

20119

The problem of making visible ...

S/181/61/G03/G02/017/G50  
B102/B204

assistance. There are 6 figures, 2 tables, and 16 references:  
3 Soviet-bloc and 8 non-Soviet-bloc.

ASSOCIATION: Institut fiziki AN USSR g. Kiyev (Institute of Physics,  
AS UkrSSR, Kiyev)

SUBMITTED: May 9, 1960 (initially) and August 4, 1960 (after  
revision) ✓

Card 4/4

24.7500  
10.9500

30542  
S/564/61/003/000/014/029  
D207/D304

AUTHORS: Belyayev, A. D., Vasilevskaya, V. N., and Miselyuk, Ye. G.

TITLE: The effect of some factors on formation of dislocations during crystallization and the state of dislocations in germanium monocrystals

SOURCE: Akademiya nauk SSSR. Institut kristallografii. Rost kristallov, v. 3, 1961, 380-387

TEXT: The authors report how formation and density of dislocations in germanium monocrystals are affected by the presence and density of dislocations in a seed crystal, the presence of impurities in concentrations greater than their solubility limit, and by the rate of crystal growth. The authors investigated also the effect of subsequent heat treatment on the state of edge dislocations and the effect of dislocation densities from  $10^3$  to  $10^7$   $\text{cm}^{-2}$  on the carrier lifetime in germanium mono-

Card 1/4

30512

S/564/61/003/000/014/029  
D207/D304

The effect of some...

crystals. The purpose of the studies was to obtain germanium monocrystals with a more perfect structure. Monocrystals were grown by pulling from melt in vacuum. In each test special precautions were taken to keep the melt temperature, the rate of pulling, and the rate of rotation of the crucible and the seed crystal as constant as possible (the crucible and the seed were rotated in opposite directions). The rate of pulling was varied from 0.8 to 6 mm/min. Seed crystals contained dislocations with densities ranging from  $10^2$  to  $10^7$   $\text{cm}^{-2}$ . The effect of impurities on formation of dislocations was studied using radioactive tracers  $\text{Sb}^{124}$ ,  $\text{Fe}^{59}$ ,  $\text{Ag}^{110}$ ,  $\text{Cd}^{115}$ ; in the experiments on the effect of impurities, seed crystals had low ( $10^2 - 10^3$   $\text{cm}^{-2}$ ) dislocation densities. Heat treatment of as-grown monocrystals consisted of 1 - 3 hours heating in vacuum at temperatures greater than 700 - 800°C. Lifetimes of nonequilibrium carriers were measured as a function of dislocation density. Dislocation densities were found by 12 min. etching of ground and electropolished (100) and (111) faces in the following solution: 2 parts HF, 2.5 parts

Card 2/4

30542

The effect of some...

S/564/81/003/000/014/029  
D207/D304

$\text{HNO}_3$ , 1 part  $\text{CH}_3\text{COOH}$ , 4 parts  $\text{H}_2\text{O}$ , and 8 mg I per  $50 \text{ cm}^3$  of solution. Etch pits were counted under a metallurgical microscope MIM-8 (MIM-8). It was found that: (1) a high density of dislocations in a seed crystal produced an even higher density in a grown monocrystal; (2) Sb, Fe, Ag and Cd impurities increased dislocation densities in monocrystals and even produced polycrystalline structure if they were present in concentrations exceeding their limit of solubility in germanium; (3) many dislocations were produced if the rate of pulling was greater than 4 mm/min. because temperature gradients were greater at higher pulling rates; (4) annealing monocrystals reduced dislocation densities: in a sample with more than  $10^4$  dislocations per  $\text{cm}^2$  a 50 - 60% reduction was obtained after 3 hours at  $750^\circ\text{C}$  and a 90% reduction after 1 hour at  $900^\circ\text{C}$ ; (5) monocrystals with high dislocation densities had high resistivity and low nonequilibrium carrier lifetime; recombination levels due to dislocations had activation energies of 0.15 - 0.20 eV. Acknowledgment is made to A. N. Kvasnitskaya for preparing germanium samples. There are 4 figures, 1 table and 15 references: 4 Soviet-bloc and 11 non-Soviet-bloc. The

Card 3/4

30542

S/584/61/003/000/014/029  
D207/D304

The effect of some...

4 most recent references to the English-language publications read as follows: G. Wertheim and G. Pearson, Phys. Rev., 107, 694, 1957; A. Kurtz, S. Kulin, B. Averbach, Phys. Rev., 101, 1285, 1956; J. Okada, J. Phys. Soc. Japan, 12, 1338, 1957; W. Tyler, W. Dash, J. Appl. Phys., 28, 1221, 1957. X

Card 4/4

Elh96

S/181/63/005/001/008/064  
B102/B186

AUTHORS: Vasilevskaya, V. N., Miselyuk, Ye. G., and Fortunatova, N.N.

TITLE: Investigation of the structure and some energy characteristics of germanium dendrites

PERIODICAL: Fizika tverdogo tela, v. 5, no. 1, 1963, 52-60

TEXT: Dendrites of pure germanium and of germanium doped with Sb, Au or Ga, were grown from a supercooled melt. They were 200-800μ thick and at most 150 mm high. Dendrites less than 400μ thick exhibited one twin plane, and thicker samples more than one. In the first case, with an even number of twin planes, the main faces were (111) and  $(\bar{1}\bar{1}\bar{1})$ , i.e. dissimilar; in the second case, these faces were also dissimilar for an even number of twin planes, whereas for an odd number of twin planes, they were similar, being either both (111) on the C side or both  $(\bar{1}\bar{1}\bar{1})$  on the IC side, where C and IC stand for "complete" and "incomplete". The dislocation distribution was investigated in the longitudinal and transverse directions. The density of the dislocations proved to be greater in the direction of growth and smaller on the edges; it was several times smaller on the C

Card 1/3 || SEE 181/63/005/001/013/064

S/181/63/005/001/008/064  
B102/B186

Investigation of the structure ...

side than on the IC side. Star-shaped accumulations of dislocations were found in dendrites thicker than  $350\mu$ . Dendrite faces exhibiting equal regularity also have comparable dislocation densities. Impurities in concentrations below the limit of solubility did not affect the dislocation density. The resistivity  $\rho$  and the carrier lifetime  $\tau$  of the dendrites were also measured.  $\rho$  proved to be practically constant when measured along the dendrites but showed 1 or 2 maxima in the transverse direction. On comparing  $\rho(d)$  with the dislocation density  $N_d(d)$  the curves are seen to be mirror images: in the middle of the crystal,  $N_d$  has a broad

maximum and  $\rho$  has a broad minimum. The minimum corresponds to the twin region;  $\rho$  increases rapidly and by a large amount towards the C side, but only a little towards the IC side.  $\rho$  is higher on the C side than the value of  $\rho$  for the unpolished material, but lower on the IC side. Whereas  $\rho$  on the C side differs little from the value for the original matter,  $\tau$  is always smaller. The IC side value of  $\tau$  was more than one order larger than the C side value in alloy crystals, but less than one order larger in pure germanium crystals. The C side values of  $\tau$  were about equal to the value  $\tau_{eff}$ . There are 9 figures and 3 tables.

Card 2/3

Investigation of the structure ...

S/181/63/005/001/008/064  
B102/B186

ASSOCIATION: Institut poluprovodnikov AN USSR, Kiyev (Institute of  
Semiconductors AS UkrSSR, Kiyev)

SUBMITTED: July 16, 1962

Card 3/3



VASILEVSKAYA, V.N. [Vasylevs'ka, V.M.]; DATSENKO, L.I.

Effect of annealing on dislocations in germanium. Ukr. fiz.  
zhur. 8 no.5:569-574 My '63. (MIRA 16:8)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.

BARANSKIY, P.I. [Barans'kyi, P.I.]; VASILEVSKAYA, V.N. [Vasilevs'ka, V.M.]

· Electrophysical properties and structure of dislocation-free germanium crystals. Ukr. fiz. zhur. 9 no.9:956-961 S '64.  
(MIRA 17:11)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.

ACCESSION NR: AT4045012

S/0000/64/000/000/0183/0187

AUTHOR: Vasilevskaya, V.N.; Ye. G. Miselyuk

TITLE: A study of the alloying of germanium with admixtures of certain elements

SOURCE: Soveshchaniye po probleme Izpol'zovaniye atomnoy energii. Kiev, 1961. Radiatsionnaya avtomatika, izotopy\* i yaderny\*ye izlucheniya v nauke i tekhnike (Radiation automation control systems, isotopes, and nuclear radiation in science and technology); doklady\* soveshchaniya. Kiev, Izd-vo AN UkrSSR, 1964, 183-187

TOPIC TAGS: germanium, germanium monocrystal, germanium alloy, silver, iron, tin, antimony, cadmium, tellurium, admixture segregation, admixture solubility, liquation, deliquescence

ABSTRACT: The main purpose of the paper was to study the liquation (segregation) and deliquescence (solubility) of admixtures of Ag, Fe, Sn, Sb, Cd, and Tl in monocrystalline germanium during crystallization. Radioactive isotopes of the elements mentioned were used. Autoradiography and microscopic examination were used, and photomicrographs were taken of samples etched with Perhydrol or with  $\text{HNO}_3 + \text{HF}$ . If  $C_s$  is the content of the admixture in the supercrystallized part of the alloy,  $C_L$  is its concentration in the other part of the alloy,  $M_0$  is the weight of the alloy, and  $M$  is the weight of the remaining

Card

1/4

ACCESSION NR: AT4045012

part of the alloy after a portion of the admixture has penetrated into the crystal, then the equilibrium coefficient  $K_0$  can be obtained from the formula

$$C_s = K_0 C_L \left( \frac{M_p}{M} \right)^{1-K_0} \quad (1)$$

The ratio  $C_s/C_L$  by itself determines the effective liquation coefficient  $K_{\text{eff}}$  of the admixture under the given conditions of crystallization. The dependence of  $K_{\text{eff}}$  on the  $C_s$  of the admixture penetrating the germanium monocrystal during its growth process is shown in graphical form in Fig. 1 of the Enclosure. Photomicrographs of specimens of germanium monocrystals with silver penetration are shown both at the limit of solubility and for the suprasoluble case. The experimental data suggest that the value of  $C_s$  corresponding to the beginning of the sharp increase in the segregation coefficient represents the solubility limit of the element in germanium during crystallization. These values of  $C_s$  for the named elements, and the corresponding values of  $K_0$ , are tabulated and vary from  $1.5 \times 10^{14}$  for Ag to  $6.0 \times 10^{18}$  for Sb. Orig. art. has: 3 figures, 1 table, and 1 formula.

ASSOCIATION: None

2/4

Card

ACCESSION NR: AT4045012

SUBMITTED: 07Jan64

ENCL: 01

SUB CODE: SS

NO REF SOV: 002

OTHER: 000

Card

3/4

ACCESSION NR: AT4045012

ENCLOSURE: 01

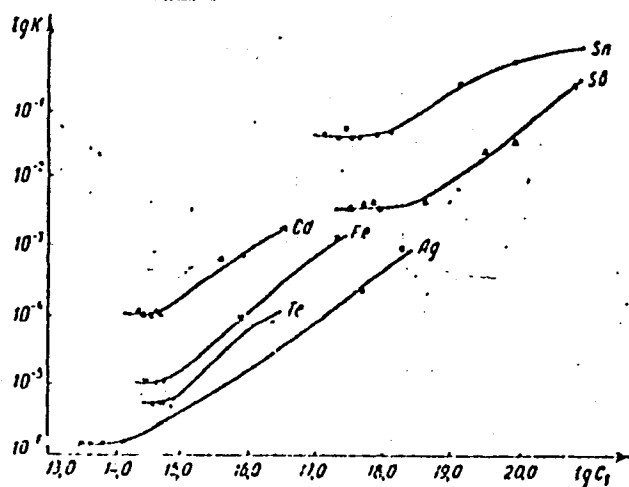


Fig. 1 - Variation in the effective segregation coefficient in relation to the concentration of admixture in the solid phase.

Card 4/4

BEL'GOVSKIY, G.L.; VASILEVSKAYA, Ye.D.

New data on the stratigraphy and tectonics of Paleozoic deposits in the middle course of the Bukhtarma River. Mat.VSEGEI no.9:49-55 '55.  
(Bukhtarma Valley--Geology, Stratigraphic) (MIRA 9:9)

SELEZNEV, A.K.; PRIGORNEV, I.G. Primali uchastiye: YAKOVLEVA, T.P.;  
VASILEVSKAYA, Ye.Ye.

Obtaining  $\beta$ -chloro-ethers from unsaturated hydrocarbons of vapor-  
phase cracking. Izv.vys.ucheb.zav.; neft'i gaz 3 no.3:63-68 '60.  
(MIRA 14:10)

1. Groznenskiy neftyanyy institut i Novogroznenskiy neftepererabaty-  
vayushchiy zavod.

(Ethers) (Cracking process)



VASILIVSKAYA, YU. D.

"Diffusion coefficients for binary mixtures of several hydrocarbons and air."

Report presented at the 1st All-Union Conference on Heat- and Mass- Exchange, Minsk, BSSR, 5-9 June 1961

27866

S/535/61/000/132/012/012  
E030/E484

11,0100

AUTHOR: Vasilevskaya, Yu.D.

TITLE: Investigation of the diffusion coefficient of the system "T-5 vapour - air"

SOURCE: Moscow. Aviatsionnyy institut, Trudy, no.132. 1961. 144-160. Teplofizicheskiye svoystva nekotorykh aviatsionnykh topliv v zhidkom i gazoobraznom sostoyanii.

TEXT: The method of Frank-Kamenetskiy was used over the range from room temperature up to about 420°C, calibrating the apparatus on the system: water vapour - air. Diffusion was studied between a spherical container of molybdenum glass, volume 30 to 50 cc, and a tube attached to it some 17 to 30 cm long, such that the ratio of reservoir volume:tube volume exceeded 6, and the diffusion time  $\tau$  exceeded  $L^2/\pi^2D$ , where  $L$  was the tube length and  $D$  the diffusion constant. Under such conditions one can then work with the steady-state equation:

$$\ln\left(1 - \frac{V_0}{V}\right) = -\frac{D_0}{V_0 L} \tau$$

Card 1/2

27866

S/535/61/000/132/012/012

E030/E484

Investigation of the diffusion ...

where  $V_0$  is the reservoir volume,  $v_0$  the gas effusing in time  $\tau$ , and  $s$  the cross-sectional area of the tube. The calibration data on air-water vapour agreed excellently with the data of K.Rosie (Ref.4: Forschung auf dem Gebiete des Ingenieurwesens, 19, no.2, 1953, p.49) and of Frank-Kamenetskiy and others (Ref.2: Zhurnal tekhnicheskoy fiziki, 1942, v.12, no.1, p.14). For the fuel data were obtained for the different cuts from about 200 to 400°C. The maximum systematic error is about 2.8% and the scatter less than 1.5%. The data for T-5 complete fuel are adequately represented by the equation:

$$D = 0.0287(T/T_0)^{1.96} \text{ cm}^2/\text{sec.}$$

There are 11 figures, 4 tables and 5 references: 2 Soviet and 3 non-Soviet. The reference to an English language publication reads as follows: Ref.3: Lee C.I. and Wilke C.R., Industrial and Engineering Chemistry, vol.46, no.11, 1954, 2381.

Card 2/2

VASILEVSKAYA, Yu. D.

Diffusion coefficients of some binary mixtures of vapors of  
some hydrocarbons and air. Teplo- i massoper, 1:191-195 '62.  
(MIRA 16:1)

1. Moskovskiy aviatsionnyy institut im. Sergo Ordzhonikidze.

(Diffusion) (Hydrocarbons)

VASILEVSKAYA, Yu.D.

Diffusion coefficients of binary mixtures of some hydro-  
carbon vapors into air. Izv. vys. ucheb. zav.; neft' i  
gaz 5 no.1:59-64 '62. (MIRA 16:11)

1. Moskovskiy aviatsionnyy institut imeni Sergo Ordzhonikidze.

VASILEVSKAYA, Z.F., assistant

Effect of increased masticatory pressure on the supporting deciduous teeth and growth of permanent teeth. Stomatologiya no.6:40-43 N-D '54. (MLRA 8:1)

1. Iz kafedry ortopedicheskoy stomatologii (zav.-prof. A.I. Betel'man) i kafedry gistologii (zav.-dotsent V.Ya.Kharupu) Kiyevskogo med. stomatol. instituta (dir.-prof. A.K.Gorchakov)

(TEETH, DECIDUOUS

eff. of masticatory pressure)

(TEETH

growth, eff. of masticatory pressure)

(MASTICATION

masticatory pressure, eff. on deciduous & permanent teeth)

VASILEVSKAYA, Z.F. (Kiyev)

Open-bite malocclusion. Probl. stom. 3:383-385 '56 (MLRA 10:5)  
(TEETH--ABNORMITIES AND DEFORMITIES)

VASILEVSKAYA, Z.F.

MUKHINA, A.D.; VASILEVSKAYA, Z.F.

X-ray examination in the diagnosis and treatment of deformities of the maxillo-dental system. Vrach.delo no.11:12-13-1214 N '57.

(MIRA 11:2)

1. Kafedra ortopedicheskoy stomatologii (zav. - prof. A.I. Botel'man) Kiyevskogo meditsinskogo instituta.

(TEETH--ABNORMALITIES AND DEFORMITIES)  
(DIAGNOSIS, RADIOSCOPIC)



VASILEVSKAYA, Z.F., kand.med.nauk (Kiyev)

Traumatic occlusion and methods for its elimination in paradentosis. Probl.stom. 4:351-356 '58. (MIRA 13:6)

(TEETH--ABNORMITIES AND DEFORMITIES)  
(GUMS--DISEASES) (ORTHODONTIA)

VASILEVSKAYA, Z.F.; MUKHINA, A.D.

Extraction of teeth in orthodontic complex treatment of anomalies  
in the position of individual teeth. Probl. stom. 5:330-335 '60.  
(MIRA 15:2)

1. Kiyevskiy meditsinskiy institut.  
(TEETH\_EXTRACTION) (TEETH\_ABNORMITIES AND DEFORMITIES)

VASILEVSKAYA, Z.F.

Effect of dental prostheses on the improvement of speech. Probl.  
stom. 5:342-352 '60. (MLRA 15:2)

1. Kiyevskiy meditsinskiy institut.  
(SPEECH) (DENTAL PROSTHESIS)

VASILEVSKAYA, Z.F. (Kiyev); MUKHINA, A.D. (Kiyev)

Removal of teeth in the compound orthodontic treatment of bite  
anomalies. Probl.stom. 6:250-255 '62. (MIRA 16:3)  
(ORTHODONTIA) (TEETH--EXTRACTION)

VASILEVSKAYA, Zinaida Filippovna; MUKHINA, Anastasiya Denisovna;  
KHOTIMSKAYA, M.M.[deceased]; KRISHTAB, S.I., red.

[Deformations of the maxillo-dental system in children]  
Deformatsii zucheliustnoi sistemy u detei. Kiev,  
Zdorov'ia, 1964. 329 p. (MIRA 17:12)

SENDAROVICH, F.G.; KARAPETYAN, I.S.; KHAZIZOVA, O.Kh.; VASILEVSKAYA, Z.F.;  
GRINCHUN, E.I.; MAKAROVA, L.A.

Tubage as a means of increasing the effectiveness of electro- and  
and therapy in chronic infectious cholecystitis. Sbor. nauch. rab.  
vrach. san.-kur. uchr. profsojuzov no.1&132-135 '64.

(MIRA 18:10)

1. Vessentukskiy bazovyy sanatoriy im. F.E.Dzerzhinskogo (glavnyy  
vrach - zasluzhennyy vrach RSFSR V.N.Ivanov, nauchnyy rukovoditel' -  
kand.med.nauk V.N.Donskoy).

BELYANKIN, Fedor Pavlovich, akademik; MALASHENKO, Sergey Vasil'yevich, doktor tekhn. nauk; KHOTYANITSEV, Nikolay Pavlovich, starshiy nauchnyy sotr.; MOZNIKER, Riva Abramovna, vedushchiy inzh.; RADZIYEVSKIY, Vadim Antonovich, vedushchiy inzh.; VASILEVSKAYA, Zoya Ivanovna, vedushchiy inzh.; DRAYGOR, D.A., doktor tekhn. nauk, otv. red.; KISINA, I.V., red. izd-va; LIBERMAN, T.R., tekhn. red.

[The R-50 universal vibratory testing unit] Universal'naya vibratsionnaya ispytatel'naya ustanovka R-50. Kiev, Izd-vo Akad. nauk USSR, 1961. 114 p. (MIRA 15:2)

1. Akademiya nauk USSR (for Belyankin).  
(Testing machines)

KRASIL'SHCHIKOV, Z.N., kand.tekhn.nauk (g. Zhdanov); NECHEPURENKO, S.Ye.,  
inzh. (g. Zhdanov); SHVACH, Ye.H., inzh. (g. Zhdanov); Prinimali  
uchastiye: ANDREYEV, I.I.; VASILEVSKAYA, Z.I.; KUDINOV, Ye.D.

Investigation of pipes made of heat-hardened carbon steel. Stroi.  
truboprov. 7 no.2:12-14 F '62. (MIRA 15:3)  
(Pipe, Steel)



*РАДИОЧУВСТВО*

USSR/Electronics - Radio equipment

Card 1/1 Pub. 89 - 14/32

Authors : Vasilevskiy, A.

Title : Radio-phonograph "Chayka"

Periodical : Radio 2, 22 - 24, Feb 1955

Abstract : A description is presented of the "Chayka", a six-tube radio-phonograph combination. Technical data and specifications together with a circuit diagram and illustrations depicting the above mentioned unit are given. The disposition of its various components is also indicated. Table; drawings; diagrams.

Institution: .....

Submitted: .....

VASILEVSKIY, A.B.

Tree tapping under conditions of widely scattered wood clearings.  
Gidroliz. i lesokhim. prom. 17 no.3:27 '64.

(MIRA 17:9)

1. Plyavin'skoye lesokhimicheskoye khozyaystvo.

SOV/111-59-2-10/27

6(7)

AUTHOR: Vasilevskiy, A.G., Chief

TITLE: A Concentrator for Telegraph Communications Lines Equipped with STA Equipment (Kontsentrator dlya telegrafnykh svyazey, oborudovanykh apparatami STA)

PERIODICAL: Vestnik svyazi, 1959, Nr 2, pp 15-16 (USSR)

ABSTRACT: The author describes a system in use at the Sverdlovsk Central Telegraph Office for communications lines which are equipped with the STA series apparatus, and providing for especially equipped reception and transmission points. The central telegraph office, city offices, and reception and transmission points are connected through an ordinary dialing system. The circuit of the system is illustrated, and the calling and dialing procedure for obtaining the proper connection, including connection of the appropriate apparatus (STA-1, STA-2, STA-3 and ST-35), is described. The use of separate reception and transmission points achieves maximum production-line movement of telegrams. The

Card 1/2

SOV/111-59-2-10/27

A Concentrator for Telegraph Communications Lines Equipped with STA Equipment

number of such points in use at any one time of day is determined by the amount of traffic, and operates on a schedule basis. The system has allowed the central telegraph office to cut down the number of telegraphists by 30%, and free 42% of the telegraph apparatuses. There is 1 circuit diagram.

ASSOCIATION: Sverdlovskiy tsentral'nyy telegraf (The Sverdlovsk Central Telegraph Office)

Card 2/2

6(7)

SOV/111-59-5-14/32

AUTHOR: Vasilevskiy, A.G., Chief

TITLE: Group Servicing in Automated Telegraph Communications

PERIODICAL: Vestnik svyazi, 1959, Nr 5, p 17-18 (USSR)

ABSTRACT: With automatic receiving and transmitting equipment, one telegraph operator may simultaneously handle two channels (reception and transmission) with duplex communication or two simple communications, whereby all equipment is installed on one work table. However, such servicing is made difficult if the load is higher than 70%. In this case, it is necessary to change over to simplex operation, whereby two telegraph operators handle one communication channel. In this case, it is sometimes impossible to fill the norm, because there is not enough work for two. It is more suitable to operate the telegraph apparatus in groups of three or more by a team of telegraph operators working in two sections. One section works at the telegraph apparatus, receiving and transmitting

Card 1/2

SOV/111-59-5-14/32

Group Servicing in Automated Telegraph Communications

telegrams. The other section performs all auxiliary operations such as logging, processing of special telegrams, controlling equipment, replacing paper spools on the equipment, etc. The operators in the two sections take turns in operating the equipment. Experience showed that efficiency is higher when telegraph operators are relieved of all auxiliary work and then the efficiency will be approximately equal to the processing capacity of the STA apparatus, or at least equal to the norms of individual operation. This method has been used at the Sverdlovsk Telegraph Exchange since 1958 on heavily loaded automatic channels and at primary perforation work places. There is 1 photograph.

ASSOCIATION: Sverdlovskiy telegraph (Sverdlovsk Telegraph Exchange).

Card 2/2

VASILEVSKIY, A.G.

The workers of the Sverdlovsk telegraph are fighting for the right to be called an enterprise of communist labor. Vest. sviazi 22 no.4:28-29 Ap '62. (MIRA 15:4)

1. Nachal'nik Sverdlovskogo tsentral'nogo telegrafa.  
(Sverdlovsk--Telegraph--Employees)

VASILEVSKIY, A.I.

Our experience in operative treatment of patients suffering from thrombophlebitis of the lower extremities. Nauch.trudy Chetv.Mosk.gor.klin.bol'. no.1:227-239 '61. (MIRA 16:2)

1. Iz kliniki obshchey khirurgii pediatricheskogo fakul'teta (dir. prof. G.P. Zaytsev) 2-go Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N.I. Pirogova (dir. - dotsent M.G. Sirotkina) i Moskovskoy gorodskoy klinicheskoy bol'nitsy No.4 (glavnyy vrach G.F. Papko).  
(THROMBOPHLEBITIS) (EXTREMITIES, LOWER--SURGERY)



VASILEVSKIY, A.I.

Late results in the treatment of thrombophlebitis of the extremities.  
Sov. med. 25 no.10:58-63 0 '61. (MIRA 15:1)

1. Iz kliniki obshchey khirurgii pediatricheskogo fakul'teta  
(dir. - prof. G.P.Zaytsev) II Moskovskogo meditsinskogo instituta  
imeni N.I.Pirogova (dir. - dotsent M.G.Sirotkina) i 4-y Moskovskoy  
gorodskoy klinicheskoy bol'nitsy (glavnyy vrach G.F.Papko).  
(PHLEBITIS)

VASILEVSKIY, A. I. (Moskva, Universitetskiy pr., d. 5, kv. 29)

Our experience with the surgical treatment of thrombophlebitis  
of the lower extremities. Nov. khir. arkh. no. 3:15-20 '62.  
(MIRA 15:4)

1. Kafedra obshchey khirurgii (zav. - prof. G. P. Zaytsev)  
pediatricheskogo fakul'teta 2-go Moskovskogo meditsinskogo  
instituta.

(EXTREMITIES, LOWER--DISEASES)  
(PHLEBITIS)

7

VASILEVSKIY, A.I. (Moskva, Universitetskiy prospekt, 5, kv.29)

Peripheral circulatory changes in surgery of thrombophlebitis of the lower extremities. Vest. khir. 92 no.3:102-107 Mr '64.

(MIRA 17:12)

1. Iz kliniki obshchey khirurgii (zav. - prof. G.P.Zaytsev) pediatricheskogo fakul'teta 2-go Moskovskogo meditsinskogo instituta i 4-y Moskvoyskoy gorodskoy klinicheskoy bol'nitsy (glavnyy vrach - V.V. Barlyayeva).

ZAYCHENKO, S.Ya.; VASILEVSKIY, A.K.

We are improving industrial organization. Ugol' Ukr. 2 no.10:23-  
24 0 '58. (MIRA 12:1)

1. Nachal'nik shakhty "Kapital'naya" tresta Makeyevugol' (for Zaychenko).
  2. Glavnyy inzh.shakhty "Kapital'naya" tresta Makeyevugol' (for Vasilevskiy).
- (Mine management)

Vasilevskiy, A. L.

Elimination of syntactic homonymy on the basis of a formal description  
of context in modern English  
Vypusk 3, Moscow, 1961, 14p

Paper read at the Moscow Conference on information processing, machine translation, and automatic text reading, January, 1961.

VASILEVSKIY, A.M.

Defense organization of Soviet patriots. Voenn. znan. 33 no.1:3-4  
Ja '57. (MIRA 10:10)

1. Marshal Sovetskogo Soyuza.  
(Military education)

L 24305-66 EWT(1)/T IJP(c) AT

ACC NR: AF6006996

SOURCE CODE: UR/0051/66/020/002/0224/0229

AUTHOR: Zhirnov, N. I.; Vasilevskiy, A. S.

52

ORG: none

B

TITLE: Application of the generalized WKB method to the study of the vibrational-rotational spectra of diatomic molecules. I. Vibrational-rotational spectrum of a Morse oscillator

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 224-229

TOPIC TAGS: molecular spectrum, vibration spectrum, approximation method, hydrogen, quantum oscillator, perturbation theory

ABSTRACT: The authors propose a simpler method for calculating vibrational-rotational energy levels of diatomic molecules, using a generalized WKB method in a form close to that previously derived by one of the authors (Zhirnov, Opt. i spektr. v. 17, 643, 1964). The ground electronic state of the hydrogen molecule is considered as an example, under the assumption that the actual potential curve of the molecule can be sufficiently accurately approximated by a Morse potential function. The vibrational-rotational levels thus obtained are compared with the existing experimental data and with the results of the calculation by perturbation-theory methods. The calculated results are systematically high by roughly 100 cm<sup>-1</sup> compared with the experimental values. The causes for the various discrepancies are briefly discussed. The authors thank A. N. Zavaruyeva for assistance with the numerical computer work. Orig. art. has: 22 formulas and 1 table.

SUB CODE: 20/

SUBM DATE: 07Dec64/

ORIG REF: 004/

OTH REF: 006

Card 1/1

UDC: 535.338.42.001.1

VASILEVSKIY, B.F.

Plan of endogenic metallogeny in the southwestern Gissar Range  
and some problems concerning the genesis of hydrothermal deposits  
in the region. Nauch. trudy TashGU no.249. Geol. nauki no.21 16-35  
'64. (MIRA 18:5)



POPOV, V.I.; VASILEVSKIY, B.F., dotsent, otv.red.; UMARDZHANOV, K.,  
tekhn.red.

[Core theory of crustal development] IAdernaia teoriia razvitiia  
zemnoi kory. Tashkent, Izd-vo SamGU, 1960. 169 p. (Tashkent.  
Universitet. Trudy, no.177). (MIRA 14:12)  
(Earth—Surface)

VASILEVSKIY, B.F.

Genesis and localization of some Hercynian deposits in the southwestern part of the Gissar Range. Zap. Uz. otd. Vses. min. ob-va no.14:115-122 '62. (MIRA 16:7)

(Gissar Range—Ore deposits)

SULTANOV, M.S.; VASILEVSKIY, B.F., dots., otv. red.

[Some problems of the petrography of the Machitli intrusive]  
Nekotorye voprosy petrografii Machitlinskogo intruziva. Otv.  
red. B.F.Vasilevskii. Tashkent, Izd-vo SamGU, 1962. 67 p.  
(MIRA 16:5)

(Gissar Range region--Petrology)

VASILEVSKIY, B.F.

Age and origin of corundum in the southern Nura-Tau. Zap.Uz.otd.  
Vses.mim.Ob-va no.6:83-90 '54. (MLRA 9:12)

1. Uzbekskiy gosudarstvennyy universitet imeni Alishera Navoi.  
(Nura-Tau--Corundum)

VASILEVSKIY, B.F.

Using Professor S.A.Shchukarsv's method for the energy analysis of  
silicate formation processes. Zap.Uz.eto.Vses.min.ob-va no.8:189-  
199 '55. (MIRA 10:1)

(Silicates)

VASILEVSKIY, B.K., inzhener

The practice of drying beech lumber in clamps. Der.prom.4 no.5:28  
My'55. (MLRA 8:10)

1. TSumanskiy derevoobrabatyvayushchiy kombinat  
(Lumber--Drying)

VASILEVSKIY, B.K., inzhener.

Clamping device for a milling machine. Der.prom.5 no.4:19 Ap '56.  
(MIRA 9:7)

1. Sumanskiy derevebratyyvayushchiy kombinat.  
(Milling machinery--Attachments)

VASILEVSKIY, D.

Sound recording and radiobroadcasting technology and its  
prospective development. Tekh. radioveshch. i telev. no.2:  
40-57 '63. (MIRA 18:3)

1. Starshiy inzh. Vsesoyuznogo nauchno-issledovatel'skogo  
instituta zvukozapisi.



VASILEVSKII D.P.

New methods of aerial evaluation and prospecting by means of aerial photography  
Moskva, Goslesbumizdat, 1952. 63p. (53-7950)

SD553.V3

1. forests and forestry-Mensuration

VASILEVSKIY, D.

State standards for magnetic sound recorders. Radio no.11:41 M  
'56. (MLRA 9:12)  
(Magnetic recorders and recording--Standards)

VASILEVSKIY, D.

107-12-32/46

AUTHOR: Vasilevskiy, D. (Moscow) All-Union Sound-Recording Research Institute  
(Vsesoyuznyy nauchno-issledovatel'skiy institut zvukozapisi)

TITLE: State Standards for Magnetic Tape Recorders (Last Part, see RadioNrl1).  
(Gosudarstvennye standarty na magnitofony)

PERIODICAL: Radio, 1956, Nrl2, pp. 39-40, 42 (USSR)

ABSTRACT: In the Standard the magnetic tape recorders are subdivided into groups according to the rated speeds of their tapes. There are 3 groups of requirements in the Standard: quality requirements, methods of measurements, and tape interchange requirements.

The Standard quality requirements are presented in Table 3, the essential data of which are:

Characteristic:	Tape recorder group				
	76	38	19	9	5
Tape speed, cm/sec	76.2	38.1	19.05	9.53	under 9
Speed error % ±	0.2	0.2	2	2	
Speed irreg. factor % ±	0.2				
Frequency range	30c-15kc	30c-15kc	50c-10kc	100c-6kc	
Noise ratio, db	-60	-60	-35	-35	
Card 1/2 Nonlinear distortion f.%	3	2	5	5	

107-12-32/46

State Standards for Magnetic Tape Recorders

Types 76 and 38 are considered as professional; types 19 and 9 - amateur mass production units.

The main Standard methods of measurements are:

Tape speeds are measured with 100 sec or less averaging time. Irregularity factor is determined in 0.5-300 c band compared against a test tape. Frequency characteristics of the through channel are measured with a level about 20 db lower than the maximum recording level. The max level is determined at 400 c.

The tape interchange requirements specify oxide in or out types, direction of motion, number and place of sound tracks, reel size, etc. Reels are specified in ГOCT7705-55 and ГOCT7704-55.

Tape standards are applicable to all new types of Soviet-make tape recorders, like M72, Volna 2, Yauza, Dnepr 9, El'fa 10. The older types (M71 and Volna) do not meet the standards.

There are 4 figs and 1 table in this 2-nd Part of the article.

ASSOCIATION: The All-Union Sound-Recording Research Institute, Moscow  
(Vsesoyuznyy nauchno-issledovatel'skiy institut zvukozapisi)

AVAILABLE: Library of Congress.  
Card 2/2

APOLLONOVA, L.P., red.; VAYBOYM, V.S., red.; VASILEVSKIY, D.P., red.;  
VROBLEVSKIY, A.A., red.; GRIBKOVA, S.A., red.; GRIGORASH, G.L.,  
red.; KAZNACHEY, B.Ya., red.; PARKHOMENKO, V.I., red.; PUSSET, L.A.,  
red.; REGIRER, Ye.I., red.; ROZENBLAT, M.A., red.; MALKINL', B.Z.,  
red.

[Methods for testing magnetic tape recorders] Metodika ispytania  
magnitofonov. Moskva. 1958. 78 p. (Akademiya nauk SSSR, Morskoi  
gidrofizicheskii institut. Trudy, vol. 14) (MIRA 12:7)  
(Magnetic recorders and recording-Testing)

ARNOLD, R.R.; APOLONOVA, L.P., red.; VAYMBOYU, V.S., red.; VASILEVSKIY, D.P.,  
red.; VHOBLEVSKIY, A.A., red.; GRIBKOVA, G.L., red.; GRIGORASH, G.L.,  
red.; KAZNACHNY, B.Ye., red.; PARKHOMENKO, V.I., red.; PUSSET, L.A.,  
red.; REZIN, Ye.I., red.; ROZENBLAT, M.A., red.; MAIKIYSL', B.A., red.

[Magnetic heads for sound recording apparatus] Magnitnye golovki dlia  
apparatury zvukozapisi. Moskva, 1958. 153 p. (Moskva. Vsesoiuznyi  
nauchno-issledovatel'skii institut zvukozapisi. Trudy, no.3).  
(MTRA 12:4)

(Magnetic recorders and recording--Equipment and supplies)

VASILEVSKIY D. P.

11 июня  
(с 18 до 22 часов)

В. И. Васильевский,  
Р. Р. Чирный

Математика испытания магнетронов и магнетронных головок.

А. А. Врублевский,  
И. И. Мухоморов

О корреляционной зависимости длины при резонансе переключательных головок.

А. А. Врублевский

Об электроном управлении при магнетронной головке.

В. А. Герасим

К теории магнетронных сигналов.

12 июня  
(с 10 до 16 часов)

И. В. Лыфко,  
О. В. Баранов

Вопросы теории и практики вакуумных магнетронных головок.

13

М. Г. Арутюнян

Ферромагнитные устройства для импульсного излучения на высших частотах в магнетронных переключателях.

14 СЕКЦИЯ ЭЛЕКТРОННО-ВЫЧИСЛИТЕЛЬНОЙ ТЕХНИКИ  
Руководитель И. И. Гутенко

15 июня  
(с 10 до 16 часов)

Совместные задания с целью вакуумно-электронных приборов

В. И. Говерман

Динамический трекер на вакуумно-электронном устройстве.

А. Ю. Герасим

Э. В. Голубович

З. И. Дорон

В. А. Капитанов

Г. В. Котляков

Специальные вопросы теории вакуумно-электронных приборов.

И. И. Гутенко

Т. И. Агалаев

И. С. Волков

14

report submitted for the Centennial Meeting of the Scientific Technological Society of  
Radio Engineering and Electrical Communications in A. S. Popov (1859-1944), Moscow,  
8-12 June, 1959

VASILEVSKIY, D.P.

New makes of mass produced magnetic tape recorders. Trudy VHAIZ  
(MIRA 14:4)  
no. 7:42-55 '60. (Magnetic recorders and recording)



VASILEVSKIY, D.P.

New mass-produced magnetic tape recorders having undergone tests  
during 1960-1961. Trudy VNAIZ no.9:123-127 '61. (MIRA 15:9)  
(Magnetic recorders and recording)

VASILEVSKIY, D.P.; SHLEYSNER, R.R.; VROBLEVSKIY, A.A.

Contactless magnetic recording and reproduction. Trudy VMAIZ  
no.10:41-57 '62. (MIRA 16:11)

VASILVSKIY, F.K.

Manufacture of machine parts from nylon in the Orshansko Plix Co. (MIA 17:10)  
Tekst. prom. 24 no. 7:73-75 J1 '64.

1. Nachal'nik otdela byuro po ratsionalizatsii i izobretatel'stvu  
Orshanskogo l'nokombinata.

VASILEVSKIY, G.A., inzhener.

Some characteristics of design and construction of the Tereblya-  
Rika Hydroelectric Power Station. Gidr.strei.25 no.8:5-10 S '56.  
(Tereblya-Rika Hydroelectric Power Station) (MLRA 9:10)

VASILEVSKIY G.K.

USSR/General Problems of Pathology. Comparative Oncology. Human  
Tumors.

U-5

Abs\_Jour : Ref Zhur - Biol., No 14, 1958, No 66096

Author : Vasilevskiy G.K.

Inst : -

Title : Arrhenoblastoma of the Ovary

Orig Pub : Akusherstvo i ginekologiya, 1956, No 6, 83-85

Abstract : A 25-year old female who had been infertile for 2 years and had had amenorrhea for 8 months developed signs of masculinization for 4.5 months. The firm tumor removed from the left ovary, measuring 6 cm. x 7 cm. with a variegated appearance and areas of softening, proved to be an arrhenoblastoma of complex structure. Five months after surgery masculinizing signs disappeared. After 1 1/2 years shw delivered a normal live infant. -- Yu. N. Darkshevich.

Card : 1/1

VASILEVSKIY, G.K., zasluzhennyy vrach RSFSR

Rupture of the uterus along the cicatrix following cesarean section [with summary in English]. Akush. i gin. 34 no.2:46-51 Mr-Apr '58  
(MIRA 3:5)

1. Iz Vologodskoy oblastnoy bol'nitsy  
(UTERUS, rupt.  
in pregn. along cicatrix of previous cesarean section  
(Rus))  
(PREGNANCY, compl.  
uterus rupt. along cicatrix of previous cesarean section  
(Rus))  
(CESAREAN SECTION  
rupt.of previous cicatrix in subsequent pregn. (Rus))

YASILEVSKIY, G.K., zasluzhenny vrach RSFSR.

Spontaneous ruptures of the uterus [with summary in English]:  
Akush. i gin. 34 no.5:54-60 S-O '58 (MIRA 11:10)

1. Iz Vologodskoy oblastnoy bol'nitsy.  
(UTERUS, rupture  
spontaneous (Rus))

VASILEVSKIY, I.

First results of an experimental procedure for issuing credit to  
trade organizations. Den. i kred. 20 no.1:21-26 Ja '62.  
(MIRA 15:1)

1. Zamestitel' upravlyayushchego Belorusskoy kontoroy Gosbanka.  
(Mogilev Province--Retail trade--Finance)



UMAROV, S.; IVANOV, I.; SOBOLEV, A.; KRASNOV, V.; VASILEVSKIY, I.;  
POTAPKIN, I.; IL'ICHEV, N.; PIZENGOL'TS, M.; SOKRATOV, K.;  
CHUR SIN, A.; KAUGER, V.; VOLOVODOV, A.; BAZARYA, M.

Issuing credit to collective farms should be equal to the  
standard of the new tasks. Den. 1 kred. 16 no.4:3-26 Ap '58.  
(MIRA 11:5)

1. Upravlyayushchiy Uzbekskoy kontoroy Gosbanka (for Umarov).
2. Zamestitel' upravlyayushchego Rostovskoy oblastnoy kontoroy Gosbanka (for Ivanov).
3. Upravlyayushchiy proizvodstvenno-ekspluatatsionnogo otdela Sakhalinskoy oblastnoy kontoroy Gosbanka (for Sobolev).
4. Nachal'nik proizvodstvenno-ekspluatatsionnogo otdela Sakhalinskoy oblastnoy kontoroy Gosbanka (for Krasnov).
5. Zamestitel' upravlyayushchego Belorusskoy respublikanskoy kontoroy Gosbanka (for Vasilevskiy).
6. Nachal'nik otdela kreditovaniya sel'skogo khozyaystva i zagotovok Ukrainskoy respublikanskoy kontoroy Gosbanka (for Potapkin).
7. Upravlyayushchiy Mordovskoy respublikanskoy kontoroy (for Il'ichev).
8. Starshiy prepodavatel' Voronezhskogo sel'skokho zhaystvennogo instituta (for Pizengol'ts).
9. Saratovskiy ekonomicheskij institut (for Sokratov).
10. Upravlyayushchiy Sovetskim otdeleniy Gosbanka Krasnodarskogo kraya (for Chursin).
11. Upravlyayushchiy Gorodishchenskim otdeleniyem Gosbanka Penzenskoy oblasti (Kauger).
12. Upravlyayushchiy Zherdevskim otdeleniyem Gosbanka Tambovskoy oblasti (for Volodov).
13. Nachal'nik Upravleniya sel'skogo khozyaystva i zagotovok Gosbanka (for Bazarya) (Agricultural credit)

207-50

L 05125-67 EWT(1) RO

ACC NR: AP6030279 (AN) SOURCE CODE: UR/0394/66/004/008/0045/0048

AUTHOR: Zakirov, T. S.; Vasilevskiy, I. G.

18  
B

ORG: All-Union Scientific Research Institute of Cotton Growing (Vsesoyuznyy nauchno-issledovatel'skiy institut khlopkovodstva)

TITLE: Results of tests of butyfos effectivity on cotton plants

SOURCE: Khimiya v sel'skom khozyaystve, v. 4, no. 8, 1966, 45-48

TOPIC TAGS: cotton, defoliant agent, butyfos, cotton bolls

ABSTRACT: In 1962-1964, tests were made in various cotton growing areas of Kazakhstan to determine the effectiveness of butyfos as a cotton plant defoliant. It was found that butyfos is the most effective cotton plant defoliant, although results are not satisfactory for fine fiber cottons. A concentrate of butyfos emulsion was found to be more effective and convenient than an oil solution. The compound was sprayed from the air and from the ground. A 2 kg/ha solution of butyfos is the best dose to use on cotton plants when 2--3 bolls are open on most plants. The dose must be increased to 3--4 kg/ha for large and highly productive plants, and also during late treatment and when the mean daily temperature is low.

Orig. art. has: 3 tables. [W.A. 50]

[GC]

Card 1/1 SUB CODE: 02, 06, 07/ SUBM DATE: 20Jul65/ UDC: 631.551.633.51

VASILEVSKIY, I.I.

YETS, A.G.; VASILEVSKIY, I.I.; ZHIRINA, S.I.

Acute appendicitis in children. *Pediatrics* no.4:86 Ap '57.  
(MIRA 10:10)

1. Iz kliniki obshchey khirurgii Yaroslavskogo meditsinskogo  
instituta i detskoy bol'nitsey imeni N.A.Semashko. Yaroslavl'.  
(APPENDICITIS)

VASILEVSKIY, I. I.

YETS, A.G., dotsent; VASILEVSKIY, I.I.

Subcutaneous injury of the biceps brachii. Ortop., travm. i protez.  
18 no.2:58-59 Mr-Apr '57. (MLRA 10:8)

1. Iz kafedry obshchey khirurgii (i.o. zav. - dotsent G.A.Dudkevich)  
Yaroslavskogo meditsinskogo instituta  
(SHOULDER--WOUNDS AND INJURIES)

VASILEVSKIY, I.I.

YETS, A.G., dots.; VASILEVSKIY, I.I. (Yaroslavl')

Gastric tetany. Klin.med. 35 no.11:142-144 N '57. (MIRA 11:2)

1. Iz kliniki obshchey khirurgii (zav. - dotsent G.A.Dudkevich)  
Yaroslavskogo meditsinskogo instituta.  
(TETANY, etiol. and pathogen.  
peptic ulcer, surg.)  
(PEPTIC ULCER, compl.  
tetany, surg.)

YETS, A.G., dotsent; VASILEVSKIY, I.I.

Gastric tetany. Vest.khir. 83 no.12:84-86 D '59. (MIRA 13:5)

1. Iz kliniki obshchey khirurgii (sav. - dotsent G.A. Dudkevich)  
Yaroslavskogo meditsinskogo instituta. Adres A.G. Yets: Yaroslavl,  
Meditsinskiy institut.

(TETANY)

(STOMACH--DISEASES)

MATESHUK, V.P., prof.; VASILEVSKIY, I.I., assistant

Suturing the duodenal stump with a single-row suture. Vest.khir.  
no.1:36-40'63. (MIRA 16:7)

1. Iz kliniki fakul'tetskoy khirurgii (zav. - prof. V.P.  
Mateshuk) Yaroslavskogo meditsinskogo instituta.  
(STOMACH—SURGERY) (SUTURES)

VASILEVSKIY, I. M. and VISHNYAKOV, V. V.

"Investigation of 300 Mev  $\pi$  Mesons Elastic Scattering by Hydrogen,"

paper presented at Annual International Conference on High Energy Physics,  
CERN, Geneva, 30 Jun - 5 Jul 58.

Laboratory of Nuclear Problems, Joint Institute for Nuclear Research, Dubna,  
USSR.



SOV/89-7-3-4/29

21(9)

AUTHORS:

Vasilevskiy, I. M., Prokoshkin, Yu. D.

TITLE:

Investigation of the Energy Characteristics of the Deflected Proton Beam of the 6 Meter Synchro-cyclotron

PERIODICAL:

Atomnaya energiya, 1959, Vol 7, Nr 3, pp 225-230 (USSR)

ABSTRACT:

The proton beam (150-670 Mev) coming from the 6-meter synchro-cyclotron of the Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research) is collimated by brass diaphragms (width 0.1 to 0.7 cm; height 2 cm). In this way it arrives between the poles (100 cm) of a magnet (field strength 16 koe), where it may be deflected up to  $20^\circ$ . At the outlet of the spectrometer there is a plastic scintillator as proton detector, which is coupled with a multiplier FEU-19M. The electric pulses of the multiplier are integrated by an RC-chain, and the current is measured by the self-recording potentiometer EPPV-51. By means of a synchronous motor the detector may be moved perpendicular to the proton flux. The variation of coordinates could be reconstructed with an accuracy of up to 0.02 cm. The dependence of proton flux strength upon the variation of coordinates  $J(x)$  is represented graphically and

Card 1/3

SOV/89-7-3-4/29

## Investigation of the Energy Characteristics of the Deflected Proton Beam of the 6 Meter Synchro-cyclotron

shows that here a Gaussian distribution exists. The energy spectrum of the protons  $\phi(E)$  was obtained by determining  $J(x)$  once with and once without the magnet being connected, and by being able to determine the course of the energy spectrum by means of integration. The deflected proton beam may be represented symmetrically as well as by the Gaussian function

$$\phi(E) = \exp \left\{ -(E - \bar{E})^2 / 2 \Delta_E^2 \right\}$$

where the dispersion  $\Delta_E$  at  $\bar{E} = 665$  Mev amounts to  $(2.8 \pm 0.3)$  Mev (measurement with helium). The dispersions determined for other  $\bar{E}$ -values coincide well with the theoretical curve given in reference 4. The average energy of the protons was determined with an accuracy of 0.1% by the method described in reference 5 (current-carrying wire), this accuracy being attainable only in the case of energy measurements ( $E > 250$  Mev). The radiation energies are not constant quantities, but they fluctuate in dependence on the various conditions of acceleration as well as on the conditions for beam deflection. It was possible to show by means of measurements carried out between

Card 2/3

SOV/89-7-3-4/29

Investigation of the Energy Characteristics of the Deflected Proton Beam of the 6 Meter Synchro-cyclotron

July 5, 1957 and October 12, 1958 that the fluctuations e.g. for  $\bar{E} = 665$  Mev vary between  $671.0 \pm 1.5$  Mev and  $658.8 \pm 1.0$  Mev. By employing the method described also the average energies of d and  $\alpha$ -particles were determined which were accelerated in the synchro-cyclotron. At a deuteron energy of  $405.3 \pm 0.5$  Mev the dispersion amounts to  $1.7 \pm 0.5$  Mev, whereas in the case of  $\alpha$ -particles of an energy of  $811.3 \pm 1.0$  Mev it is  $3.5 \pm 1.5$  Mev. Results obtained were discussed with Tan Syac-vey and A. A. Tyapkin. There are 6 figures and 5 references, 2 of which are Soviet.

SUBMITTED: December 7, 1958

Card 3/3

82884

S/120/60/000/02/015/052

E140/E355

24,6810

AUTHORS: Vasilevskiy, I.M. and Vishnyakov, V.V.

TITLE: Pulsed Hodoscopic Counter System

PERIODICAL: Pribery i tekhnika eksperimenta, 1960, No 2,  
pp 58 - 63 (USSR)

ABSTRACT: Scattering of  $\pi$ -mesons from protons (hydrogen) at an energy of 300 MeV was studied by this system. The pulsed power supply was triggered by a system of three scintillation counters in a coincidence circuit for detecting interaction of the meson beam with the hydrogen (liquid hydrogen). Methylal counters were used in the hodoscope, which triggered cold-cathode neon thyratrons arranged in the same configuration for photography of the paths of the interacting particles. The arrangement permitted an accuracy of  $\pm 4^\circ$ . The solid angle covered by the counters was 1.73 strad. Due to slightly low pulse power the efficiency of the system was 85%. A future system will employ a hydrogen thyratron. The system is most suitable for the study of interactions at low intensities of the order of several particles per sec. Acknowledgments are expressed to A.A. Tyapkin for directing and assisting in the work, to N.M. Kobaleva for designing the main assemblies of the equipment and to Yu.D. Bayukov

Card1/2

82884

S/120/60/000/02/015/052  
E140/E335

Pulsed Hodoscopic Counter System

for his assistance in the work.  
There are 6 figures and 4 Soviet references.

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

SUBMITTED: January 31, 1959

Card 2/2

VASILEVSKIY, I. M.

S/056/60/038/02/19/061  
82018  
B006/B011

24.4500

AUTHORS: Vasilevskiy, I. M., Vishnyakov, V. V.

TITLE: Elastic Scattering<sup>19</sup> of 300-Mev  $\pi^-$ -Mesons on Hydrogen

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,  
Vol. 38, No. 2, pp. 441-444

TEXT: Fig. 1 shows a scheme of the experimental setup used by the authors for investigating the elastic ( $\pi^-p$ ) scattering. The pions were produced by bombarding a beryllium target with 670-Mev protons of the inner beam of the OIYaI synchrocyclotron. The  $\pi^-$ -meson energy was found to be  $300 \pm 7$  Mev according to the respective range in copper. The  $\mu^-$  admixture was 4%. The  $\pi^-$  beam was separated by means of a scintillation counter telescope and hit a target of foam polystyrene with liquid hydrogen. The pion-beam intensity, recorded by the telescope, amounted to 13,000 particles per minute. Fig. 2 shows the arrangement of the 426 counters in the hodoscope system. The counters, fed by pulsed voltage, recorded the  $\pi^-$ -mesons scattered in the interval between 20 and 160° in the laboratory system. The ( $\pi^-p$ )-scattering was investigated with targets with and without

Card 1/3

Elastic Scattering of 300-Mev  $\pi^-$ -Mesons  
on Hydrogen

82018  
S/056/60/038/02/19/061  
B006/B011

hydrogen, and the photographs thus obtained were analyzed in two stages, the trajectories were divided into groups which are discussed here. Figs. 3, 4, and 5 show photographs taken by the hodoscope system with ( $\pi^-p$ ) events. An interpretation of photographic films yielded a total of about 1500 scattering events, among which about 1000 ( $\pi^-p$ ) scattering events. Fig. 6 shows the obtained angular distribution of the differential scattering cross section in the center of mass system. Assuming that elastic scattering is mainly due to S- and P-waves, the angular distribution can be described by formula

$$d\sigma/d\Omega = [(0.62 \pm 0.06) + (0.30 \pm 0.09)\cos\theta + (0.94 \pm 0.19)\cos^2\theta] \cdot 10^{-27}$$

cm<sup>2</sup>/steradian. For phase analysis, the authors availed themselves of information supplied by A. I. Mukhin and B. Pontekorvo (Ref. 4) apart from data obtained by the investigation under review. The electronic computer "Strela" was used for the purpose. Respective data are compiled in a table. The phases of the first set (cf. Table) agree with those found by Zinov and Korenchenko (Ref. 5). The authors finally thank A. A. Tyapkin for his advice and assistance, and N. I. Polumordvinova for her aid in the phase analysis. There are 6 figures, 1 table, and 5 Soviet references.

Card 2/3

Elastic Scattering of 300-Mev  $\pi^-$ -Mesons  
on Hydrogen

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SUBMITTED: September 3, 1959

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Card 3/3



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AUTHORS:

Vasilevskiy, I. M., Vishnyakov, V. V.

TITLE:

Polarization of Recoil Protons<sup>19</sup> in the Scattering of 300-Mev  $\pi^-$ -Mesons From Hydrogen

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 5, pp. 1644 - 1646

TEXT: Phase shift analysis of the differential cross sections of elastic and charge-exchange pion scattering gives no unambiguous results. To obtain them, it is necessary to carry out an additional investigation of the polarization of recoil protons. So far, only one report has been given on the measurement of the polarization of recoil protons in  $\pi^-p$  interaction ( $E_{\pi^-} = 223$  Mev) (Ref. 2). Agreement with the Fermi-type phase-shift set (Ref. 1) could be found, but one of the Yang-type sets could not be ruled out on account of the statistical error. The present "Letter to the Editor" gives preliminary results of measurements of the polarization of recoil protons in  $\pi^-p$  scattering ( $E_{\pi^-} = 300$  Mev). The

Card 1/3

83612

Polarisation of Recoil Protons in the  
Scattering of 300-Mev  $\pi^-$ -Mesons From Hydrogen

S/056/60/038/005/045/050  
B006/B063

measurements were made with a system of hodoscope counters which was described in Refs. 3 and 4. 305 elastic  $\pi^-p$  scattering events were found on the photographs. According to the angle of emission of the recoil proton, they were divided into three groups. The polarization of the recoil proton was calculated from  $P = (N_L - N_R) / P_1(N_L + N_R)$ , where  $N_L$  and  $N_R$  indicate the numbers of left-hand and right-hand scattered protons, respectively, and  $P_1$  is the analyzability of the above-mentioned system. X

Angular range of recoil proton (laboratory system)	$N_R$	$N_L$	P
15-23°	43	48	0.12±0.20
24-32°	85	58	-0.45±0.19
33-41°	45	26	-(0.70±0.21)
			-0.32

The results of measurement and two phase-shift sets are shown in a diagram. The results obtained agree much better with the first set ( $\alpha_1 = 17.1^\circ$ ,  $\alpha_{11} = 11.4^\circ$ ,  $\alpha_{13} = -5.0^\circ$ ). The authors thank A. A. Tyapkin

Card 2/3

83612

Polarization of Recoil Protons in the Scattering of 300-Mev  $\pi^-$ -Mesons From Hydrogen S/056/60/038/005/045/050  
B006/B063

for this assistance, as well as R. M. Sulyayev and L. I. Lapidus for their interest in this work. There are 1 figure, 1 table, and 7 references: 3 Soviet, 1 US, 1 Italian, 1 Dutch, and 1 CERN.

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Card 3/3

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AUTHORS:

Vasilevskiy, I. M., Vishnyakov, V. V., Iliyesku, E.,  
Tyapkin, A. A.

TITLE:

The Spin Correlation Coefficient in pp-Scattering<sup>19</sup> at an  
Energy of 310 Mev Through an Angle of 90° in the  
Center-of-mass System

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,  
Vol. 39, No. 3(9), pp. 889 - 891

TEXT: In the introduction, the authors give a survey of the results of  
phase shift analyses of elastic 310-Mev pp-scattering events published  
in America. The spin correlation coefficients  $C_{nn}(90^\circ)$ , which determine  
the correlation between the spin components perpendicular to the plane  
of scattering, are given for different phase shift sets (sets No. 1,2,3,  
4,6: 0.158, 0.711, 0.300, 0.490, and 0.425). Other calculations  
(Refs. 3-5) give other  $C_{nn}(90^\circ)$  values (No. 1: 0.38; No. 2: 0.61). Ex-  
periments for the determination of  $C_{nn}(90^\circ)$  carried out at Liverpool

Card 1/3

84971

The Spin Correlation Coefficient in  $S/056/60/039/003/057/058/XX$   
pp-Scattering at an Energy of 310 Mev  $B006/B070$   
Through an Angle of  $90^\circ$  in the Center-of-mass System

( $E_p = 320$  Mev) and Dubna (315 Mev) point rather to set No. 2;  $C_{nn}(90^\circ) = 0.75 \pm 0.11$  (Liverpool) and  $C_{nn}(90^\circ) = 0.7 \pm 0.3$  (Dubna). The authors have now completed their calibration tests with reference to the analyzability of the scatterer and determined  $C_{nn}$  anew.  $C_{nn}(90^\circ)$  was found to be equal to  $0.84^{+0.10}_{-0.22}$ . The authors then discuss estimates of the contributions of the singlet, triplet, and tensorial interactions  $b^2$ ,  $c^2$ , and  $h^2$ , respectively. According to S. B. Nurushev, for example,  $b^2 \approx 25\%$ ,  $c^2 \approx 62\%$ , and  $h^2 \approx 13\%$ . The effect of taking into account a smaller number of phase shifts in the analysis on the agreement between theory and experiment is also discussed. It is noted that if 9 phase shifts instead of 14 are considered, and the pion-nucleon coupling constant  $g^2$  is taken into account, a coefficient value of about 0.41 is obtained for the first and the second set. L. B. Okun' and I. Ya. Pomeranchuk are mentioned. There are 10 references: 3 Soviet, 6 US, and 1 British.

Card 2/3

84971

The Spin Correlation Coefficient in S/056/60/039/003/057/058/XX  
pp-Scattering at an Energy of 310 Mev B006/B070  
Through an Angle of  $90^\circ$  in the Center-of-mass System

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Card 3/3

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Joint Institute for Nuclear Research, Laboratory of Nuclear Physics



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Laboratory of Nuclear Problems

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VASILEVSKIY, K.I.  
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