353), the authors have determined the distribution coefficients (in equilibrium) of K sub d - lead (RaD) and bismuth (RaE) in the AV-17x14 anionite. The results are presented in a diagram. Based on information thus obtained, the authors suggest a method of separation of RaD, RaE and polonium. It consists of using an ion exchange column, with a subsequent analysis of the Beta spectra of the obtained specimens, using a Beta spectrometer with acceleration and magnetic lens. Orig. art. has: 2 figures.

ASSOCIATION: none

Card 1/1

ACCESSION NR: AP4024458

S/0054/64/000/001/0053/0059

AUTHORS: Anton'yeva, N. M.; Katy*khin, G. S.

TITLE: Sb^{125} radiation

SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 1, 1964, 53-59

TOPIC TAGS: conversion electron, magnetic spectrometer, magnetic spectrograph, neutron irradiation, multiple order transition, beta spectrum

ABSTRACT: The β-spectrum and the spectrum of conversion electrons of Sb^{125} have been studied with the help of a magnetic spectrometer type "Ketron" (B. S. Dzhelepov and A. A. Bashilov. Izv. AN SSSR, ser. fiz. 14, 263, 1950) with 0.5% resolving power and a magnetic spectrograph with 0.15% resolution. Investigation was conducted on a single source specimen, chemically separated and neutron irradiated. Among the various Sb^{125} measurements conducted were: the β-spectrum, K and L conversion spectra, γ-radiation energy, multipole order transitions, and the Sb^{125}-Te^{125} decay process where more precise data were obtained than hitherto possible for the energy of 145, 321.3 and 463.1 kev levels. "The authors are grateful to V. I. Perrimond, A. A. Zhdanov, N. Stegalkina, L. Kolmy*kova and

Card 1/2

ACCESSION NR: AP4024458

Yu. Golubev for their assistance." Orig. art. has: 5 figures, 4 tables, and 1 formula.

ASSOCIATION: none

SUBMITTED: 15Nov62

SUB CODE: PH

DATE ACQ: 16Apr64

NO REF SOV: 006

ENCL: 00

OTHER: 008

Card 2/2

. . . . . . M . Dzhelepov, B. S. (Corres

AN SSSR): Katykhin, ...

. . . . of the decay of Rh-100 . .

SOURCE: AN SSSR, Doklady, v. 159, no. 6, ...

TOPIC TAGS: rhenium, radioactive decay, magnetic spectrometry, gamma transition, gamma gamma coincidence, conver

^{100}

absorption with NaI crystals in a coinci . .

ter product of the decay

Card   1/3

ACCESSION NR: AP5001981

$$Pd^{100} \xrightarrow{3.7d} Rh^{100} \xrightarrow{20.8h} Ru^{100}.$$

The observed transitions were identified by observing the
... the ... the intensities of the ... ...

transition energies and the results of the ...
coincidence spectra are presented. Orig. art. has...

... ...

Zhdanova (Leningrad State University)

Card   2/3

ACCESSION NR: AP5001981

SUBMITTED: 26Sep64   ENCL: 00

SUB CODE: NP   NR REF SOV: 001

Card   3/3

KATYKHIN, G.S.

Use of column partition chromatography for separating
inorganic substances (a survey). Zhur.anal.khim. 20
no.5:615-624 '65.   (MIRA 18:12)

1. Leningradskiy gosudarstvennyy universitet imeni A.A.
Zhdanova. Submitted May 15, 1964.

KATYKHOVSKIY G. F.

1957.   M. H.

KATYKHOVSKIY, G. F.

KATYREV, A.Ye.; KAURTSEV, N.V.;KOZLOVSKIY, A.I., doktor sel'skokhozyaystven-
nykh nauk; KRASIKOV, Z.D., dotsent, kandidat sel'skokhozyaystvennykh
nauk; SOBOLEVSKAYA, K.A.; LYKOV, M.S., redaktor; LISINA, V.M.,
tekhnicheskiy redaktor

[Experience in cultivating corn; based on papers at a province
conference] Opyt vozdelyvaniia kukuruzy; po materialam oblastnoi
konferentsii [Novosibirsk] Novosibirskoe kn-vo, 1956. 226 p.
                                                        (MIRA 9:12)
1. Novosibirskiy sel'skokhozyaystvennyy institut (for Krasikov)
        (Corn (Maize))

KATYS G-1.

K-A-T-Y-S, G.P.

123 - 1 - 253

Translation from: Referativnyy Zhurnal, Mashinostroyeniye, 1957, Nr 1, p. 43 (USSR)

AUTHOR: Katys, G.P.

TITLE: Research in Kinematics and Dynamics of Spatial Crank-gear (Issledovaniye kinematiki i dinamiki prostranstvennogo krivoshipnogo mekhanizma)

PERIODICAL: Dvigateli vnutrennego sgoraniya. Sbornik. Moscow, Mashgiz, 1955, pp. 251-265

ABSTRACT: Theoretical research on the kinematics and dynamics of a mechanism in which the axis of the cylinder is parallel to the axis of the crankshaft is presented. It is stated that use of this mechanism in piston engines instead of the conventional crankshaft and connecting rods assembly may result in higher efficiecy, and a reduction of engine operation costs. The obtained theoretical correlations were experimentally checked on a test model unit. It is stated in conclusion that the mechanism in question has kinematic and dynamic characteristics and that it fully meets the requirements of piston engines.

Card 1/1   G.Ye.M.

KATYT, A. F.

KATYS, G.P.

Instruments for simultaneous measurements of relative distribution
of radiation intensity along a line. Izm. tekh. no.3:5-9 My-Je '57.
(Pyrometers)   (Electronic instruments)   (MLRA 10:8)

7(6), 24(4) , 28(5)   PHASE I BOOK EXPLOITATION   SOV/3304

Katys, Georgiy Petrovich

Opticheskiye datchiki temperatury (Optical Temperature-Sensing
  Devices) Moscow, Gosenergoizdat, 1959. 109 p. (Series:
  Biblioteka po avtomatike, vyp. 6) 15,000 copies printed.

Ed.: M. A. L'vov; Tech. Ed.: P. M. Asanov; Editorial Board of
  Series: I. V. Antik, S. N. Veshenevskiy, V. S. Kulebakin, A. D.
  Smirnov, B. S. Sotskov, Ye. P. Stefani, and N. N. Shumilovskiy.

PURPOSE: The booklet is intended for engineers and technicians
  concerned with problems of automatic checking and regulation of
  temperature.

COVERAGE: The author briefly outlines the basic problems of optical
  pyrometry and the principles of operation of various types of
  pyrometers (radiation, brightness and color pyrometers, and also
  special optical devices) which can be used as optical temperature
  pickups in systems of automatic checking and of automatic regu-
  lation. He examines their basic technical characteristics and

Card 1/3

Optical Temperature (Cont.)   SOV/3304

circuit diagrams. In the final chapters the author examines
briefly some special photoelectric devices intended for measuring
temperatures in high-temperature flames and gaseous media.
Finally, he examines optical temperature scanning pickups (surface-
scanning pyrometers, infrared devices, etc.) which can be used
for checking temperatures in objects having transient temperature
surfaces. The author thanks Professor B. S. Sotskov, Doctor of
Technical Sciences, and Docent A. Ye. Kadyshevich, Candidate of
Physical and Mathematical Sciences, for their help in reviewing
the manuscript. There are 59 references: 39 Soviet, 17
English, 2 French and 1 German.

TABLE OF CONTENTS:

Card 2/3

Optical Temperature (Cont.)   SOV/3304

AVAILABLE: Library of Congress

Card 3/3   JP/mh
                                                3-8-60

PHASE I BOOK EXPLOITATION   SOV/3625

Katys, Georgiy Petrovich

Elementy sistem avtomaticheskogo kontrolya nestatsionarnykh potokov (Elements
  of the Automatic Control System for Unsteady Flows) Moscow, Izd-vo AN SSSR,
  1959. 201 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki.

Ed.: N.N. Shumilovskiy, Doctor of Technical Sciences, Professor; Ed. of Pub-
  lishing House: V.A. Kotov; Tech. Ed.: I.N. Guseva.

PURPOSE: This book is intended for engineering, technical and scientific workers
  concerned with the measuring of unsteady rate of flow and velocity of fluids.
  The book may also be useful to students specializing in control and measuring
  instruments.

COVERAGE: The book describes modern methods and instruments for measuring the un-
  steady flow of fluids. Various methods of automatic control of unsteady flow
  and flow velocity are compared. Some dynamic problems of the measurement of

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Elements of the Automatic (Cont.)   SOV/3625

unsteady parameters are systematically analyzed and generalized in view of
the growing requirements for modern measuring instruments. The author thanks
Professors B.S. Sotskov and N.N. Shumilovskiy, Doctors of Technical Science,
G.G. Yarmol'chuk and N.A. L'vov, Candidates of Technical Sciences, and
Engineer A.L. Malyy. There are 141 references: 76 English, 57 Soviet,
7 French, and one Polish.

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Elements of the Automatic (Cont.)   SOV/3625

AVAILABLE: Library of Congress

Card 5/5

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28(5)   PHASE I BOOK EXPLOITATION   SOV/3122

Katys, Georgiy Petrovich, Candidate of Technical Sciences

Metody i pribory dlya izmereniya parametrov nestatsionarnykh teplovykh
    protsessov; temperatura, davleniye, raskhod (Methods and Instruments
    for Measuring Parameters of Unsteady-state Thermal Processes; Tempera-
    ture, Pressure, and Flow Rate) Moscow, Mashgiz, 1959. 217 p. Errata
    slip inserted. 5,000 copies printed.

Reviewers: N. N. Shumilovskiy, Doctor of Technical Sciences, Professor,
    and A. L. Malyy, Engineer; Ed.: M. A. L'vov, Candidate of Technical
    Sciences; Ed. of Publishing House: M. S. Yeliseyev; Tech. Ed.:
    V. D. El'kind; Managing Ed. for Literature on Machinery and Instrument
    Construction: N. V. Pokrovskiy, Engineer.

PURPOSE: This book is intended for technical personnel dealing with the
    measurement of unsteady-state parameters of thermal processes. It
    may also be of use to students in related fields.

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28(5)

AUTHOR: Katys, G.P.   SOV/115-59-3-26/29

TITLE: The Dynamic Properties of Instruments for Measuring
               Nonstationary Temperatures (O dinamicheskikh kache-
               stvakh priborov dlya izmereniya nestatsionarnykh
               temperatur)

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 3, pp 58-62 (USSR)

ABSTRACT: The author reviews optical devices used for measur-
               ing temperatures of nonstationary flames and gaseous
               media. He bases his review on nine Soviet sources
               and nine English language publications. The author
               does not consider methodic problems of measuring
               nonstationary temperatures which are adequately
               covered in the literature cited /Ref 1-3/. He has
               the opinion that the accuracy of measurements of
               rapidly changing temperatures depends to a consider-
               able degree on the dynamic properties of the photo-
               electric systems which are applied in such devices.
               However, when designing and discussing such equipment,
Card 1/3   these dynamic properties are not considered. There-

SOV./115-59-3-26/29

The Dynamic Properties of Instruments for Measuring Nonstationary Temperatures

fore dynamic errors may attain values commensurable with those of methodic errors and eventually exceed the latter. The author established four groups of pyrometers, whereby he evaluates the dynamic properties of the different types comprised in them. He begins his review with five types of brightness pyrometers and five types of color pyrometers, whose principal systems are shown by figures 1 and 2. The third group comprises three high-speed systems employing spectral lines of an alkali metal which is introduced into the flame /Ref 13-14/. The fourth group comprises systems where the temperature is determined by the intensity of the central part of a saturated spectral line of some alkali metal, for example sodium which is introduced into the flame, with the application of an interferometer. Figure 4 shows the systems of two devices of this typ2 /Ref 1, 3, 17, 18, 19/. The Khar'kovskiy gosudarstvennyy

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The Dynamic Properties of Instruments for Measuring Nonstationary
Temperatures

SOV /115-59-3-26/29

institut mer i izmeritel'nykh priborov (Khar'kov
State Institute for Measures and Measuring Instru-
ments) is mentioned in this connection for having
developed a modulation method for a photoelectric
receiver which permits to measure the intensity of
a spectral line under consideration of its back-
ground noise created by the flame. There are 4 dia-
grams and 19 references, 9 of which are Soviet, 9
English and 1 French.

Card 3/3

PHASE I BOOK EXPLOITATION   SOV/4484

Katys, Georgiy Petrovich

Nekotoryye voprosy avtomaticheskogo kontrolya nestatsionarnykh poley (Certain
    Problems in the Automatic Inspection of Nonstationary Fields) Moscow, Izd-vo
    AN SSSR, 1960. 222 p. Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki.

Resp. Ed.: B.N. Petrov, Corresponding Member, Academy of Sciences USSR; Ed. of
    Publishing House: V.A. Kotov; Tech. Ed.: O.M. Gus'kova.

PURPOSE: This book is intended for scientific and technical personnel working in
    the field of automatic inspection of nonstationary fields.

COVERAGE: The book is described as the first attempt in either Soviet or non-Soviet
    literature to present in a generalized and systematic way methods and systems of
    automatic inspection of nonstationary parametric fields, with emphasis on pyro-
    metric scanning systems. Optical scanning systems and systems with complex pick-
    up connections are reviewed. Television systems which carry out the functional
    generation of transmitted parametric field images are examined, as well as prob-
    lems connected with the determination of scanning system parameters in relation
Card 1/4

Certain Problems (Cont.)   SOV/4484

to field properties. The author summarizes the results of investigations on
automatic scanning used in field inspection which he began in 1953, and dis-
cusses several problems of automatic selection of optimalizing parameters of
scanning devices. The author thanks B.N. Petrov, Corresponding Member, Academy
of Sciences USSR; B.S. Sotskiy and G.M. Ulanov, Doctors of Technical Sciences;
and M.A. L'vov, Candidate of Technical Sciences. There are 99 references:
58 Soviet, 37 English, 3 German and 1 French.

TABLE OF CONTENTS:

Card 2/4

KATYS, Georgiy Petrovich; PETROV, B.N., akademik, otv.red.; KOTOV, V.A.,
red.izd-va; PRUSAKOVA, T.A., tekhn.red.; GOLUB', S.P., tekhn.red.

[Automatic control of nonstationary parameters and parametric
fields] Avtomaticheskii kontrol' nestatsionarnykh parametrov i
parametricheskikh polei. Moskva, Izd-vo Akad.nauk SSSR, 1962.
471 p.
(MIRA 15:2)

(Automatic control)

KATYS, G. P.

Dissertation defended at the Institute of Automation and Telemechanics
for the academic degree of Doctor of Technical Sciences: / 962

"Automatic Control of Nonstationary Fields."

Vestnik Akad Nauk, No. 4, 1963, pp. 119-145

AM4020392   BOOK EXPLOITATION   S/

Katys, G. P.

Methods and systems for automatic control of nonstationary parameters and para-
   metric fields (Metody* i sistemy* avtomaticheskogo kontrolya nestatsionar-
   ny*kh parametrov i parametricheskikh poley) Moscow, Mashgiz, 1963. 358 p.
   illus., biblio. 3700 copies printed. Edited by: Petrov, B. N. (Academi-
   cian); Managing editor: Pokrovskiy, N. V. (Engineer); Editor of the publishing
   House: Baranova, Z. S. (Engineer); Technical editor: Sokolova, T. F.;
   Proofreader: Bakutenkova, A. P.

TOPIC TAGS: automatic control, scanning, display, functional image transforma-
tion, scanning beam, point pickup, temperature field scanning, infrared, radar,
ultrasonic scanning, pyrometers, pressure control, automatic flow control

PURPOSE AND COVERAGE: This book is intended for scientific personnel, engineers,
and technicians in the field of automatic control of nonstationary parameters and
parametric fields, and also for readers interested in problems of scanning and

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AM4020392

display in automatic control. It may be useful also for students in corresponding specialties. Methods of automatic control of thermal-technical parameters (temperature, pressure, and consumption) and the pertinent automatic-control systems are analyzed. Problems of optimum perception of information concerning the state of the parametric field and of optimum presentation of the results of analysis of the state of the field are analyzed in the first part of the book. Here, the method of selecting the optimum trajectory of survey (scanning) of the field developed by the author and the method of functional transformation of the image of the controllable field are outlined. The principle of constructing systems that achieve automatic control of fields with the aid of a scanning beam discernible by a sensing element is outlined and several examples of such systems are analyzed in the second part. The third part is devoted to point pickups and elements of systems. Much of the work presented in this book was done at the Institut Avtomatiki i Telemekhaniki AN SSSR.

TABLE OF CONTENTS:

Card 2/6

KICHKIN, Il'ya Il'ich; KA KEVICH, V.Ye., retsenzent; OSIIOV, L.L.,
retsenzent; KATYS, G.P., doktor tekhn. nauk, red.; KAN,
P.M., red.

[Transducers in marine remote control systems] Datchiki su-
dovyk' sistem distantsionnogo kontrolia. Moskva, Izd-vo
"Transport, 1964. 209 p.   (MIRA 17:8)

KATYS, Georgiy Petrovich; PETROV, B.N., akademik, otv. red.

[Photoelectric scanning devices for search and tracking systems] Skandiruiushchie fotoelektricheskie ustroistva poiska i slezheniia. Moskva, "Nauka," 1964. 149 p.
(MIRA 17:6)

AVEN, O.A.; DVORETSKIY, V.M.; DOMANITSKIY, S.M.; ZALMANZON, L.A.;
    KRASSOV, I.M.; KRUG, Ye.K.; TAL', A.A.; KHOKHLOV, V.A.;
    BULGAKOV, A.A.; DEMIDENKO, Ye.D.; BERNSHTEYN, S.I.; YEMEL'YANOV,
    S.V.; LERNER, A.Ya.; MEYEROV, M.V.; PEREL'MAN, I.I., FITSNER,
    L.N.; CHELYUSTKIN, A.B.; ZHOZHIKASHVILI, V.A.; IL'IN, V.A.;
    AGEYKIN, D.I.; GUSHCHIN, Yu.V.; KATYS, G.P.; MEL'TTSER, L.V.;
    PARKHOMENKO, P.P.; MIKHAYLOV, N.N.; FITSNER, L.N.; PARKHOMENKO,
    P.P.; ROZENBLAT, M.A.; SOTSKOV, B.S.; VASIL'YEVA, N.P.; PRANGISHVILI,
    I.V.; POLONNIKOV, D.Ye.; VOROB'YEVA, T.M.; DEKABRUN, I.Ye.

Work on the development of systems and principles of automatic
control at the Institute of Automatic and Remote Control
during 1939-1964. Avtom. i telem. 25 no. 6:807-851 Je '64.
                                              (MIRA 17:7)

KATYS, Georgiy Petrovich; IL'INSKIY, V.M., red.

[Mass flowmeters] Massovye raskhodomery. Moskva,
Energiia, 1965. 87 p. (Biblioteka po avtomatike, no.124)
(MIRA 18:4)

KATYS, Georgiy Petrovich; TEMNIKOV, F.Ye., doktor tekhn. nauk,
    retsenzent; STREL'NIKOV, Yu.V., inzh., red.; PETROV,B. ,akad.
    red.

[Information scanning systems] Informatsionnye sk. .ru-
iushchie sistemy. red. B.N.Petrova. Moskva machino-
stroenie, 1965. 447 p.   (A 18:12)

KATYS, Georgiy Petrovich; PETROV, B.N., otv. red.

[Systems for the automatic control of velocity fields
and expenditures] Sistemy avtomaticheskogo kontrolia
polei skorostei i raskhodov. Moskva, Nauka, 1965. 463 p.
(MIRA 19:1)

L 27240-66

ACC NR: AP6009894   SOURCE CODE: UR/0413/66/000/004/0086/0086

AUTHORS: Katys, G. P.; Chubarov, Ye. P.   2/
                                                                    B
ORG: none

TITLE: Color scanning pyrometer. Class 42, No. 179034

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 86

TOPIC TAGS: optic pyrometer, photoresistance

ABSTRACT: This Author Certificate presents a color-scanning pyrometer containing an optical part, a radiation receiver, and a radio electronic circuit. To obtain the temperature field of heated surfaces, the pyrometer has a Pekhan prism (or Dove prism) and two sets of point-contact photoresistances. The photoresistances are connected electrically to a cathode ray tube whose screen serves to reproduce the temperature field (see Fig. 1).

Card 1/2   UDC: 536.521.3:621.396.965

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ACC NR: AP6009894

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Fig. 1. 1 - Pekhan prism; 2 and 3 - sets of point-contact photoresistances; 4 - cathode ray tube.

Orig. art. has: 1 diagram.

SUB CODE: 20/ SUBM DATE: 17Nov64

Card 2/2 UC

ACC NR: AM6006276   Monograph   UR/

Katys, Georgiy Petrovich

Automatic monitoring systems for velocity and flow rate (Sistemy avtomaticheskogo
kontrolya poley skorostey i raskhodov) Moscow, Izd-vo "Nauka", 65. 0463 p.
illus., biblio. (At head of title: Akademiya nauk SSSR. Ministerstvo
priborostroyeniya, sredstv avtomatizatsii i sistem upravleniya SSSR. Institut
avtomatiki i telemekhaniki /tekhnicheskoy kibernetiki/) 3,200 copies printed.

TOPIC TAGS: automatic control system, automatic control design, flow rate, flow
measurement, gas flow, liquid flow, flow velocity, flow meter

PURPOSE AND COVERAGE: Automatic velocity monitoring systems, the elements of such
systems, and various methods of scan and probe monitoring of velocities and flow
rates are considered. Various methods and devices for automatic monitoring of non-
stationary liquid and gas flow rates are investigated, mass, turbine, ultrasonic,
induction, thermal, and other flow meters being considered. The range of optimal
utilization of these devices and their measurement accuracy are determined. The
prospective trends in the development of such systems are indicated. New mass flow
meters developed by the author at the Institute of Automation and Remote Control AN
SSSR are considered. Computation methods are presented and design recommendations

Card 1/4   UDC: 681.12+62-50

ACC NR: AM6006276

are given for a majority of the considered classes of flow meters. The author
thanks academician B. N. Petrov for a number of valuable comments made while
reviewing the manuscript. The author also thanks V. M. Il'inskiy and Yu. D.
Mamikonov for help in the development, preparation, and experimental investigation
of a number of new flow meters considered in the book and in collecting and process-
ing the bibliographic material and L. A. Manokhina for help in preparing materials
for the book. The book is intended for scientific and technical engineering workers
occupied with problems in velocity and flow rate monitoring and gas and liquid flow.
It will also be useful for students and technicians of the corresponding specialties.

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Ch. 19. Induction flow meters - - 347
Ch. 20. Nuclear magnetic resonance flow meters - - 379
Ch. 21. Continuous ionization flow meters - - 385
Ch. 22. Thermal flow meters. - - 391
Ch. 23. Devices for discrete monitoring of nonstationary flow using various flow markers - - 418
Bibliography - - 451

SUB CODE: 20, 13/ SUBM DATE: 14Oct65/ ORIG REF: 146/ OTH REF: 125

Card 4/4

ACC NR:AM6015022   Monograph   UR

Katys, Georgiy Petrovich

Information scanning systems (Informatsionnyye skaniruyushchiye
sistemy) Moscow, Izd-vo "Mashinostroyeniye", 1965. 447 p. illus.,
biblio. 2500 copies printed.

TOPIC TAGS: information storage and retrieval, information processing,
quantum oscillator, scanning system, tracking system

PURPOSE AND COVERAGE: This book is intended for engineers and
technicians concerned with the design of scanning systems. It may
also be used by students of corresponding specialties in schools of
higher technical education. The book deals with problems of the
efficient structural design of optical scanning systems for the
examination of a controlled field with the aim of retrieving infor-
mation on its condition. The theoretical problems of designing
optimal scanning systems, taking into account the probable properties
of controlled fields, are discussed. Methods for determining the
parameters of these systems, derived from various optimality criteria,
are described. The principle of the operation design characteristics,
and methods of calculating some elements of optical scanning systems
and their block diagrams are given as well as the basic

Card 1/8   UDC: 621.397.3

ACC NR: AM6015022

characteristics of scanning systems intended for the automation
and control of manufacturing processes in various areas of
industry. Numerous scanning systems developed by the author are
described in the book. No personalities are mentioned. There are
211 references: 79 Soviet and 132 non-Soviet.

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ACC NR: AM6015022

Part Two
Elements of Scanning Systems

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ACC NR: AM6015022

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ACC NR AM6015022

Card 6/8   7

ACC NR: AM6015022

Card 7/8

ACC NR:AM6015022

AVAILABLE Library of Congress

SUB CODE: 09, 17/ SUBM DATE: 15Sep65/ ORIG REF: 083/ OTH REF: 128

Card 8/8

SHAPOVALOV, A., inzh.; KATYSHEV, A.; FIL'KIN, I.; ROVOVOY, D.;
        VASILENKOV, N., slesar'

    Exchange of experience. Avt. transp. 41 no.8:52-54 Ag '63.
                                                (MIRA 16:11)
    1. Khar'kovskiy avtotrest (for Shapovalov).

Catysaev, A. N.; Kurkin,

Card 1/2

ASSOCIATION: Kazanskiy gosudarstvennyy universitet im. V. I. ...

KATYSHEV, D. M.; DRIDZE, S. M.

Use of the new types of synthetic plasticizers in the manu-
facture of artificial leather. Kozh. obuv. prom. 4 no.10:14-15
O '62.   (MIRA 15:10)

(Leather, Artificial)   (Plasticizers)

KATYSHEV, I.M.

Maintenance of electric substations by mechanics on duty at home.
Elek.i tepl. tiaga 5 no.12:15-16 D '61.   (MIRA 15:1)

1. Glavnyy inzh. 5-go uchastka energosnabzheniya Yuzhno-Ural'skoy
dorogi.
                    (Electric railroads--Substations)
                         (Remote control)

KATYSHEV, V.L.

OSINTSEV, Arkadiy Stepanovich; KATYSHEV, V.L., red.; AVRUTSKAYA, R.F.,
red.izd-va; DOBUZHINSKAYA, L.V., tekhn.red.

[Iron industry of the U.S.S.R. on a new upswing] Chernaia metal-
lurgiia SSSR na novom pod"eme. Moskva, Gos. nauchno-tekhn.
izd-vo lit-ry po chernoi i tsvetnoi.metallurgii, 1958. 72 p.
            (Iron industry)   (MIRA 11:5)

KATYSHEV, N.F., inzh.

Drive for the rolls of the MShP-150-1B machine from a
direct current motor. Svar. proizv. no.7:32   Jl '63.
(MIRA 17:2)

ANDREYEV, Viktor Fedorovich, kand. ekon. nauk; BANNYY, Nikolay.
Pavlovich, dots., kand. ekon. nauk; GORELIK, Iosif
Grigor'yevich, dots., kand. ekon. nauk [deceased];
KATYSHEV, Viktor Leonidovich; OBLOMSKIY, Yakov Antonovich,
dots., kand. ekon. nauk; PEKELIS, Isay Borisovich;
PINEGIN, Ivan Ivanovich; PRIYMAK, Ivan Andreyevich, prof.,
doktor tekhn. nauk [deceased]; ROYTBURD, Lazar' Nisonovich,
prof., doktor ekon. nauk; ROMANOVICH, Nikolay Dmitriyevich;
BORDIN, M.M., retsenzent; BRYUKHANENKO, B.A., dots., kand.
ekon. nauk, retsenzent; KHUTORSKAYA, Ye.S., red.izd-va;
KARASEV, A.I., tekhn. red.

[Economics of ferrous metallurgy in the U.S.S.R.] Ekonomika
chernoi metallurgii SSSR. [By] V.F.Andreev i dr. Pod red.
L.N.Roitburda i N.P.Bannogo. Moskva, Metallurgizdat, 1963.
384 p.   (MIRA 16:5)
    (Iron industry)   (Steel industry)

66363

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SOV/120-59-5-6/46

AUTHORS: Golovin, B. M., Dzhelepov, V. P., Katyshev, Yu. V.,
          Konin, A.D. and Medved', S.V.

TITLE: A Ring Target Apparatus for Studying High-energy Small-
          angle Neutron Scattering

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5,
            pp 33-35 (USSR)

ABSTRACT: The authors have measured n,p cross-sections in the
          small-angle range ($35°$ - $5°$ centre of mass system) at
          ~600 MeV (Ref 1). The method used consists in the
          following. To begin with a high-energy neutron beam
          is produced with the aid of an annular brass collimator,
          as shown on the left-hand side of Fig 1. The beam is then
          incident on a toroidal circular target whose central axis
          coincides with the longitudinal axis of the beam. The
          neutron detector is in the form of a neutron telescope
          and can be moved along the symmetry axis of the apparatus.
          The use of a ring target means that it is possible to use
          a larger amount of scattering material than in the usual
          targets. The neutrons are produced by 680 MeV protons
          at an internal target of the synchrocyclotron of the.
    Card1/2 Laboratory for Nuclear Problems of the Joint Institute for

Katyshev, Yu. V.

SOV/56-36-3-12/71

21(7)

AUTHORS: Colovin, B. M., Dehelepov, V. P., Katyshev, Yu. V.,
Konin, A. D., Medved', S. V.

TITLE: The Scattering of Neutrons by Protons in the Region of Small
Angles at Neutron Energies of 590 Mev (Rasseyaniye neytronov
protonami v oblasti malykh uglov pri energii neytronov 590 Mev)

PERIODICAL: Zhurnal experimental'noy i teoreticheskoy fiziki, 1959,
Vol 36, Nr 3, pp 735-750 (USSR)

ABSTRACT: The authors investigated the differential cross section of
n-p-scattering at an average neutron energy of 590 Mev in
the angular range of 5 - 35° for this purpose a special
device with an anular scatterer was developed, which has al-
ready been described in one of the authors' earlier papers
and is described in this paper (Fig 1). Results:

Scattering angle   Relative amount of   n-p-scattering cross
c.m.s.   n-p-scattering cross   section in
                        section   10⁻²⁷cm²/steradian

5   2.7±0.4   10 ± 1.5
8   2.2±0.3   8.2±1.4
11.5   1.7±0.2   6.4±0.9

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The Scattering of Neutrons by Protons in the Region of Small Angles at
Neutron Energies of 590 Mev

23   1.2±0.1   4.5±0.5
35   3.7±0.2

Determination of coefficients in the amplitude equation of
elastic nucleon-nucleon scattering M = a + β(σ₁ + σ₂)n +
+ γ(σ₁n)(σ₂n) + δ(σ₁l)(σ₂l) + ε(σ₁m)(σ₂m). It is possible by
means of experimental investigations. It holds that
dσ(Θ - 0°) = |a|² + |β|² + |γ|² + |δ|² + |ε|² or
Ima(Θ - 0°) = kσ_t(4π, where k denotes the wave number of the
incident nucleon. It holds that σ(Θ - 0°) - [Ima(Θ - 0°)]² -
-|Reα|² + |β|² + |γ|² + |δ|² + |ε|² and by using the experimental
results obtained by the authors it is found that
σ_min(Θ - 0°) - [Ima_np(Θ - 0°)]² - 5.6.10⁻²⁷ cm²/steradian.
Figure 2 shows the energy dependence of Ima(Θ - 0°) for
nucleon-nucleon interaction in the states with isotopic
spin T = 0 and T = 1 with an accuracy of ~10% Apart from a

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SOV/56-36-3-12/71

The Scattering of Neutrons by Protons in the Region of Small Angles at
Neutron Energies of 590 Mev

strong increase of cross sections with a decreasing scatter-
ing angle, there is a predominance of forward scattering. A
cross sections over backward scattering cross sections. A
comparison of the results obtained by means of the optical
theorem shows that it is doubtful whether nucleon-nucleon
scattering at ~600 Mev can be described on the basis of
the opaque nucleon model. There are 2 figures, 2 tables.
and 11 references, 7 of which are Soviet.

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

SUBMITTED: September 3, 1958

Card 3/3

KATYShEV, Yu.V.

24.6600

AUTHORS: Van Gan-chan, Van Tsu-tszen, Din Da-tsao, Ivanov, V. G.,
Katyshev, Yu. V., Kladnitskaya, Ye. N., Kulyukina, L. A.,
Nguyen Din Ty, Nikitin, A. V., Otvinovskiy, S. Z.,
Solov'yev, M. I., Sosnovskiy, R., Shafranov, M. D.

TITLE: Investigation of the Elastic Scattering of π^--Mesons With
a Momentum of 6.8 Bev/c on Protons by Means of a Propane
Bubble Chamber

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 38, No. 2, pp 426-431

TEXT: For the purpose of making a contribution to the problems of proton
structure, the authors investigated the scattering of negative 6.8-Bev/c
pions on protons (wave length λ = 0.112·10^{-13}cm) in a 24-liter propane
bubble chamber placed in a magnetic field of 13,700 oe. The experimental
setup is shown in Fig. 1. The momentum distribution of π^--mesons was de-
termined from 112 investigated tracks, and is shown in Fig. 2. The mean
momentum was (6.8±0.6) Bev/c. A total of 3500 frames was interpreted, and

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Investigation of the Elastic Scattering   82016
of π^--Mesons With a Momentum of 6.8 Bev/c   S/056/60/038/02/17/061
on Protons by Means of a Propane Bubble   B006/B011
Chamber

550 events were selected from all two-pronged stars. The measured values
were processed by an electronic computer. The root-mean-square error in
the angular determination was $\Delta\theta_\pi = 26'$ and $\Delta\theta_p = 1°14'$. The correction
for track curvature did not exceed 20'. The elastic π^-p-scattering events
were identified by the criteria discussed here: Coplanarity (Fig. 3);
angular correlation (Fig. 4); recoil proton range. Among the 550 events
investigated, 218 were regarded as being elastic. Fig. 5 shows the distri-
bution of these 218 events along the chamber axis. In the so-called ef-
fective region of the chamber (43 cm with a total length of 55 cm), 213
out of the 218 events were recorded. The distribution of these 213 events
according to the azimuthal angle of the recoil proton is shown in Fig. 6.
In 113 cases the recoil proton track was on top, in 100 it was below,
in 115 at the left, in 98 at the right. An estimation of the percentage
of quasielastic scattering events in the total number of elastic ones 6%.
The cross section of the reaction investigated was found to be

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$\sigma_{el}(\Theta'_\pi > 6^\circ) = 3.75 \, ^{+0.25}_{-0.55}$ mb, by taking into account a μ^- admixture of

$(5\pm2)\%$, with a total π^- track length of $1.15 \cdot 10^6$ cm. Θ'_π is the scattering
angle in the center-of-mass system. The total π^-p interaction cross section
was estimated as being (30 ± 5) mb. The final part of the present paper
offers an analysis of experimental results on the basis of the optical
model, with the proton being regarded as a homogeneous, sharply bounded
sphere with a radius $R = 1.05 \cdot 10^{-13}$ cm. The nucleonic absorption coefficient
K is assumed to be $K = 0.71 \cdot 10^{13}$ cm^{-1}. Results are compared with those
yielded by experiments (Table, Figs. 7,8). The authors finally thank
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1 table, and 8 references: 2 Soviet and 6 American.

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Investigation of the Elastic Scattering   S/056/60/038/02/17/061
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(Mesons)   (Nucleons)

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