16(1)

AUTHORS: Yefimov,N.V., and Stechkin,S.B. SOV/20-127-2-5/70

TITLE: Some Supporting Properties of Sets in Banach Spaces and Chebyshev Sets

PERIODICAL: Doklady Akademii nauk SSSR,1959,Vol 127,Nr 2,pp 254-257 (USSR)

ABSTRACT: A set M of the metric space R is called a Chebyshev set if to every $x \in R$ there exists only one $y \in M$ such that $\varrho(x,y) = \varrho(x,M)$, where ϱ denotes the distance. Let X be a Banach space, let E_a be a sphere of radius a. The a-closure of the set $M \subset X$ is the intersection of the complements of all open E_a which do not intersect M. M is called a-convex if it is identical with its a-closure. It is proved that every bounded compact Chebyshev set of a uniformly convex and smooth Banach space is convex. The properties of a-closures and a-sets are used essentially for the proof.4 theorems and 2 lemmas are given altogether. The authors mention Shmul'yan. There are 14 references, 3 of which are Soviet, 2 American, 1 Dutch, 1 Polish, 4 Italian, and 3 Danish.

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

PRESENTED: March 20, 1959, by P.S.Aleksandrov, Academician

SUBMITTED: March 17, 1959

Card 1/1

YEFIMOV, Nikolay Vladimirovich; SOLODKOV, V.A., red.; TUMARKINA, N.A., tekhn.red.

[Short course of analytical geometry] Kratkii kurs analiticheskoi geometrii. Izd.5., stereotipnoe. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1960. 256 p. (MIRA 13:7)
(Geometry, Analytic)

YEFIMOV, N.V.

"Studying the possibility of imbedding negative curvature surfaces into three dimensional space" by N.V. Efimov and E.Heinz. Mat. pros. no.5:243-246 '60. (MIRA 13:12)
(Surfaces of constant curvature)

YEFIMOV, N.V. (Moskva)

"Fundamentals of vector analysis," part 1: Vector algebra. Elements of vector analysis, by IA.S.Dubnov. Reviewed by N.V. Efimov. Mat. pros. no.5:293-302 '60. (MIRA 13:12)
(Vector analysis) (Dubnov, IA.S.)

YEFIMOV, Nikolay Vladimirovich; KOPYLOVA, A.N., red.; POLOVINKIN, S.M., red.; PLAKSHE, L.Yu., tekhn. red.

[Higher geometry] Vysshaia geometriia. Izd.4., ispr. i dop. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 580 p. (MIRA 14:9)
(Geometry)

YEFIMOV, N.V.

Validity of Hilbert's theorem on surfaces of constant negative curvature. Dokl. AN SSSR 136 no.6:1283-1286 F '61. (MIRA 14:3)

1. Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova. Predstavleno akademikom P. S. Aleksandrovym.
(Surfaces)

YEFIMOV, N.V.; POZNYAK, E.G.

Some transformations of the basic equations in the theory of surfaces. Dokl. AN SSSR 137 no.1:25-27 Mr-Ap '61. (MIRA 14:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom I.G.Petrovskim.
(Surfaces)

YEFIMOV, N.V.; POZNYAK, E.G.

Generalization of the Hilbert theorem concerning surfaces of constant negative curvature. Dokl. AN SSSR 137 no.3:509-512 Mr '61. (MIRA 14:2)

1. Moskovskiy gosudarstvennyy universitet im.M.V.Lomonosova. Predstavleno akademikom P.S.Aleksandrovym.

(Surfaces)

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S/020/61/140/003/001/020
C111/C222

16.4600

AUTHORS: Yefimov, N. V., and Stechkin, S. B.

TITLE: Approximate compactness and Chebysev sets

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 3, 1961, 522-524

TEXT: The present paper is a continuation of earlier publications of the authors (Ref. 1, DAN 118, no. 1, 17, 1958; Ref. 2, DAN 121, no. 4, 582, 1958; Ref. 3, DAN 127, no. 2, 254, 1959). The authors give necessary and sufficient conditions for the convexity of a Chebyshev set lying in a uniformly convex and smooth Banach space. The result is applied to the investigation of the approximate properties of the set of rational fractions with given straight lines of numerator and denominator in the spaces $L_p (p > 1)$.

Let X be a real Banach space, M -- subset of X. If $x \in X$, $y_n \in M$ (n=1,2, ...) and $\lim_{n \to \infty} \rho(x,y_n) = \rho(x,M)$ then the sequence $\{y_n\}$ is called minimizing for x in M. Definition: The set $M \subset X$ is called approximately compact if for every $x \in X$ every minimizing sequence of elements

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$y_n \in M$ is compact in M.

The set $M \subseteq X$ is called sequentially weakly closed if every point being a weak limit value of a certain sequence of elements $y_n \in M$ belongs to M.

Lemma 1: Let X be a uniformly convex Banach space. If the set $M \subseteq X$ is sequentially weakly closed then it is approximately compact.

In lemma 2 the authors transfer a property proved by them in an earlier paper for boundedly compact sets to approximately compact sets.

Lemma 3: Let X -- uniformly convex Banach space, M -- its approximately compact subset. Then for every $a > 0$ the closed a-extension M_a of the set M is approximately compact.

(A closed a-extension M_a of M is the set of all $x \in X$ for which $\varrho(x,M) \leq a$).

The set $M \subset X$ is called a Chebyshev set if for every $x_0 \in X$ there exists a single point $y_0 \in M$ for which $\varrho(x_0,M) = \varrho(x,y)$. The set $M \subset X$ is

called a sun in X if it is an existence set (i.e.: for every $x \in X$ the lower boundary $\inf_{y \in M} \varrho(x,y)$ is reached on a $y_o \in M$) and if it has the following property: let x be an arbitrary point not belonging to M, and let $y \in M$ be so that $\varrho(x,M) = \varrho(x,y)$; for an arbitrary point z of a ray originating from y and going through x then it holds: $\varrho(z,M) = \varrho(z,y)$.

Given $M \subset X$ and $a > 0$; the intersection of the complements of all open spheres E_a with the radius a which do not intersect M is called the a-closure of M. The set $M \subset X$ is called a-convex if it is identical with its a-closure.

Theorem 1: In a uniformly convex space X, the property of an approximately compact set to be a sun in X is equivalent to the Chebyshev property.

Theorem 2: An approximately compact set in a uniformly convex space has the Chebyshev property then and only then if each of its closed b-extensions is a-convex for every $a > 0$.

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Theorem 3 (basic): Let X be a uniformly convex and smooth Banach space. In order that a Chebyshev set $M \subset X$ is convex it is necessary and sufficient that it is approximately compact.

Let $R_{m,n}$ be tne set of all rational fractions belonging to the space $L_p[0,1]$, $p > 1$, the numerator of which has the degree m and the denominator of which has the degree n. From theorem 3 it follows: for arbitrary $m \geqslant 0$, $n \geqslant 1$, $R_{m,n}$ is an existence set in $L_p (p > 1)$ but no Chebyshev set.

There are 4 Soviet-bloc references.

ASSOCIATION: Matematicheskiy institut imeni V.A.Steklova Akademii nauk SSSR (Mathematical Institute imeni V.A.Steklov of the Academy of Sciences USSR) Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova (Moscow State University imeni M.V. Lomonosov)

PRESENTED: April 7, 1961, by J. M. Vinogradov, Academician
SUBMITTED: January 12, 1961

YEFIMOV, N. V.

"Surfaces of negative Gaussian curvature"

report submitted at the Intl Conf of Mathematics, Stockholm, Sweden, 15-22 Aug 62

YEFIMOV, N. V., and STECKHIN, S. B.

"Chebyshev sets in Banach spaces"

report submitted at the Intl Conf of Mathematics, Stockholm, Sweden, 15-22 Aug 62

YEFIMOV, Nikolay Vladimirovich; CHERNYSHEVA, L.Yu., red.; BRUDNO, K.F., tekhn. red.

[Quadratic forms and matrices]Kvadratichnye formy i matritsy Moskva, Fizmatgiz, 1962. 159 p. (MIRA 15:10)
(Forms, Quadratic) (Matrices)

YEFIMOV, Nikolay Vladimirovich; CHERNYSHEVA, L.Yu., red.; BRUDNO, K.F., tekhn. red.

[Brief course in analytic geometry] Kratkii kurs analiticheskoi geometrii. Izd.6., perer. i sokrashchennoe. Moskva, Fizmatgiz, 1962. 227 p. (MIRA 15:11)

(Geometry, Analytic)

YEFIMOV, N.V.; ZALGALLER, V.A.; POGORELOV, A.V.

Aleksandr Danilovich Aleksandrov; on his 50th birthday. Usp. mat.nauk 17 no.6:172-184 N-D '62. (MIRA 16:1)
(Aleksandrov, Aleksandr Danilovich, 1912-)

YEFIMOV, N.V.

Impossibility of isometric imbedding of certain manifolds with a negative Gaussian curvature into three-dimensional Euclidean space. Dokl. AN SSSR 146 no.2:296-299 S '62. (MIRA 15:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova. Predstavleno akademikom P.S. Aleksandrovym.
(Topology)

YEFIMOV, N.V.

Impossibility for three-dimensional Euclidean space to contain a complete regular surface of Gaussian curvature with a negative upper bound. Dokl. AN SSSR 150 no.6:1206-1209 Je '63.
(MIRA 16:8)

1. Moskovskiy gosudarstvennyy universitet im. Lomonosova.
Predstavleno akademikom I.G.Petrovskim.
(Curves of surfaces)

ACCESSION NR: AP4040437 S/0039/64/064/002/0286/0320

AUTHOR: Yefimov, N. V. (Moscow)

TITLE: Arising of singularities on surfaces of negative curvature

SOURCE: Matematicheskiy sbornik, v. 64(106), no. 2, 1964, 286-320

TOPIC TAGS: singularity, negative curvature surface, full regular surface, constant negative curvature, cuspidal edge, Gaussian curvature

ABSTRACT: The basic result of this paper is the theorem: In E_3 on every full regular surface, the upper bound of Gaussian curvature is not less than zero. The author gives a detailed proof and also investigates some mapping problems which are used in the proof and which have other applications. Orig. art. has: 32 formulas and 3 figures.

ASSOCIATION: none

SUBMITTED: 05Nov63 DATE ACQ: 24Jun64 ENCL: 00

SUB CODE: MA NO REF SOV: 015 OTHER: 000

Card 1/1

YEFIMOV, N.V., (Moskva)

Formation of singularities on surfaces of negative curvature.
Mat. sbor. 64 no.2:286-320 Je '64. (MIRA 17:9)

KLETNIK, David Viktorovich; YEFIMOV, N.V., prof., red.; MOROZOVA, I.Ye., red.

[Problems in analytic geometry] Sbornik zadach po analiticheskoi geometrii. Moskva, Izd-vo "Nauka," 1964. 254 p. (MIRA 18:3)

YEFIMOV, O.N.

POSTNOV, G.A.; YEFIMOV, O.N.; MILEYEV, V.S.; SOKOLINSKIY, Ye.A.

Observations of Mars in 1950. Biul.VAGO no.12:12-15 '53.
(MLRA 7:3)

1. Moskovskoye otdeleniye VAGO, otdel planet i luny.
(Mars (Planet))

33303
S/560/61/000/010/001/016
D299/D302

3.2430 (1482,2806)
17.2450

AUTHORS: Yefremov, A. I., Podomoshenskiy, A. L., Yefimov, O. N., and Lebedev, A. A.

TITLE: Study of short-wave radiation of the sun

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli. no. 10. Moscow, 1961, 3-11

TEXT: The apparatus was installed in the 2nd Soviet sputnik. Depending on the orientation of the space-ship, the various photon-counter units were switched on and off. The "zero" (i.e., the reading when the entrance window was covered by an aluminum film 1 mm thick) was basically determined by radiation penetrating the photon-counter unit through the gaps between the entrance window and the discs with filters. Owing to the little sensitivity of the apparatus to hard X-rays, no significant increase in the "zero"-level was observed in the polar regions. The effect

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Study of short-wave...

of charged-particle flow on the readings was accounted for by means of a special tungsten-plate in front of one of the entrance windows; this effect was found to be negligible. Sample-readings (taken on August 19, 1960) for a photon-counter with a BeO photo-cathode are shown in a figure; another figure shows the readings for a SrF_2 photo-cathode. Each figure has 3 parts indicating the readings for various positions of the disc with filters. The area and thickness of the Cu, Be, Al, $(CH)_n$ -filters are also indicated. The figures show the variations in the readings due to the rotation of the space-ship. A comparison of the curves corresponding to the SiO_2, LiF and CaF_2 -filters with those for Al, $(CH)_n$, Be and Cu -filters permitted ascertaining the X-ray level registered. The results of data processing led to the following conclusions: (1) The radiation in the 44 - 110 Å range ($(CH)_n$-filter) was constant to an accuracy of

Study of short-wave...

± 8%, corresponding to $1.5 \cdot 10^7$ counts $\cdot$ $cm^{-2} \cdot sec.^{-1}$. (2) The radiation in the 8 - 21 Å range (Al-filter) was constant ($6.2 \cdot 10^4$ counts $\cdot$ $cm^{-2} \cdot sec.^{-1}$) except for the time between 15 hr. 45 min. and 15 hr. 54 min., when it increased by a factor of 3.2, and also between 14 hr. 24 min. and 14 hr. 28 min., when it increased by 63%. (3) In the region below 8 Å (Be-filter), the radiation was very weak and often could not be distinguished from the background radiation of non-solar origin. (4) During increased solar activity, the radiation in the 5 - 10 Å range (Be-filter) increased elevenfold. (5) In the 1.4 - 3 Å range (Cu-filter), only background radiation of non-solar origin was recorded. In order to determine the energy flux from the recorded data, it was assumed that the spectral distribution of the radiation follows the law of black-body radiation (Planck's

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Study of short-wave...

Law). A figure shows the dependence of output signals on sun temperature for a receiver with BeO-photocathode and Cu, Be, Al, and $(CH)_n$-filters. Another figure shows the spectral distribution of the short-wave radiation. It was found that the radiation fluctuations are constant for wavelengths shorter than 20 Å and in particular for those shorter than 10 Å. The temperature of the quiescent corona was found to be almost double the value obtained by American investigators (Ref. 3: H. Friedman, Trans. Intern Astr. Un., 10, 706, 1960, Cambridge Univ. Press.). The observed flare, too, corresponds to a higher temperature $6.5 \cdot 10^6$ °K as compared to $(4 \div 2) \cdot 10^6$ °K). There are 7 fi- and 3 references : 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: H. Friedman, Trans. Intern. Astr. Un., 10, 706, 1960, Cambridge Univ. Press.

SUBMITTED: April 10, 1961

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9.6150 (also 4702)

40793

S/169/62/000/008/072/090
E032/E114

AUTHORS: Yefremov, A.I., Podmoshenskiy, A.L., Ivanov, M.A., Nikiforov, V.N., Yefimov, O.N.

TITLE: Filtering apparatus for the study of short-wave solar radiation

PERIODICAL: Referativnyy zhurnal, Geofizika, no.8, 1962, 17, abstract 8 G 128. (In the Symposium: 'Iskusstv. sputniki Zemli' ('Artificial Earth Satellites') no.10, M., AN SSSR, 1961, 48-54)

TEXT: A brief description is given of the method and apparatus used on a satellite to study the intensity of short-wave solar radiation by isolating different spectral regions with the aid of filters. The spectral sensitivity of the pulse counting radiation detectors, the secondary electron multipliers of the open type with BeO and SrF_2 photocathodes, and also the spectral sensitivity of the apparatus with the various filters [(Cu, Be, Al, $(CH)_n$, LiF] are described. The advantages of this method as compared with the counter method are emphasised; it is possible to use an extensive

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Filtering apparatus for the study... S/169/62/000/008/072/090
E032/E114

selection of filters with a single sensitive element capable of covering a wide spectral region (from X-rays to the ultraviolet), the lower sensitivity to the cosmic ray background, and the very wide range of the counting rates which can be recorded. Provision was made for regular zero checks and also checks of the overall sensitivity. A photograph and a block diagram of the apparatus are given, the electronic circuits (partly transistorised) are described, and the operation of a two-lens optical probe of the automatic switch, which operates when solar radiation enters the device, are described. The instrument is capable of recording the short-wave emission of solar flares from a satellite. 8 references.

[Abstractor's note: Complete translation.]

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40881

24.7200

S/181/62/004/009/012/045
B108/B186

AUTHORS: Yelistratov, A. M., and Yefimov, O. N.

TITLE: The influence of periodicity disturbances on the effect of the abnormal passage of X-rays. Integral characteristics for the abnormal passage of X-rays

PERIODICAL: Fizika tverdogo tela, v. 4, no. 9, 1962, 2397 - 2410

TEXT: The passage of X-rays through n-type Ge single crystals was investigated using a double crystal spectrometer with Bragg reflection (220) and the crystal position (2,-2). Thick specimens in the range $3.14 \leqslant \mu t \leqslant 82.4$ were used, wherein only the abnormal component of the split beam has a noticeable intensity since it is less absorbed than the normal component. Specimens of various thicknesses exhibiting low dislocation concentrations were used to measure the integral intensities of the abnormal transmission (T_i) and of the Laue reflection (R_i) (Fig. 2). The measurements showed that for thick crystals $T_i = R_i = i$. The linear relation $\ln i = \mu_i t + y_i$ can be usefully applied in practice, since changes in

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The influence of periodicity...

the integral coefficient of the interference absorption, μ_i and in the integral characteristic y_i due to lattice defects provide a measure for the latter. Theoretically, these characteristics are derived from the relations governing the relative intensities of the rays allowed to pass through and those reflected according to Laue:

$$\mu_i = \frac{\mu}{\gamma} - \frac{B}{t} = \frac{\mu}{\gamma} - \frac{\pi k C^2 \Psi_h t}{t\gamma\sqrt{\Phi_h C^2}} = \left(\mu - \frac{\pi k C \Psi_h}{\sqrt{\Phi_h}}\right)\frac{1}{\gamma}. \qquad (36),$$

$$y_i = \frac{1}{2}\ln A = \frac{1}{2}\ln(\Psi_h \cdot C^2). \qquad (37).$$

$\gamma = \cos\Theta_{Bragg}$, μ is the normal coefficient of photoelectric absorption, k is the wave vector, t is the thickness of the specimen, $\Phi_h = \chi_{rh}^2 - \chi_{ih}^2$, $\Psi_h = {}^2\chi_{rh}\,\chi_{ih}$. C=1, if the displacement vector is normal to the scattering plane, whereas $C = \cos 2\Theta_{Bragg}$, if it is positioned in the scattering plane.

There are 4 figures and 1 table.

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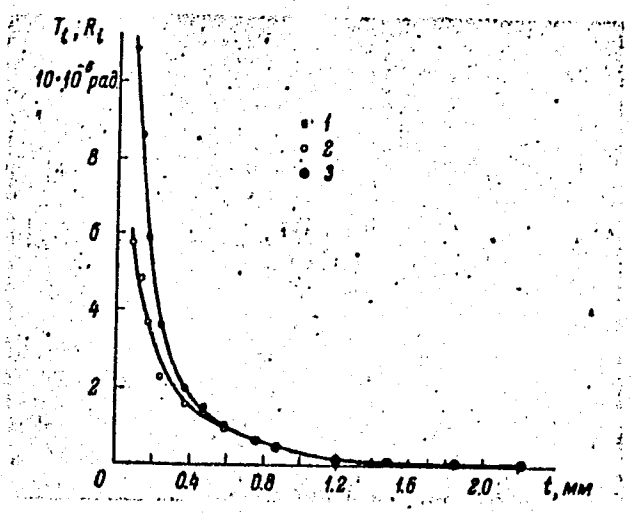
The influence of periodicity...

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute of Semiconductors AS USSR Leningrad)

SUBMITTED: April 10, 1962

Fig. 2. T_i and R_i(10^{-6} rad) versus t(mm).

Legend: (1) Passage, (2) Laue reflection, (3) passage and Laue reflection.



Card 3/3

44151

S/181/62/004/010/042/063
B102/B112

24.7000

AUTHORS: Yefimov, O. N., and Yelistratov, A. M.

TITLE: Influence of the dislocation density on the effect of the anomalous penetrability of X-rays into germanium

PERIODICAL: Fizika tverdogo tela, v. 4, no. 10, 1962, 2908-2916

TEXT: The effect of the dislocation densities on the integral intensity T_i of the anomalous penetrability and on the Laue reflection (integral intensity R_i) of X-rays was studied on 8 n-type and one p-type high-purity germanium single crystal with resistivities between 7 and 40 ohm·cm and dislocation densities between 0 and 10^5 cm^{-2}. The (220) plane was chosen as reflection plane since it not only ensures a high intensity but is also the most favorable for the experiments. As the Burgers vector lies mainly in the [110] direction all directions perpendicular to (110) are distorted. Since the effect of the impurities has not hitherto been explained, the samples studied were those of highest purity, i. e., that showed a maximum resistivity and a maximum mean free path. ln T_i

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and ln Ri as functions of the crystal thickness t, are proved to be independent of the dislocation density in the dislocation density range $0-1.5\cdot10^5$. According to the intensity-versus-thickness curves, 3 regions can be distinguished: thick crystals ($\mu t > 29$) for which the curves are linear, $\ln i = -\mu_i t + y_i$, $T_i = R_i = i$; intermediate crystals showing a deviation from linearity and the beginning of a divergence; thin crystals ($\mu t < 7.4$). In continuation of earlier studies (FTT, 4, 9, 1962) it can be shown that the integral coefficient of interference absorption μ_i can be approximated by the relations $\mu_i \simeq (\mu - 2\pi k C \chi_{ih})\frac{1}{\gamma}$ and $y_i \simeq \ln(\chi_{rh} C)$. μ is the ordinary photoelectric absorption coefficient, k the wave vector of incident radiation, C the polarization coefficient, γ the cosine of the angles of incidence and reflection in the case of Laue symmetry; the χ are Fourier expansion coefficients ($\chi = \chi_{rh} + i\chi_{ih}$; $\chi_{rh} \gg \chi_{ih}$) which depend on the crystal structure and the wavelength of the incident light. The results show that in the region of the "thick-crystal" approximation the integral intensity of the anomalous transmissivity is highly sensitive

Card 2/3

to the dislocation density. This sensitivity increases rapidly with t. If a calibration curve is available the dislocation densities can be determined from measurements of this integral intensity provided they exceed $5 \cdot 10^2$ cm^{-2}. There are 4 figures and 1 table.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors AS USSR, Leningrad)

SUBMITTED: June 11, 1962

L 17971-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AP3000632 S/0181/63/005/005/1466/1476

AUTHOR: Yefimov, O. N.

TITLE: Integral characteristics of anomalous transmission of x-rays in germanium crystals having dislocations

SOURCE: Fizika tverdogo tela, v. 5, no. 5, 1963, 1466-1476

TOPIC TAGS: x-ray transmission, Ge, dislocation, dislocation density, forbidden band, absorption coefficient

ABSTRACT: This paper supplements previous work of Yefimov and A. M. Yelistratov (FTT, 4, 9, 1962; and FTT, 4, 10, 1962). It concerns the effect of dislocation density on the integral intensity of anomalous transmission of x-rays in the density regions above 10 000 per sq cm and below 300 per sq cm. On the basis of his results, the author considers the possibility of introducing an effective mean structural factor for imperfect crystals (having dislocation), which is arrived at from experimentally determined values of the integral characteristics: the interference absorption coefficient, equal to the tangent of the slope angle, and the segment cut by the continuation of this tangent line on the axis of log i. Earlier methods of determining these characteristics have proved to be inaccurate, and the

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ACCESSION NR: AP3000632

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author shows a new method of determining them. He also analyzes the accuracy of his determinations. He concludes that the characteristics may be determined most reliably by using the greatest possible thickness t, for which $\Delta t/t$ is small. "In conclusion, the author considers it his pleasant duty to express thanks to A. M. Yelistratov for daily attention to the work and for discussions of the results."
Orig. art. has: 2 figures, 1 table, and 10 formulas.

ASSOCIATION: Institut poluprovodnikov, Leningrad (Institute of Semiconductors)

SUBMITTED: 19Jan63 DATE ACQ: 11Jun63 ENCL: 00

SUB CODE: PH NO REF SOV: 003 OTHER: 008

Card 2/2

L 15554-63 EWA(h)/EWT(l)/EWP(q)/EWT(m)/BDS AFFTC/ASD WW/JD

ACCESSION NR: AP3003882 S/0181/63/005/007/1869/1879

AUTHORS: Yefimov, O. N.; Yelisbratov, A. M. 64 58

TITLE: Effect of impurities on anomalous transmission of x-rays in Ge 21 27

SOURCE: Fizika tverdogo tela, v. 5, no. 7, 1963, 1869-1879

TOPIC TAGS: x-ray, Ge, H, Cu, Ni, impurity, crystal lattice, absorption, solubility, defect, heat treatment, dislocation, dislocation density, germanium, hydrogen, copper, nickel

ABSTRACT: The authors have measured the transmission of x-rays through Ge crystals containing impurities of H, Cu, and Ni. The results show that low concentrations of these ($\sim 10^{14}$cm^{-3} H, $\sim 10^{16}$cm^{-3} Cu, $\sim 5.5 \cdot 10^{15}$cm^{-3} Ni) essentially indicate the integral intensity of anomalous transmission, especially for large thicknesses (~ 2 mm), and lead to changes of several percent (in the tens). The principal characteristic for determining degree of lattice distortion by impurity atoms is the interference absorption coefficient. An increase in this coefficient is in complete agreement with an increase in concentration of injected impurities. The distortions introduced by different impurity atoms in the lattice are not alike. With lower ultimate solubilities the distortions due to injected impurity atoms

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ACCESSION NR: AP3003882

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become greater. The thermal treatment of initial samples (heated in vacuum) and the introduction of impurities by diffusion did not change the dislocation density (at least in the case of low dislocation densities). "In conclusion the authors express their sincere thanks to N. A. Chetyarkina for discussing the results, to the student A. T. Pavlenkovich for aid in handling the experimental results, and to the student N. M. Shishkin for participating in development of the method for preparing samples of solid solutions of Cu in Ge suitable for investigating by anomalous transmission of x-rays." Orig. art. has: 4 figures and 3 tables.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors, Academy of Sciences, SSSR)

SUBMITTED: 06Feb63 DATE ACQ: 15Aug63 ENCL: 00

SUB CODE: PH NO REF SOV: 006 OTHER: 003

Card 2/2

L 18723-63 EWP(q)/EWT(m)/BDS AFFTC/ASD Pad JD/HW/WB

ACCESSION NR: AP3005317 S/0181/63/005/008/2116/2127

AUTHORS: Yefimov, O. N.; Yelistratov, A. M. 64 60

TITLE: Effect of disturbances arising during exsolution of supersaturated solid solutions of Ni in Ge and of Cu in Ge on the anomalous transmission of x-rays

SOURCE: Fizika tverdogo tela, v. 5, no. 8, 1963, 2116-2127

TOPIC TAGS: solid solution, Ni, Ge, Cu, x-ray, dislocation density, exsolution, integral intensity, disorientation zone, nonhomogeneous deformation, anomalous transmission

ABSTRACT: A considerable effect on the integral intensity of anomalous x-ray transmission has been found experimentally. Preparation of samples has been described previously by the authors (FTT, 5, 1871, 1963). Integral intensities were measured by a two-crystal spectrometer in the Bragg-Laue setup, with the crystal positions (2-2) for reflection from (220) of Ge and with CuK_{α} radiation (the symmetrical case of Laue). From analysis of changes in integral characteristics during exsolution and reverse solution, some light has been shed on the nature of disturbances in crystals during exsolution. The greatest change in integral characteristics was observed for the exsolution of Ni from Ge in which the limit

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ACCESSION NR: AP3005317

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of possible concentration had been obtained. For all samples of solid solution the dislocation density remained lowest during exsolution and reverse solution. On the basis of the experimental data, it is proposed that disorientation zones exist without dislocation boundaries. These zones are thought to be the result of reverse (elastic) nonhomogeneous deformation of the original crystal by seeds of the precipitating phase, these being removed during reverse solution. It is hoped that the results will permit use of anomalous transmission to investigate disturbances arising at various stages of exsolution, including the very initial stage. "In conclusion the authors thank the student A. T. Pavlenkovich for his considerable aid in treating the results of the experiment." Orig. art. has: 4 figures and 2 tables.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors, Academy of Sciences, SSSR)

SUBMITTED: 23Feb63 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: PH NO REF SOV: 008 OTHER: 004

Card 2/2

I 39938-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/HW

ACC NR: AP6015456 (N) SOURCE CODE: UR/0181/66/008/005/1394/1401

AUTHOR: Datsenko, L. I.; Yefimov, O. N.; Yelistratov, A. M. (Deceased)

ORG: Institute of Semiconductors AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR); Institute of Semiconductors, AN SSSR, Leningrad (Institut poluprovodnikov AN SSSR)

TITLE: Study of defect interaction by the method of anomalous transmission of x-rays

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1394-1401

TOPIC TAGS: crystal vacancy, crystal dislocation, crystal impurity, spectrometer, crystal defect

ABSTRACT: The intensity of the anomalous transmission of x-rays was measured on a two-crystal spectrometer in the Bregg-Laue position for the (220) reflections of dislocation-free Ge containing a small amount of impurities. Changes in the integral characteristics of the transmission were analyzed to study the interaction of vacancies with impurity atoms, vacancies, dislocations, and the interaction of defects during retrograde decomposition of the solid solution of Cu in Ge. When the crystal is heated to high temperatures, interaction of defects (vacancies, impurities, dislocations) takes place and appears as a change in the degree of crystal perfection, which can be evaluated quantitatively from $\Delta\mu_i$ and Δy_i; from an analysis of sufficiently large $\Delta\mu_i$ and Δy_i for each specific case, it is possible to establish the nature of the defect in-

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L 39938-66
ACC NR: AP6015456

teraction. In the case of uniformly distributed vacancies in the volume of the crystal and interstitial impurities of Cu and Ni, the influence of these defects on the degree of crystal perfection is apparently additive. Gradual cooling of crystals from high temperatures and prolonged low temperature annealing of hardened crystals lead to interaction of statistically distributed vacancies. The diffusion of Cu and Ni results in a partial solution of coagulates through the separation of individual vacancies which facilitate the diffusion process. Vacancies statistically distributed in the volume of the crystal react with dislocations and are absorbed by them. Phenomena are less pronounced during retrograde decomposition which takes place during the annealing of crystal at temperatures above those for maximum solubility. Orig. art. has: 1 figure, 1 table.

SUB CODE: 20/ SUBM DATE: 16Sep65/ ORIG REF: 012/ OTH REF: 004

Card 2/2 HS

SHEREMET, Anatoliy Danilovich; TATUR, S.K., prof., otv. red.; YEFIMOV, O.S., red.; LAZAREVA, A.V., tekhn. red.

[Analytical principles of the economics of an industrial enterprise; an aid to students of applied economics] Osnovy analyza ekonomiki promyshlennogo predpriiatiia; v pomoshch' izuchaiushchim konkretnuiu ekonomiku. Moskva, Izd-vo Mosk. univ., 1961. 90 p. (MIRA 14:11)
(Chemical industries--Accounting)

SAVINSKIY, D.V., prof.; BOYARSKIY, A.Ya.; PODVARKOV, G.A.; CHEKANSKIY, N.A.; GROMYKO, G.L. TRUDOVA, M.G.; YEFIMOV, O.S., red.; KOZLOVA, T.A., tekhn. red.

[Economic statistics]Ekonomicheskaia statistika; kurs lektsii. Pod red. D.V.Savinskogo. Moskva, Izd-vo Mosk. univ., 1962. 270 p. (MIRA 16:2)

1. Moscow. Universitet. Kafedra statistiki.
(Statistics)

OSAD'KO, Mikhail Petrovich; YEFIMOV, O.S., red.; KOZLOVA, T.A., tekhn. red.

[The cooperative form of agricultural production under socialism]Kooperativnaia forma sel'skokhoziaistvennogo proizvodstva pri sotsializme. Moskva, Izd-vo Mosk. univ., 1963. 117 p. (MIRA 16:3)

(Collective farms)

YEFIMOV, P.

Manufacture of artificial leather. IUn.tekh. 4 no.2:8-9 F '60. (MIRA 13:6)
(Leather, Artificial)

YEFIMOV, P.

Bee sting as medicine. IUn.tekh. 4 no.11:30-31 N '59.
(MIRA 13:4)

(Venom--Therapeutic use)

YEFIMOV, P.

This is how the cutting tools are "baked." IUn. tekh. 3 no.8:8 Ag '59. (MIRA 12:12)
(Metal-cutting tools) (Ceramics)

YEFIMOV, P.

New kind of dried friut. IUn.tekh. 3 no.7:27 Jl '59.
(MIRA 13:8)

(Fruit--Evaporation)

YEFIMOV, P.

Sluice on wheels. IUn.tekh. 5 no.9:8 S '60. (MIRA 13:10)
(Sluices)

YEFIMOV, P., general-polkovnik

Let's ensure the security of our motherland. Komm.Vooruzh.Sil 2 no.19:10-17 O '61. (MIRA 14:9)

1. Pervyy zamestitel' nachal'nika Glavnogo politicheskogo upravleniya Sovetskoy Armii i Voyenno-Morskogo Flota.
(Russia---Armed forces)

YEFIMOV, P.

Substituting for metal. IUn.tekh. 6 no.9:63 S '61. (MIRA 14:10)

(Oil well casing) (Soil stabilization)

YEFIMOV, P.

New footwear for motor vehicles. IUn.tekh. 6 no.11:9 N '61.
(MIRA 14:11)

(Motortrucks--Tires)

YEFIMOV, P., general-polkovnik

Members of the Communist Youth League are active assistants of the army and navy party organizations. Komm.Vooruzh.Sil 2 no.6:8-16 Mr '62. (MIRA 15:3)

1. Pervyy zamestitel' nachal'nika Glavnogo politicheskogo upravleniya Sovetskoy Armii i Voyenno-Morskogo Flota.
(Russia--Armed forces--Political activity)

YEFIMOV, P.

Demobilized tanks are used for milk transportation. IUn.tekh.
6 no.3:3-4 Mr '62. (MIRA 15:4)
(Milk--Transportation)

YEFIMOV, P. A. and Kh. Sh. LIPIN

"The TsEP-2M Automatic Color Pyrometer"

The Kirov District of Leningrad Strives for Technological Progress; Collection of Articles, Leningrad, Sudpromgiz, 1957. 171pp.

This collection of articles describes the progressive experience of the industrial plants of the Kirov district of the city of Leningrad in the fields of shipbuilding, machine building, instrument-making, casting, hydrolytic and other industries. New manufacturing methods are discussed.

AVERKIYEV, N.P.; YEFIMOV, P.A.; MAKAROV, N.A.

[Collective farm "XX Partsʺezdʺ] Kolkhoz imeni XX partsʺezda. Leningrad, Lenizdat, 1959. 125 p. (MIRA 13:12)
(Collective farms)

YEFIMOV, P. D.

Medical aid to animals in Udomel rajon, Kalinin oblast.

So: Veterinariya; 22; 6; June 1945, Unclassified (TABCON)

Senior Veterinarian, Udomel rayon

AUTHOR: Efimov, P.G., Engineer. 96-7-23/25

TITLE: Graphical determination of free spans for self-compensation of L-shaped pipe lines in district heating systems. (Graficheskoye opredeleniye svobodnykh plech pri samokompensatsii G-obraznykh truboprovodov teplovykh setey.)

PERIODICAL: "Teploenergetika" (Thermal Power) 1957, Vol.4, No. 7, pp. 88 - 90 (U.S.S.R.)

ABSTRACT: The article describes a graphical method of making calculations for the compensation of thermal expansion of L-shaped pipe lines in district heating systems. The presence of bends can only be used for self-compensation provided that the pipes can move freely in both longitudinal and transverse directions. Analytical determination of the length of free span necessary for self-compensation is laborious and graphical methods are not available. The formulae and auxiliary graphs given in the article permit of rapid determination of the necessary length of free spans for various sections from the bend to the fixed support. The permissible stress in bending due to compensation is usually taken as

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Graphical determination of free spans for self-compensation of L-shaped pipe lines in district heating systems. (Cont.) 96-7-23/25

800 kg/cm^2. The graphs may also be used for determining the elastic strength of bent pipes on the span between directing supports (with one degree of freedom of movement) and the bend. Three formulae necessary in the calculation are given together with two graphs and three tables for the determination of various auxiliary factors. Two worked examples of calculations of pipework are included. There are 3 figures and 3 tables.

AVAILABLE:

Card 2/2

YEFIMOV, Petr Ivanovich; BARINOV, V.A., red.; KOMAR'KOVA, L.M., red. izd-va; ROMANOVA, V.V., tekhn. red.

[Measurement of degrees by Russians at Spitsbergen from 1899 through 1901] Russkoe gradusnoe izmerenie na Shpitsbergene v 1899-1901 gg. Moskva, Izd-vo geodez. lit-ry, 1958. 83 p.
(Spitsbergen--Arc measures) (MIRA 11:9)

BORSHCHEVA, T.P.; YEFIMOV, P.I.

Structural control network used in the construction of mine buildings. Sbor. nauch. trud. KGRI 18:89-92 '62. (MIRA 17:5)

YEFIMOV, P. I.

"Russian Astronomical-Geodetic Activities on Spitsbergen." Cand Tech Sci, Moscow Inst of Land Utilization, 6 Jan 55. (VM, 27 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

YEFIMOV,P.I., kandidat tekhnicheskikh nauk; DUDAL',F.R., inzhener; POTAPOV,V.S., inzhener, redaktor; KHITROV,P.A., tekhnicheskiy redaktor

[Flushing operation for locomotive FD in one shift; work practice of a brigade at the Krasnyy Liman-Sever depot of the Donets K.I. Panichev Railroad Line] Promyvochnyi remont parovozov FD za odnu smenu; opyt raboty brigadira kompleksnoi brigady depo Krasnyi Liman-Sever Donetskoi dorogi K.I.Panicheva. Moskva, Gos.transp. zhel-dor izd-vo, 1955. 61 p. (MLRA 9:3)
(Locomotives--Repair)

OLESHKO, G.I., kand. tekhn. nauk; YEFIMOV, P.I., kand. tekhn. nauk; FRENKEL', E.M., inzh.; KONAREV, N.S., inzh.; NAZAROV, I.F., inzh. (Khar'kov)

Increase the daily average mileage of diesel locomotives up to 900-1000 km. Zhel. dor. transp. 41 no.10:59-62 O '59. (MIRA 13:2)

(Diesel locomotives--Performance)

YEFIMOV, P.I.

Russian geodesists on Spitsbergen; from the history of arc measurements. Let. Sev. 3:120-129 '62. (MIRA 15:8)

1. Krivorozhskiy gornorudnyy institut, kafedra geodezii.
(Spitsbergen--Geodetic research)

S/035/62/000/011/064/079
A001/A101

AUTHOR: Yefimov, P. I.

TITLE: Precalculation of accuracy of triangulation traverse elements

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 11, 1962, 22 - 23, abstract 11G172 ("Sb. nauchn. tr. Krivorozhsk. gornorudn. in-t", 1961, no. 10, 146 - 150)

TEXT: Formulae are proposed for precalculation of weights of elements of a triangulation traverse adjusted for conditions of figures and bases in which the form (breaks) of the traverse is taken into account in addition to side dimensions, shape and number of triangles. The inverse weight $1/P_{S_k}$ of the connecting side of the traverse and inverse weights $1/P_{x_k}$, $1/P_{y_k}$ of coordinates of vertices of the traverse intermediate angles should be calculated by the formulae:

$$\frac{1}{P_{S_k}} = \frac{2}{3} S_k^2 [q]_1^k \left(1 - \frac{\frac{2}{3}[q]_1^k}{[q]_1^n}\right);$$

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Precalculation of accuracy of...

$$\frac{1}{P_{x_k}} = \frac{2}{3}\left\{[R_x^2 Q]_1^k + [R_y^2]_1^k - \frac{\frac{2}{3}[R_x Q]_1^{k^2}}{[q]_1^n}\right\};$$

$$\frac{1}{P_{y_k}} = \frac{2}{3}\left\{[R_y^2 Q]_1^k + [R_x^2]_1^k - \frac{\frac{2}{3}[R_y Q]_1^{k^2}}{[q]_1^n}\right\},$$

where

$$Q = \operatorname{ctg}^2 A + \operatorname{ctg}^2 B + \operatorname{ctg} A \operatorname{ctg} B,$$

$$q = \operatorname{ctg}^2 A + \operatorname{ctg}^2 B,$$

R_x and R_y are projections of distances D from the end point to the preceding points onto axes x and y. Magnitudes of R_x, R_y and D are taken from the drawing of the network.

V. Sinyagina

[Abstracter's note: Complete translation]

Card 2/2

YEFIMOV, P.I.

Calculating the weight of the e t side of a base network. Sbor.nauch.trud. KGRI no. 21:114. (MIRA 17:7)

YEFIMOV, P. L.

1468 Russkiye astronomo-geodezi-cheskiye raboty na shpitsbergene. M., 1954. 18 s. 20 sm. (M-Vo vyssh. obrazovaniya SSSR. Mosk. in-t zemleustroystva) 110 ekz. B. ts.---(54-53733)

SO: Knizhaya Letopis', Vol. 1, 1955

YEFIMOV, P.L., otv.red.; PROTOPOPOV, V.S., red., FLAUM, M.Ya. tekhn.red.;

[Manual for the preparation of aerological yearbooks. Pt.1. Wind observations from a single point]. Rukovodstvo po podgotovke aerologicheskikh ezhegodnikov. Leningrad, Gidrometeor. izd-vo. Pt.1. Odnopunktnye vetrovye nabiudeniia. 1958. 66 p. (MIRA 11:9)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby.
(Winds)
(Meteorology--Observers' manuals)

PINEGIN, G.N., mladshiy nauchnyy sotrudnik; LYSIKOVA, V.M., nauchnyy sotrudnik; PORCHKHIDZE, S.A., nauchnyy sotrudnik; SEMINA, N.A., nauchnyy sotrudnik; SOLOPOV, A.V., nauchnyy sotrudnik; RADUS, A.I., nauchnyy sotrudnik; STEL'MAKH, F.N., nauchnyy sotrudnik; YEFIMOV, P.L., otvetstvennyy red.; PROTOPOPOV, V.S., red.; FLAUM, M.Ya., tekhn. red.

[Manual for the preparation of aerological yearbooks] Rukovodstvo po podgotovke aerologicheskikh ezhegodnikov. Leningrad, Gidrometeor. izd-vo. Pt.3. [Temperature sounding of the atmosphere] Temperaturnoe zondirovanie atmosfery. 1956. 126 p. (MIRA 11:9)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. 2. Glavnaya geofizicheskaya observatoriya (for Pinegin). 3. TSentral'naya aerologicheskaya observatoriya (for Lysikova, Porchkhidze, Semina, Solopov). 4. Nauchno-issledovatel'skiy institut aeroklimatologii (for Radus, Stel'makh).
(Radio meteorology)

YEFIMOV, P.L.; KHACHATRYAN, A.M.

Accuracy of determining the direction and velocity of winds at different altitudes by the "Malachite" radiotheodolite. Trudy TSAO no.31:83-92 '59. (MIRA 12:9)
(Winds) (Radio meteorology) (Theodolites)

S/789/62/000/043/001/005

AUTHOR: Yefimov, P. L.

TITLE: Principles of the rational positioning of a network of atmospheric temperature- and wind-sounding stations.

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy, no.43. Moscow, 1962, 3-9.

TEXT: The paper evolves a method for the determination of the error in the interpolation of the air temperature (T) as a function of the distance between upper-air sounding stations. An optimal distance (D) between stations (S) is determined, and basic principles for the rational placement of T and wind (W) sounding S's for the USSR are expounded. A brief summary of the history of the USSR aerological sounding network is given, and a new attempt is made to arrive at a network affording minimal interpolation errors (IE). The quantity employed as a measure of the variability of the air T and the W velocity, and hence of the extrapolation error (EE), is the mean-square deviation of the difference of these meteorological elements (ME) at two sounding S's in a given horizontal plane from the square of the mean difference. This quantity, it can be shown, is a function of the inter S D. From the EE we can calculate the IE, defined as the mean-square difference

Card 1/3

between the interpolated and the observed values of a ME at a given point, and can be obtained experimentally by using three colinear S's. Inasmuch as this is impossible in the existing USSR network, Drozdov's and Shepelevskiy's formulas for the IE for the midpoint of a straight line formed by two given S's and for the center of a triangle formed by three S's is employed. These formulas are now expanded to account for the r.m.s. IE. The calculated values of the T and W errors for different inter-S D's and elevations (H) are tabulated. It is apparent that at levels above 6 km the T IE increases only up to 200 km and remains constant at greater D's. Hence, any determination of the optimal inter-S D must be based on the 2-to-5-km atmospheric layer, in which a stable correlation between S's prevails. It is concluded that for T soundings the optimal inter-S D is 300-400 km (T error at the center of a triangle at 5 km H: 1.5°C; W error: 3.6 m/sec), which may be stretched to 600 km in thinly settled regions (T error: 2.1°C; W error: 4.7 m/sec); optimal D in cyclonic and jet-stream areas: 250-300 km; D>600 km are undesirable, <250 km unnecessary, because any gain in IE is insignificant in comparison with the T and pressure measurement errors (tabulated for three representative Soviet radiosonde types); closest spacing in high-density air-traffic areas should be no closer than 150 km. Brief comparative remarks are made on D.C.House's paper (see refs. on Card 3/3), in which D's of 120-170 km are recommended to ensure a constant-pressure-surface H error of no more than 1.5 dkm. British S's

are 200-280 km apart, USA S's 400 km, with 250-300-km distances in some high-density areas. The present USSR network comprises 180 S's (D tabulated), the recommended network 295 S's. The most inadequately observed areas (Arctic, Okhotsk, and Black Seas) need 8-10 floating aerological S's. There are 4 tables and 8 references (6 Russian-language Soviet and 2 English-language US: House, D.C., Monthly Weather Review, no.3, 1960; Holloway, L., An indirect method for determining radiosonde error and optimum station spacing, US Weather Bureau, Washington, D.C., January 1957).

ASSOCIATION: None given.

YEFIMOV, P.I., dotsent, kand. tekhn. nauk

Preliminary calculation of the accuracy of elements in a triangulation series. Sbor. nauch. trud. KGRI no.15:110-113 '63. (MIRA 17:8)

L 42981-65 EEO-2/EWT(d)/FBD/FSS-2/EWT(l)/EEC(k)-2/EEC(f)/FCC/EWA(d)/EEC-4/
T-2/EEC(c)-2/EED-2/EWP(l) Pm-4/Pn-4/Po-4/Pq-4/Pac-4/Pg-4/Pae-2/Pk-4/Pl-4
ACCESSION NR: AP5008771 UR/0050/65/000/004/0047/0050

AUTHOR: Yefimov, P. L.

TITLE: Central network computing telemetric system "Atmosphere" for processing the results of radio sounding

SOURCE: Meteorologiya i gidrologiya, no. 4, 1965, 47-50

TOPIC TAGS: meteorology, computer, data processing, atmosphere, aerological sounding/ Ural 4 computer, Atmosphere computing telemetric system, Agat sounding station

ABSTRACT: The author describes the construction and functioning of the telemetric computer system "Atmosphere," a device for receiving, processing, and transmitting aerological information to predicting devices. The electronic arrangement of "Atmosphere" consists of two level operational systems, one being a sounding station and the other a network computing center. Figure 1 on the Enclosure is a block diagram of the "Agat" sounding station, which uses a "Malakhit" theodolite, input, computing, and output devices, and an automatic register. The computation center consists of a "Ural-4" computer and supplementary devices: input and calculation devices, a control and communications console, and an output perforating machine. Figure 2 on the Enclosure is a block diagram of the functional parts of the center.

Card 1/2

L 42981-65
ACCESSION NR: AP5006771

A specially designed computer program decodes and edits aerologic information at high speed and processes the information according to a given algorithm which accounts for temperature, pressure, and humidity data, isobar surfaces, and other sounding data. Results of using the system were compared to those obtained from hand processing of similar data and were found to be very favorable. A discussion of characteristic speeds, accuracies, and general system capabilities is given. Orig. art. has: 3 figures.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00 ENCL: 02 SUB CODE: ES, DP

NO REF SOV: 000 OTHER: 000

Card 2/4

YEFIMOV, P.L.

The central interconnected calculating telemetric system "Atmosfera" for processing the results of radiosoundings. (MIRA 18:4)
Meteor. i gidrol. no.4:47-50 Ap '65.

1. TSentral'naya aerologicheskaya observatoriya.

YEFIMOV, P.L.

Method of studying the surface three-kilometer layer of the atmosphere by means of radiosondes. Trudy TSAO no.67:41-54 '65. (MIRA 19:1)

AUTHORS: Russo, V.L., Engineer and Yefimov, P.N.

TITLE: The Effect of Low-Frequency Vibrations on Weld Metal Crystallization and on Properties of Welds (Vliyaniye vibratsii nizkikh chastot na kristallizatsiyu metalla svarochnoy vanny i svoystva metalla shva)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 11, pp 10-12 (USSR)

ABSTRACT: No exact data exists on the effect of vibration on the crystallization of weld metal. It is assumed that changes in crystallization are caused by the breaking-up of growing crystals. Investigations were carried out to determine the dependence of dendrite-destroying forces on the vibration technology. A formula is given to calculate the specific pressure pulses formed in the crystallizing metal, which are a major factor of the vibration effect on weld metal crystallization. At a certain value (of these pulses) the ends of growing dendrites are destroyed, the splinters of them form additional crystallization centers and a fine and disoriented structure of initial crystallization. It was stated that the higher frequency entails regression of initial grain size and increased tough-

The Effect of Low-Frequency Vibrations on Weld Metal Crystallization and on Properties of Welds

ness. Vibration in the investigated range can be used in normal welding technology for aluminum alloys. A 25-60 cycle frequency of 0.5-1.5 mm amplitude can be used for slag-bath welding of steel. It is necessary to develop the use of elastic oscillations in an ultrasonic range for a more complete refinement of initial crystallization structure in the welding of steel.

There are 3 graphs, 2 diagrams, 1 photo and 9 Soviet references.

1. Welds--Properties 2. Metals--Crystallization
3. Vibration--Metallurgical effects

YEFIMOV, P.

Artificial satellites and television. IUn.tekh. 5 no.3:42 Mr '61. (MIRA 14:6)
(Artificial satellites in telecommunication)

BRAGIN, Nikolay Alekseyevich; YEFIMOV, P.N., redaktor; SKVORTSOV, I.M. tekhnicheskiy redaktor.

[Transporting and spreading peat slurry] Transport i razliv gidromassy. Moskva, Gos. energ. izd-vo, 1955. 131 p. (MLRA 8:8) (Peat)

VELLER, M.A., professor; ABKHAZI, V.I., kandidat tekhnicheskikh nauk; ANTONOV, V.Ya., dotsent; VLASOV, V.P., kandidat tekhnicheskikh nauk; KIRYUDCHEV, A.M., kandidat tekhnicheskikh nauk; RAPIOVETS, I.L., dotsent; SIPKIN, M.A., dotsent; YEFIMOV, P.N., redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor

[Hydro peat technology] Tekhnologiia gidrotorfa. Izd. 2-oe, perer. Pod red. M.A.Vellera, Moskva, Gos.energ. izd-vo, 1956. 362 p. (MLRA 9:11)
(Peat industry)

OLENIN, A.S.; YEFIMOV, P.N.

Peat resources of Western Siberia and outlook for their utilization.
Izv. Sib. otd. AN SSSR no.4:3-12 '58. (MIRA 11:9)

1.Glavnoye upravleniye torfyanogo fonda pri Sovete Ministrov RSFSR, Moskovskiy torfyanoy institut.
(Siberia, Western--Peat)

YEFIMOV, P.N., dots.

Questions of the ability of peat to compete with other types of fuel.
Torf.prom. 35 no.2:31-32 '58. (MIRA 11:5)

1. Moskovskiy torfyanoy institut.
(Peat)

YEFIMOV, P.N., dots.

Capacity of peat briquets to compete with other types of domestic fuel. Torf. prom. 35 no. 4:32 '58. (MIRA 11:7)

1. Moskovskiy torfyanoy institut.
(Briquets(Fuel))
(Peat)

YEFIMOV, P.Ye., inzh.; MAKSIMOV, Yu.P., inzh.

Establishing decade schedules for the start-up of the production and the output of parts using the "Ural-2" electronic computer. Vest.mashinostr. 43 no.8:80-85 Ag '63. (MIRA 16:9)
(Electronic computers) (Machinery industry--Management)

KIRSANOV, A.I.; YEFIMOV, R.I.

Air shot drilling in frozen ground. Trudy VITR no.3:85-94 '61. (MIRA 15:7)

(Boring--Cold weather conditions)
(Frozen ground)

ACC NR: AP6033826 SOURCE CODE: UR/0256/66/000/010/0064/0068

AUTHOR: Yefimov, R. V. (Engineer; Colonel); Zubkov, V. A. (Engineer; Major); Kugoyev, A. P. (Engineer; Major)

ORG: none

TITLE: Alphanumerical display

SOURCE: Vestnik protivovozdushnoy oborony, no. 10, 1966, 64-68

TOPIC TAGS: digital computer, digital system, antiaircraft defense, military communication, alphanumeric display, AIR DEFENSE SYSTEM

ABSTRACT: An alphanumerical display is used in the air-defense system for the high-speed collection and simulation of important data on military positions, action taken by the air-defense forces, meteorological conditions, and air-defense-force readiness. The alphanumerical display operates on a cold-cathode thyratron, which simplifies the device, decreases its cost, decreases the amount of electricity used, and assures operational reliability; if necessary, the cold cathode thyratron can replace the electron tubes and semiconductor devices which are favored for military use. The system works on the electroluminoflavin principle. Orig. art. has: 7 figures and 1 table. [WH]

SUB CODE: 09, 15/ SUBM DATE: none

Card 1/1 UDC: none

YEFIMOV, S.

25-6-20/46

SUBJECT: USSR/Metallurgy

AUTHOR: Yefimov, S., Engineer

TITLE: The Blast Furnace Discloses its "Secrets" (Domna otkryvayet svoi "sekrety")

PERIODICAL: Nauka i Zhizn' - June 1957, #6, pp 45-47 (USSR)

ABSTRACT: This article deals with a new method of measuring the movements of blast-furnace charges. Details of this kind are needed for establishing the most rational shape of blast-furnaces to make them more and more productive. Radioactive isotopes were placed in the charging materials and then measured how long it took them to reach the bottom of the furnace. To enable such a procedure, the blast-furnace had to be furnished with a whole series of platforms and observation holes at certain intervals. Furthermore, a special equipment for measuring the radioactivity of the charges had to be designed. The results of these measurements were recorded by a specially constructed radiometric apparatus that was set up in a control room. The first results of these observations showed already that the charging materials moved faster in the center of the blast-furnace than along their peripheries.

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25-6-20/46

TITLE: The Blast Furnace Discloses its "Secrets" (Domna otkryvayet svoi "sekrety")

The article contains 4 pictures.

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress.

Card 2/2

Yefimov, S.

AUTHOR: Yefimov, S., Engineer 25-8-25/42

TITLE: Automatic Testing of Transformers (Transformatory proveryayutsya avtomaticheski)

PERIODICAL: Nauka i Zhizn', 1957, # 8, p 48 (USSR)

ABSTRACT: Recently, Soviet industry constructed a device for the automatic testing of radio transformers, the so-called APT-US (Avtomat proverki transformatorov). This device makes it possible to test transformers of any construction, according to a special program. To begin with, a standard transformer is inserted into this automat, in order to compare the transformers to be tested with the standard one. Punched cards are used to operate the device. In front of the automat are two platforms with transparent covers for switching on the transformers. This cover can be removed only after the termination of the test, at which time the high voltage is switched off. If the test shows any deviation from the standard transformer, the test is interrupted, a corresponding lamp is lit, the percentage of deviation is shown on a dial, and then the test is continued. While one transformer is being tested the next one is being installed. This device can test 1,000 - 1,500 transformers in one shift, which is

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substantially higher than that of manual tests, and it is capable of controlling 17 items of electrical characteristics. On the average, the test takes 20 seconds.

The device works on 220 volt ac and has a power consumption of 300 watt .

AVAILABLE: Library of Congress

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AUTHOR: Yefimov, S. (correspondent for this journal) SOV/25-58-12-16/40

TITLE: There, Where There Was Steppe (Tam, gde byla step')

PERIODICAL: nauka i zhizn', 1958, Nr 12, pp 43-46 (USSR)

ABSTRACT: The author reports about his impressions gained during a visit to the Lisichanskiy khimkombinat (the Lisichansk Chemical Combine), and the town of Severodonetsk. The author obtained information from the head of the "Liskhimpromstroy", P.F. Novikov, who gave a review of this large construction-assembly trust. After building the Lisichansk Chemical Combine, P.F. Novikov was put in charge of constructing all chemical projects in the Lugansk oblast', expanding and rebuilding the Donetskiy sodovyy zavod imeni V.I. Lenina (The Donetsk Soda Plant imeni V.I. Lenin), the Rubezhanskiy khimkombinat (the Rubezhnoye Chemical Combine), and the Kadiyevskiy sazhevyy zavod (the Kadiyevka Soot Plant). At the present time, "Liskhimpromstroy" is engaged in construction work at 9 chemical plants. The Lisichansk Chemical Combine aims to increase its production capacity

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by more than 6 times. Construction work on dwellings has also been stepped up considerably. In 1956, 14,000 sq m of living space were built, in 1957, 28,000 sq m, and plans call for 56,000 sq m in 1959. In order to meet the requests of the May Plenary Session of the Central Committee, the capacity of the "Liskhimpromstroy will be doubled during the 7-Year Plan. There are 7 photos.

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SOV/25-59-8-39/48

AUTHOR: Yefimov, S.

TITLE: On a New Science With an Ancient Name

PERIODICAL: Nauka i zhizn', 1959, Nr 8, pp 74-75 (USSR)

ABSTRACT: The author of this article gives a review of the book "Bystreye mysli" (Quicker than Thought) written by N. Kobrinskiy and V. Pekelis and published by the Publishing House of the "Molodaya Gvardiya", Moscow, in 1959. There is 1 photograph and 1 Soviet reference.

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