

DROGON, Jerzy, mgr inż.

Electrolytic regeneration of chromic acid solutions. Przegl
mech 23 no. 8: 242-244 25 Ap'64

1. Wytwarzanie Sprzętu Komunikacyjnego, Rzeszów.

DROGOSZEWSKI, Bohdan

Experiments in weed control by using herbicides in forest nurseries. Roczniki wuz szkola rol Poznan 14 31-34 '63.

1. Department of Forest Cultivation, College of Agriculture, Poznan.

DROGOSZEWSKI, Bohdan; PACYNIAK, Cezary

Experiments in generative and vegetative multiplying of
Ailanthus altissima (Mill.) Swingle. Roczniki wuz szkola
rol Poznan 14 35-38 '63.

1. Department of Forest Cultivation and Department of
Sylvan Botany, College of Agriculture, Poznan.

DROGOVEYKO, I.Z., inzh.

Subaqueous trench work in rocky soils under winter conditions.
Mont.i spets.rab.v stroi. 22 no.10:21-22 0 '60, (MIRA 13:9)

1. Trest Soyusvzryvrom.
(Yenisey River--Pipeline)

DROGOVEYKO, I.Z., inzh.; KOLODOCHKIN, Yu.S., inzh.

Experience with the blasting substance of the Mining Institute of
the Academy of Sciences of the U.S.S.R. in drilling and blasting.
Mont. i spets. rab. v stroi. 25 no.5:26-28 My '63.

(MIRA 16:7)

(Blasting)

GOLUBENTSEV, A.N. [Golubentsev, O.M.] (Kiyev); DROGOVCH, A.M.
[Drohovoz, A.M.] (Kiyev)

Limiting values of the parameters of an integral equation of
vibration. Prykl.mekh. 7 no.4:388-395 '61. (MIRA 14:9)

1. Institut mekhaniki AN ^USSR.
(Vibration)

DROGOVOZ, A.M.

16.8000

S/198/62/008/004/002/006
D407/D301

AUTHORS: Holubentsev, O.M. and DrohovoZ, A.M. (Kyyiv)

TITLE: On criteria of aperiodic stability of motion

PERIODICAL: Prykladna mekhanika, v. 8, no. 4, 1962, 379 - 388

TEXT: Aperiodicity criteria are obtained which are closer to the sufficient conditions of aperiodic motions than those obtained in earlier works. The characteristic polynomial is taken in the form

✓c

$$x^n + a_0 x^{n-1} + a_1 x^{n-2} + \dots + a_{n-1} = 0. \quad (5)$$

It is assumed that all the coefficients of (5) are positive. A change of variables $x=a_0 y$ is effected and the notation $c_j = a_j / a_0^{j+1}$ is introduced. Thereupon polynomial (5) assumes the form:

$$y^n + y^{n-1} + c_1 y^{n-2} + \dots + c_{n-1} = 0. \quad (6)$$

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On criteria of aperiodic stability ...

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It is required that the roots of (6) be real and negative. After calculations, one arrives at the following criterion: The roots of polynomial (6) are real and negative, only if its coefficients satisfy the inequality

✓c

$$\frac{(n-1) \dots (n-k)}{(k+1)! n^k} \left[1-k \sqrt{1-\frac{2n}{n-1} c_1} \right] \left(1+k \sqrt{1-\frac{2n}{n-1} c_1} \right)^k \leq c_k \leq \frac{(n-1) \dots (n-k)}{(k+1)! n^k} \left[1+k \sqrt{1-\frac{2n}{n-1} c_1} \right] \left(1-k \sqrt{1-\frac{2n}{n-1} c_1} \right)^k \quad (21)$$

The lower bound of the coefficients c_k can be written in more accurate form (expressed by inequality (22)). The accuracy of Euler's criteria for aperiodic stability is compared with the obtained inequalities ((21) and (22)). The comparison is effected by means of 2 examples: the cubic equation

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On criteria of aperiodic stability ...

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D407/D301

$$x^3 + x^2 + c_1x + c_2 = 0.$$

(25)

and the polynomial of the 4-th degree

$$x^4 + x^3 + c_1x^2 + c_2x + c_3 = 0.$$

(26)

✓c

The comparison showed that the proposed criteria are more accurate than Euler's criteria. Hence inequalities (21)(22) can be used for determining the values of the coefficients, so as to obtain aperiodic motions. There are 5 figures and 2 tables.

ASSOCIATION: Instytut mekhaniky AS UkrRSR (Institute of Mechanics of the AS UkrRSR)

SUBMITTED: March 10, 1962

Card 3/3

(BR)

ACCESSION NR: AP4010374

S/0198/64/010/001/0100/0105

AUTHOR: Drogovoz, A. M. (Kiev)

TITLE: Damping of the transient process in the shortest time

SOURCE: Prikladna mekhanika, v. 10, no. 1, 1964, 100-105

TOPIC TAGS: transient process, damping n-th order differential equation, constant coefficient, rapid damping

ABSTRACT: An analysis of differential equation

$$x^{(n)} + a_{n-1}x^{(n-1)} + a_{n-2}x^{(n-2)} + \dots + a_1x' + a_0x = 0$$

is presented. This is an equation of n-th order with constant coefficients (n being understood to be an even number). By exchanging the variable

$$x(t) = y(t)e^{-\frac{a_0}{n}t}$$

and argument

$$t = \frac{t}{Vb_0}$$

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ACCESSION NR: AP4010374

this equation takes on the form

$$y^{(n)} + y^{(n-2)} + c_1 y^{(n-3)} + \dots + c_{n-2} y = 0.$$

The solution of the last equation produces the sum of two functions

$$y(\tau) = y_1(\tau) + y_2(\tau).$$

Analysis of the results obtained indicates that function $y_1(\tau)$ is limited (coefficients c_2, c_4, \dots, c_{n-2} are governed by condition

$$y_1^{(n)}(\tau) + y_1^{(n-2)}(\tau) + c_2 y_1^{(n-3)}(\tau) + c_4 y_1^{(n-4)}(\tau) + \dots + c_{n-2} y_1(\tau) = 0,$$

introduced by O. M. Golubentsev and A. M. Drogovoz (Pro gremichni snacherniya parametriv integral'nogo ravnaniya kolivan', Prikladna mekhanika, t. VII, v. 4. 1961). Since $y(\tau)$ is an increasing function, $y_2(\tau)$ must be increasing, and when coefficients $c_1, c_3, c_5, \dots, c_{n-3}$ approach zero, function $y_2(\tau)$ also approaches zero. Considering the relation between coefficients $c_1, c_3, c_5, \dots, c_{n-3}$ and

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ACCESSION NR: AP4010374

coefficients a_0, a_1, \dots, a_{n-1} of the original differential equation as being expressed by formulas

$$b_l = \binom{n}{l} \left(-\frac{a_0}{n}\right)^l + a_0 \binom{n-1}{l-1} \left(-\frac{a_0}{n}\right)^{l-1} + a_1 \binom{n-2}{l-2} \left(-\frac{a_0}{n}\right)^{l-2} + \dots + a_{l-1} \binom{n-l}{0} \left(-\frac{a_0}{n}\right)^0 \quad (l = 2, 3, \dots, n)$$

and

$$a_j = \frac{b_{j+2}}{b_n (\sqrt{b_n})^j} \quad (j = 1, 2, \dots, n-2),$$

the authors arrive at that relation between coefficients a_0, a_1, \dots, a_{n-1} at which

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ACCESSION NR: AP4010374

damping of the transient process occurs most rapidly. Orig. art. has: 24 formulas.

ASSOCIATION: Institut mekhaniki AN URSR (Institute of Mechanics AN URSR)

SUBMITTED: 02Oct63

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: MM

NO REF SOV: 003

OTHER: 000

Card 4/4

MULAREK, Olga; DABROWSKI, Stanislaw; DROGOWSKI, Marian

The electrophoretic pattern of proteins of the cerebral-spinal fluid in senile dementia. Neurol., neurochir., psychiat. Pol. 14, no. 1: 629-634 J1-Ag '64

1. Z Kliniki Neurologicznej Akademii Medycznej w Poznaniu (Kierownik: doc. dr. med. M. Wender, ; z Kliniki Psychiatrycznej Akademii Medycznej w Poznaniu (Kierownik: prof. dr. R. Dreszer) i ze Szpitala dla Nerwowo i Psychiczenie Chorych w Dziekanowcu (Dyrektor Szpitala: dr. Z. Hlaskiewicz).

MARKVART, Miroslav; VANECEK, Vojtech; DRONLAV, Radek

Fluid drying of glass sands. Sklar a keramik 14 no.11:311-312,
313 N '64.

1. Research Institute of Inorganic Chemistry, Usti nad Labem (for Vanecek and Drbohlav). 2. Institute of Inorganic Chemistry of the Czechoslovak Academy of Sciences, Prague (for Markvart).

DROJECKA, R.

Why only into high mountains? p. 10.
No. 6, June 1955. TURYSTA. Warszawa, Poland.

So: Eastern European Accession. Vol 5, no. 4, April 1956

DROJECKI, Andrzej; ZIELINSKI, Janusz

Mental complications during therapy of lupus erythematosus with
atebrine. Polski tygod.lek. 15 no.14:505-508 4 Ap '60.

1. Z Kliniki Dermatologicznej; kierownik: doc.dr H. Prochacki i
z Kliniki Psychiatrycznej P.A.M. w Szczecinie; kierownik: s-ca
prof.dr F. Piatkowski.

(QUIMACRINE toxicol.)

(LUPUS ERYTHEMATOSSES ther.)

(MENTAL DISORDERS etiol.)

DROJECKI, Andrzej

Griseofulvin -- a new antibiotic for the treatment of mycoses.
Prsegl.derm. Warsz. 47 no.6:501-510 N-D '60.

1. Z Kliniki Dermatologicznej P.A.M. w Szczecinie, Kierownik:
doc.dr H.Prochacki.
(GRISEOFULVIN ther)

PROCHACKI, Henryk; DROJECKI, Andrzej; BIELUNSKA, Sabina

Therapeutic value of griseofulvin in microsporosis and other mycoses.
Przegl. dermat. 49:221-223 '62.

1. Z Kliniki Dermatologicznej PAM w Szczecinie Kierownik: prof. dr
H. Prochacki.

(GRISEOFULVIN) (TINEA)

POLAND

WINIARSKI, Wacław and DROJECKI, Andrzej; First Clinic of Internal Diseases (I Klinika Chorób Wewnętrznych) (Director: Prof. Dr. Foliks BOLECHOWSKI) and Clinic of Dermatology (Klinika Dermatologiczna) (Director: Prof. Dr. Henryk PROCHACKI), both of PAM [Pomorska Akademia Medyczna, Pomeranian Medical Academy] in Szczecin

"Elektrocardiogram Tracings in Scleroderma."

Warsaw, Polski Tygodnik Lekarski, Vol 18, No 29, 15 Jul 63, pp 1060-1065

Abstract: [Authors' English summary] Authors report seven cases of generalized scleroderma (5 women and 3 men) aged 21-62, two of which died with symptoms of circulatory failure. In all the patients the eeg tracings shows abnormalities, mostly lowering of the QRS voltage, flattening or inversion of the T wave, and levelling of the ST wave. Ventricular fibrillation was noted in one case. There are 32 references: One (1) Soviet, 6 Polish, one (1) German, and the other Western, primarily in English.

1/1

AUTHOR: Drok, A.I., Chief Mechanic 127-58-4-26/31

TITLE: Modernization of the Joints of the SE-3 Excavator (Modernizatsiya uzlov ekskavatora SE - 3)

PERIODICAL: Gornyy Zhurnal, 1958, Nr 4, pp 71-73 (USSR)

ABSTRACT: SE-3 excavators have been used by the Yelenovskoye rudoupravleniye tresta Ogneupornerud (Yelenovka Mining Administration of the Ogneupornerud Trust) since 1946. The repair shop of the mine modernized the joints of this excavator by replacing small pins with larger ones; building protective covers over the sockets of the excavator to shield them from pieces of rocks, etc. There are 8 figures.

ASSOCIATION: Yelenovskoye rudoupravleniye tresta Ogneupornerud (Yelenovka Mining Administration of the Ogneupornerud Trust)

Card 1/1 1. Earth moving equipment - Design 2. Mines - Equipment

AUTHOR: SOV/127-58-12-19/26
Drok, A.I., Mining and Electromechanical Engineer

TITLE: The Modernization of the Operating Mechanism of the Excavator SE-3 (Modérnizatsiya napornogo mekhanizma ekskavatora SE-3)

PERIODICAL: Gornyy zhurnal, 1958, Nr 12, pp 60 - 62 (USSR)

ABSTRACT: The author proposes minor changes in the working parts of the operating mechanism of the SE-3 excavator, which will double the life of the cog wheels and the gear racks of the handles. This unit is produced by Uralmashzavod (ZTM), the Magnitogorskiy zavod gornogo oborudovaniya (the Magnitogorsk Plant of the Mining Equipment)(MZGO), and the Krivoy Rog Plant of Mining Equipment "Kommunist"(KZGO). The proposed modernization is very simple and can be carried out by any industrial installation. There are 2 diagrams and 1 graph.

ASSOCIATION: Yuzhnyy gorno-obogatitel'nyy kombinat (Yuzhnyy Mining-Concentration Combine)

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DROK, A.I., gornyy inzh.-elektronekhanik

Repairing equipment at the Southern Mining and Ore-dressing Combine.
Cor. zhur. no. 3146-54 Mr '61. (MIRA 14:3)
(Krivoy Rog Basin—Mining machinery—Maintenance and repair)

DROK, A.I., gornyy inzhener-elektromekhanik

8GR-8M pump. Gor.zhur. no.5:72 My '61.

(MIRA 14:6)

1. Krivorozhskiy Yuzhnyy gorno-obogatitel'nyy kombinat.
(Ore dressing--Equipment and supplies) (Pumping machinery)

DROK, A.I., gornyy inzh.-elektromekhanik

Protecting vacuum pumps of dressing plants. Gor. zhur. no.11:75-76
N '61. (MIRA 15:2)

1. Krivorozhskiy Yuzhnyy gorno-obogatitel'nyy kombinat.
(Vacuum pumps) (Ore dressing)

DROK, A.I., inzh.

New design of the teeth of the EKG-4 excavator for rock excavation.
Stroi. i dor. mash. 7 no.9:14-15 S '62. (MIRA 15:10)
(Excavating machinery)

DROK, A.I., insh.

Increase the life of parts of working equipment of the SE-3
and EKG-4 excavators. Stroi. 1 dor. mash. 7 no.12:3-6 D
'62. (MIRA 16:1)

(Excavating machinery--Equipment and supplies)

DROK, A.I., gornyy inzh.-elektromekhanik

Drainage in inclined trenching. Gor. zhur. no.9:73-74 S '61.
(MIRA 16:7)

1. Yuzhnyy gornoobogatitel'nyy kombinat, Krivoy Rog.
(Mine drainage)

DROK, I.T.; MYATENKO, S.Z.

Construction of storage warehouses is an important task, Sakh.
prom. 33 no.6:17-18 Je '59. (MIRA 12:8)

1. Gorodishchenskiy sakharnyy zavod.
(Sugar--Storage) (Warehouses)

DROK, I.T.

Technical, industrial, and financial plan for sugar factories.
Sakh.prom. 34 no.2:46-48 F '60. (MIRA 13:5)

1. Gorodishchenskiy sakharanyy zavod.
(Sugar industry)

S/035/62/000/011/069/079
A001/A101

AUTHOR: Drok, M. K.

TITLE: On the problem of correction in elevation for the combined effect of Earth's curvature and vertical refraction in geodetic leveling for short distances

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 11, 1962, 25, abstract 11G180 ("Nauchn. zap. Lvovsk. politekhn. in-t. Ser. geod.", 1962, no. 7, 3 - 30)

TEXT: The author describes field investigations of the vertical refraction effect on the results of geodetic leveling with short sighting rays, carried out by the workers of the geodesy department of the L'vov Polytechnic Institute in May 1956. The investigations consisted in multiple measurements of vertical angles at Point B during 12 days. Observations were made with rods provided with three sighting marks, (at heights 1, 2 and 3 m) mounted at six points located at distances 400 - 1,000 m from Point B. Vertical angles were measured every hour by two observations. Every time, upper, middle and lower marks on the rods of all six points were observed. During the first observations, the OT-02 theodolite

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was set on the conventional stand ($h=1.56$ m), and during the second observation - on a high stand ($h=3.02$ m). Simultaneously with angular measurements were conducted also meteorological observations. Elevations between the points were determined in advance by geometric leveling. Vertical angles were simultaneously measured by reciprocal observations in two directions. The rms error in measuring a vertical angle amounted to $\pm 0".9$. The author considers specific features of temperature distribution in the ground air layer and analyzes in detail the observational results, arriving at the following main conclusions. Errors due to refraction are of positive sign (refraction increases the vertical angles measured) in morning, during 1 - 2 hours after sunrise, and in evening, 1 - 2 hours before sunset, whereas during the larger part of the day they are of negative sign (refraction decreases the vertical angles measured). Positive errors due to refraction are the largest during sunrise and sunset, and negative are the largest during the hours about noon. The course of diurnal variation of refraction errors is the same for different weather conditions, but their magnitude depends, to a considerable degree, on the state of weather. Introduction of corrections in elevations due to combined effect of Earth's curvature and refraction according to the formula $f = 0.43 (d^2/R)$ during geodetic leveling for distances up to 1 km is

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not substantiated, since refraction index varies in the ground air layers within very wide range, considerably differing from 0.14 in absolute magnitude, and has the negative sign during the larger part of the day. The absolute value of refraction index decreases with increasing line length and with sighting ray height over the ground surface. There are 9 references. ✓

A. Ostrovskiy

[Abstracter's note: Complete translation]

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42999
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A001/A101

3.4000 (4303)

AUTHOR:

Drok, M. K.

TITLE:

The accuracy of determining elevations in traverses of geodetic leveling with short rays in a hilly country

PERIODICAL:

Referativnyy zhurnal, Astronomiya i Geodeziya, no. 11, 1962, 8 - 9, abstract 11684 ("Nauchn. zap. L'vovsk. politekhn. in-t. Ser. geod.", 1962, no. 7, 31 - 39)

TEXT:

In order to study the accuracy of geodetic leveling with short directional rays and the effect of vertical refraction on elevations, elevation traverses were run in a hilly country. The traverses were run through the points of a polygonometric network consisting of three polygons totalling 12.2 km. The average separation between points was ~ 370 m. Elevations between the points were determined by geometric leveling; the rms error was ± 3.9 mm per 1 km of traverse. Geodetic leveling was carried out from the sunrise to sunset. Vertical angles were measured with an OT-02 theodolite by four observations. Observations were made of marks located on a rod at heights of 1, 2 and 3 m. At

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the same heights the air temperature was measured with Assman thermometers. The rms error in measuring the inclination angle by one observation while sighting the upper mark amounted to $\pm 1''$.1, the middle mark $\pm 1''$.4, and the lower mark $\pm 1''$.5. The rms error in determining elevation in one direction, calculated with allowance for the error m_α and errors in measuring distance between points (1 : 25,000), instrument height (± 1.5 mm) and the sighting mark height (± 0.5 mm), turned out to be ± 2.3 mm. The rms errors of elevation per 1 km traverse, calculated from polygon misclosures, amounted to ± 21 mm in one-way determination of elevations, ± 4 mm in two-way determination, and ± 10 mm in leveling from the middle. To judge on the effect of refraction, were calculated differences δh between elevations determined by geodetic and geometric levelings. Refraction index was calculated by the formula: $k_E = \frac{\delta h}{p}$, (p is correction for Earth's curvature) and from meteorological data according to the formula:

$$k_M = \chi_0 + \varepsilon \frac{c}{h}, \quad (1)$$

(see RZhAstr, 1956, no. 2, 1433). Results of calculations have shown that in air layers near the ground surface refraction index varies from 3.00 to -2.85

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during a day. On the basis of investigations performed, the following conclusions have been drawn: 1) Vertical refraction is the main error source in one-way geodetic leveling with short rays; in leveling from the middle (across the point) this effect is partially compensated. In two-way leveling, errors due to residual effect of refraction bear the appearance of random errors. Two-way geodetic leveling can be carried out during the whole day, excluding hours of strong oscillations of rod images and 1 - 2 hours after sunrise and prior to sunset. 2) Introduction of corrections for refraction at one-way leveling using a factor determined in advance, does not yield desirable results for small distances. Introduction of refraction correction according to Formula (1) improves measurement results, but calls for an additional expenditure of time and means for determination of temperature gradients while measuring vertical angles. X

V. Sinyagina

[Abstracter's note: Complete translation]

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8/035/62/000/012/043/064
A001/A101

AUTHOR: Drok, M. K.

TITLE: An investigation of accuracy of elevation determinations in short-distance geodetic leveling in plain countries

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 12, 1962, 9, abstract 12068 ("Nauchn. zap. L'vovsk. politekhn. in-t. Ser. geod.", 1962, no. 6, 183 - 199)

TEXT: To study accuracy of geodetic leveling, elevation traverses totaling 18 km were laid out in the region of Galich. Distances between points were measured with a 48-m steel wire with accuracy of 1/20,000. Elevations between ends of each side of the traverse were determined by the 3rd class geometric leveling; the rms error of leveling was ± 3.4 mm per 1 km of traverse. Geodetic leveling was conducted during ~~two~~ days from sunrise to sunset. Vertical angles were measured by means of an OT-02 optical theodolite. Marks of the rods at heights of 1, 2 and 3 m were observed. At every station were measured air temperature (at heights of 0.5, 1.5 and 3 m over the ground), pressure and force of

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An investigation of accuracy of...

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wind, and cloudiness and quality of images were registered. The rms error in determining elevations, calculated with allowance for errors in inclination angle measurements, instrument height and height of sighting marks, amounted to ± 3.4 mm. Refraction indices were calculated by the formulae:

$$k_n' = \frac{\delta h_n'}{p}, \quad k_n'' = \frac{\delta h_n''}{p},$$

where $\delta h_n'$ is divergence of elevations determined from direct geodetic leveling and geometric leveling, $\delta h_n''$ is divergence of elevations determined from reverse geodetic leveling and geometric leveling, p is correction in elevation for Earth's curvature. On the basis of an analysis of investigation results the following conclusions have been drawn: vertical refraction is the main source of errors in short-range geodetic leveling in plain countries. In two-way leveling and leveling from the middle, refraction effect is compensated (at equal distances to the forward and back rods and sighting mark height of 2 - 3 m) to a considerable degree, refraction index varies from +2.37 to -4.80 during a day. Geodetic leveling can be performed during the whole day, excluding hours of strong image fluctuations and also 1.5 hours after sunrise and before sunset.

[Abstracter's note: Complete translation]
Card 2/2

Ye. Klyushin

L 00796-67

ACC NR: AR6004312

SOURCE CODE: UR/0270/65/000/010/0021/0021

AUTHOR: Drok, M. K.

TITLE: A study of the daily variation of discrepancies in the excesses of geodetic leveling in a triangle

SOURCE: Ref. zh. Geodesiya, Abs. 10.52.186

REF SOURCE: Geod. kartogr. i aerofotos"yanka. Resp. mexhved. nauchnotekhn. sb., vyp. 1, 1964, 25-34

TOPIC TAGS: triangulation, meteorologic observation, geodesy, refractive index

ABSTRACT: The zenith distances to marks along the sides of a triangle whose vertices are situated on the slopes of a valley were measured simultaneously during 3 days in July (every hour) and 9 days in September (every even hour). The transit lines (1.0 km < s < 2.8 km) were for the most part at a height of ~ 50 m. In all, 415 series of bilateral measurements were made along each side of the triangle. Second-class geometric leveling with an rms error of ± 1.6 mm/km was performed between the vertices of the triangle. Meteorological observations were also made at each point. The obtained results confirmed earlier conclusions (RZh, 1963, 8.52.78) on the daily variation in the refractive index when the direction is reversed and when changing from one direction to another. In the daytime, the refractive index was close to 0.14. It was established that the night, morning, and evening observations with

UDC: 528.024.4

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L 00796-67

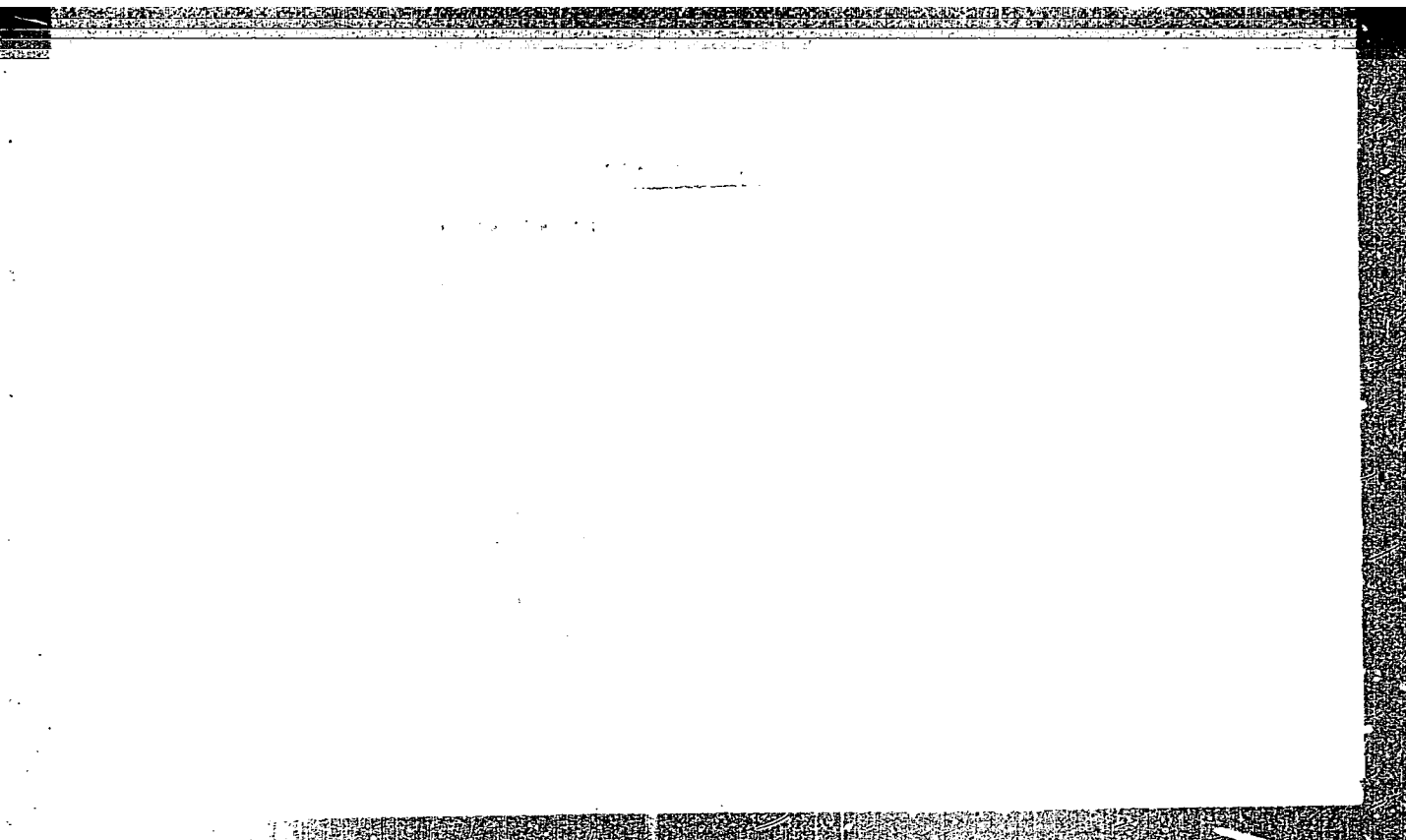
ACC NR: AR6004312

unilateral geodetic leveling contained refractive errors which were greater by an approximate factor of 2 than in the daytime hours. In nonsimultaneous bilateral leveling with intervals of 2, 4, 6, 8, and 10 hrs between measurements "forward" and "backward," the average discrepancies in the excesses in the triangle were, respectively, 36, 34, 44, 22, and 15 mm (for the July period) and 23, 33, 29, 10, and 2 mm (for the September period). When the "direct" July and "reverse" September measurements with the same time intervals were used, the average discrepancies were 40, 46, 50, 38, and 24 mm; when the "direct" September and "reverse" July observations were used, the average discrepancies were 19, 28, 26, 16, and 22 mm. It was concluded that the discrepancies in the triangle with nonsimultaneous bilateral leveling did not exceed the tolerances for fourth-class geometric leveling. Better results of nonsimultaneous geodetic leveling with the transit line at a considerable height can be obtained with symmetric arrangement of the "forward" and "reverse" observations relative to meridian time. A. Trofimov (Translation of abstract)

SUB CODE: 08

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mjs



KATAYEV, S.I.; KURDOV, L.I.; KHROMOV, V.P.; UL'YANGV, V.N.; DROKHOV, A.N.

Experimental electronic rear projection system in the Moscow
Television Center. Vest. svyazi 22 no.5:3-6 My '62.

(MIRA 15:5)

1. Sotrudniki kafedry televideniya Moskovskogo elektrotekhni-
cheskogo instituta svyazi.

(Moscow--Television stations--Electronic equipment)

BURLAKOV, Nikolay Mikhaylovich; DROKHANOVA, Ye.N., red.; KLYUCHEVA,
T.D., tekhn.red.

[Urgent task of animal husbandry; sources for increasing the
output of beef] Nasushchnaia zadacha shivotnovodstva; istochniki
uvelicheniia proizvodstva govjadiny. Moskva, Izd-vo
"Sovetskaiia Rossiia," 1959. 86 p. (MIRA 13:6)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh
nauk imeni V.I.Lenina (VASKhNIL) (for Burlakov).
(Stock and stockbreeding)

POPOV, Ivan Mikhaylovich; VASIL'YEV, V.N., red.; DROKHANOVA, Ye.N., red.;
KUZNETSOVA, G.I., tekhn.red.

[Ways for a better use of production funds on collective and
state farms] Puti luchshego ispol'zovaniia proizvodstvennykh
fondov kolkhozov i sovkhov. Moskva, Izd-vo "Sovetskaiia Rossiia,"
1960. 38 p. (Dlia slushatelei sel'skikh nachal'nykh ekonomicheskikh
shkol i krushkov. Tema 3)

(MIRA 14:1)

(Agricultural administration)

GLUKHOV, Anatoliy Aleksandrovich; VASIL'YEV, V.N., red.; DROKHANOVA, Ye.N., red.; KLYUCHEVA, T.D., tekhn. red.

[Increasing labor productivity is the path to abundance] Povyshenie proizvoditel'nosti truda - put' k izobiliiu. Moskva, Izdvo "Sovetskaya Rossia," 1960. 37 p. (Dlia slushatelei sel'skikh nachal'nykh ekonomicheskikh shkol i kruzhek. Tema no.4)

(MIRA 15:1)

(Agriculture--Labor productivity)

RASPOPOVA, Anna Ivanovna; DROKHANOVA, Ye.N., red.; YELAGIN, A.S., tekhn.
red.

[One-hundred and forty calves a year] Dvesti sorok teliat za god.
Moskva, Izd-vo "Sovetskaiia Rossiia," 1961. 15 p. (MIRA 14:11)

1. Telyatnitsa kolkhoza "Rossiya" Annenskogo rayona Voronezhskoy
oblasti (for Raspopova).

(Calves)

KRETOVA, Ol'ga Kapitonovna; DROKHANOVA, Ye.N., red.; YELAGIN, A.S.,
tekh. red.

[Nikolai Manukovskii's "universities."] Universitety Nikolaiia
Manukovskogo. Moskva, Izd-vo "Sovetskaia Rossiia, 1961. 124 p.
(MIRA 15:3)
(Manukovskii, Nikolai Fedorovich)

-- NOVIKOV, I.A.; KOTOV, G.G., doktor ekonom. nauk, red.; DROKHANOVA, Ye.N.,
red.; YELAGIN, A.S., tekhn. red.

[Knowledge of economics is the basis for able management] Zna-
nie ekonomiki - osnova umelogo khoziaistvovaniia. Moskva, Izd-
vo "Sovetskaia Rossiia," 1961. 186 p. (MIRA 15:3)
(Agriculture--Economic aspects)

ZAYTSEV, Vasil'y Vasil'yevich, Geroy Sotsialisticheskogo Truda;
DROKHANOVA, Ye.N., red.; YELAGIN, A.S., tekhn, red.

[If you have ~~succeeded~~ then help the others] Dobilsia sam -
pomogi drugomu. Moskva, Sovetskaia Rossiia, 1962. 53 p.
(MIRA 15:7)

1. Predsedatel' kolkhoza "Pobeda" Chuvashskoy ASSR (for
Zaytsev).

(Agriculture)

CHERNYAKHOVSKIY, Ivan Grigor'yevich; DEOKHANOVA, Ye.N., red.;
POPOV, N.D., tekhn. red.

[Notes of a shop foreman] Zapiski nachal'nika tsekha. Moskva, Izd-vo "Sovetskaya Rossiya," 1962. 129 p.

(MIRA 15:9)

1. Nachal'nik liteynogo tsekha Vladimirskego elektromotornogo zavoda (for Chernyakhovskiy).

(Founding)

POPOV, Vladimir Fedorovich; DROKHANOVA, Ye.N., red.; POPOV, N.D.,
tekhn. red.

[Joy of difficult roads] Schast'e trudnykh dorog. Moskva,
Sovetskaiia Rossiia, 1963. 154 p. (MIRA 16:5)
(Iron and steel workers)
(Privalov, Mikhail Moiseevich, 1913-)

VASILENKO, Mikhail Pavlovich; DROKHANOVA, Ye.N., red.; POPOV, N.D.,
tekhn. red.

[Ways to overcome seasonal work factors on collective
farms] Puti preodolenia sezonnosti truda v kolkhozakh.
Moskva, Izd-vo "Sovetskaia Rossiia," 1963. 198 p.
(MIRA 16:7)

(Collective farms)

RUKHADZE, Aleksandr Konstantinovich; RUDAKOV, Veniamin Fedorovich;
DROKHANOVA, Ye.N., red.; MARAKASOVA, L.P., tekhn. red.;
YELAGIN, A.S., tekhn. red.

[Industries of the southern Urals] Industriia IUzhnogo Urala.
Moskva, Sovetskaja ¹ossia, 1962. 141 p. (MIRA 15:7)
(Ural Mountain region--Industries)

BUDNIKOV, P.P., GIVORKYAN, Kh.O., kandidat tekhnicheskikh nauk; DROKHANOVA,
Ye.N., redaktor; BORISOV, A.S., tekhnicheskiy redaktor.

[Porcelain] Farfor; vvedenie v tekhnologiiu. Moskva, Gos. izd-vo
nestnoi promyshlennosti RSFSR, 1955. 203 p. (MLRA 9:6)

1. Deystvitel'nyy chlen Akademii nauk USSR. (for Budnikov)
(Porcelain)

BOVA, Yevgeniy Federovich; DROKHANOVA, Ye.N., red.; BUTKO, N.Ye.,
tekh.red.

[What it means to catch up with and to surpass the U.S.A.]
Chto znachit dognat' i peregnat' SShA. Moskva, Izd-vo
"Sovetskaya Rossiya," 1960. 62 p. (MIRA 13:6)
(Russia--Economic policy)

SUPONITSKIY, Samuil Abramovich; DROKHANOVA, Ye.N., red.; YELAGIN, A.S.,
tekhn. red.

[Outstripping time] Operzhaia vremia. Moskva, Izd-vo "Sovet-
skaia Rossiia," 1961. 141 p. (MIRA 14:8)
(Russia--Economic policy)

DROKIN, A.B. [deceased].

Axes of coordinates; film scenario on algebra for classes 7 and 8,
Uch. zap. Kab.ped.inst. no.8:33-41 '55. (MLRA 10:3)
(Coordinates) (Motion pictures in education)

DROKIN, A. I.

"Study of Temperature Magnetic Hysteresis of Nickel by Means of Automatic Photorecording." Cand Phys-Math Sci, Moscow Pedagogical Inst, Moscow, 1954. (RZhFiz, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

DROKIN, ALEXANDR I.

KIRINSKIY, Leonid Vasil'yevich, doktor fiziko-matematicheskikh nauk;
DROKIN, Aleksandr Ivanovich, kandidat fiziko-matematicheskikh
nauk; LIFSHITS, L., redaktor; KOKOULINA, A., tekhnicheskiy re-
daktor.

[Atomic energy and its utilization] Atomnaya energiya i ee primeneniye.
[Krasnoyarsk] Krasnoyarskoe knizhnoe izd-vo 1955. 46 p. [Microfilm]
(MIRA 10:5)

(Atomic power)

PHYSICS - Magnetism

DRÖKIN, A. I.

FD-1023

Card 1/1 Pub 146-8/25

Author : Drokin, A. I.

Title : New Method for checking the compensation of the earth's magnetic field in investigations with vertical astatic magnetometer

Periodical : Zhur. eksp. i teor. fiz. 28, 199-200, February 1955

Abstract : The author gives a new method for verifying the necessary amount of current in the coils of the vertical astatic magnetometer which compensates the vertical component magnetic field of the earth and other extraneous parasitic fields. The proposed method is based upon the use of temperature magnetic hysteresis (Ya. S. Shur. N. A. Baranova, and V. A. Zaykova, DAN SSSR, 81, 557, 1951); that is, upon the non-unique behavior of the intensity of magnetization in a constant weak magnetic field during heating and cooling of a ferromagnetic sample. Nine references.

Institution: Krasnoyarsk State Pedagogic Institute

Submitted : May 7, 1953

DROKIN, A. I.

USSR/Magnetism - Ferromagnetism, F-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34916

Author: Drokin, A. I., Il'yushenko, V. L.

Institution: Krasnoyarsk Pedagogical Institute, USSR

Title: Effect of the Method of Demagnetizing a Specimen on the Temperature Dependence of the Magnetization of Nickel in Weak Fields

Original

Periodical: Zh. eksperim. i teor. fiziki, 1955, 29, No 3, 339-344

Abstract: An investigation was made of the effect of the method of demagnetizing, produced by changing the magnetic field or by cooling from the Curie temperature, on the temperature dependence of the variation of the magnetization processes are attributed by the authors to the fact that different demagnetization methods lead to a different magnetic structure.

Card 1/1

Drokin, A.I.

Effect of the method of demagnetization of the sample on the temperature coefficient of the magnetic susceptibility of nickel in weak fields. A. I. Drokin and V. L. Byushenko. *Soviet Phys., JETP* 2, 191-4 (1956) (Engl. translation).—See C.A. 50, 3024a. H. M. R.

DROKYN, A. I., VTYURIN, N. I., VLASOV, A. I., KIRENSKIY, L. V., LKEEV, and
TUKALOV, R. I., (Krasnoyarsk)

"The Temperature and Rotation Hysteresis in Ferromagnetic Materials,"
a paper submitted at the International Conference on Physics of Magnetic
Phenomena, Sverdlovsk, 23-31 56.

DROKIN, A. I.

AUTHORS: Kirenskiy, L. V., Vlasov, A. Ya., Vtyurin, N. I. 48-7-12/26
Drokin, A. I., Ivlev, V. F., Tupalov, R. I.

TITLE: Note on the Temperature- and Circular-Hysteresis in Ferromagnetic
Substances (Temperaturnyy i vrashchatel'nyy gisterezis v ferromag-
netikakh).

PERIODICAL: Izvestiya AN SSSR Seriya Fizicheskaya, 1957, Vol. 21, Nr 9,
pp. 1262-1267 (USSR.).

ABSTRACT: In this paper experimental investigations were conducted of: 1) The
temperature hysteresis of magnetization according to the B-cycle
(cooling-heating) (TMH), 2) the temperature hysteresis of magneto-
striction (TMH), 3) the temperature hysteresis of the galvanomagne-
tic effect (THGE) according to the A-cycle (heating-cooling), 4)
the phenomenon of the "circular" hysteresis of magnetostriction was
established and investigated parallel to the study of the losses in
rotating magnetic fields. The investigations were conducted on various
samples of nickel. On the examination of the TMH' effect thick samples
showed a much more marked effect than thin ones. If further cooling
is applied, the thicker samples are subject to the effect of the de-
magnetization factor, which reduces the originally weak field. The
importance of the energy of anisotropy grows, because of which fact

Card 1/2

Note on the Temperature- and Circular-Hysteresis in
Ferromagnetic Substances.

48-9-12/26

the magnetization vectors of the domains do not arrange themselves parallel with the magnetic field, but along the easier direction of magnetization, which cannot coincide with the orientation of the weak field. It is shown, that the THM-effect diminishes with the growth of the field. No THM-effect is observed in fields of the order of magnitude of 100 Oe. Analogous observations were made in the case of the THGE-effect. The magnitude of THM and THGE depends on the initial temperature of heating and on the final point of heating (conversion point), if it is below the Curie point. Analysis of the magnetographs from the magnetic recorder showed, that the magnetostriction as well as the UHM-effect grows strongly with an increase of the field from 100 to 1000 Oe and on a further increase of the fields tends asymptotically to its maximum values. There are 11 figures and 8 Slavic references.

ASSOCIATION: State Institute for Pedagogics of Krasnoyarsk (Krasnoyarskiy gos. pedagogicheskiy institut).

AVAILABLE: Library of Congress.

Card 2/2

DROKIN, A. I.
KERENSKIY, A. V., CHERKASHIN, V. S. and DROKIN, A. I.

"Investigation of Phenomena Accompanying the Propagation of Ultrasound and Methods to be used in Work in this Field: The Effect of Ultrasound on the Ferromagnetic Properties of Matter."

report presented at the 6th Sci. Conference on the Application of Ultrasound in the investigation of Matter, 3-7 Feb 1958, organized by Min. of Education RSFSR and Moscow Oblast Pedagogic Inst. im N. K. Krupskaya.

DROKIN, A. I., LAPTEY, D. A. and SMOLIN, R. P. (Krasnoyarsk)

"Studies of the Temperature Magnetic Hysteresis on the Points of the Hysteresis Loop."

Nickel and Iron-nickel alloy samples had been studied for this purpose.

DROKIN, A. I. with Kirenskiy, L. V. and Cherkashin, V. S. , " The results of the Influence of Ultrasonic Waves on the Magnetic Properties of Ferromagnetics at Various Temperatures."

paper presented at the All-Union meeting on Magnetic Structure of Ferromagnetics June 1958, in Krasnoyarsk. Meeting sponsored by Inst. of Physics, Acad. Sci. USSR, and Comm. for Magnetism, Dept Phys-Math Sci, AS USSR,

KIRENSKIY, L.V.; DROKIN, A.I.; LAPTEV, D.A.

Effect of compression on the magnetic hysteresis of nickel
under fluctuating temperature. Izv.Sib.otd.AN SSSR no.2:9-14
'59. (MIRA 12:7)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.
(Hysteresis) (Nickel)

LAPTEV, D.A.; DROKIN, A.I.

Effect of the magnetic condition of the test piece on the temperature-
magnetic hysteresis. Izv. vys. ucheb. zav.; fiz. no. 4:43-47 '59.
(MIRA 13:3)

1. Krasnoyarskiy pedinstitut i Institut fiziki AN SSSR.
(Magnetic induction)

85755

8/112/60/000/018/003/005
A005/A001

24,7900 (1035,1144,1160)

Translation from: Referativnyy zhurnal, Elektrotehnika, 1960. No. 18, p. 30,
5.9839

AUTHORS: Kirenskiy, L.V., Drokin, A.I., Cherkashin, V.S.

TITLE: On the Effect of Ultrasound on the Magnetic Properties of Ferro-
magnetics ↘

PERIODICAL: V sb.: Primeneniye ul'traakust. k issled. veshchestva, No. 9,
Moscow, 1959, pp. 131-137

TEXT: Results are presented from an investigation of the ultrasound effect on the hysteresis loop of a nickel specimen in weak magnetic fields and at various temperatures. The measurement of the intensity of magnetization of the specimen was carried out on the vertical astatic magnetometer. A considerable increase in the intensity of magnetization was detected owing to the sonic irradiation of the specimen; the growth decreased with increasing temperature (vanishing at about

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Card 1/2

85755

S/112/60/000/018/003/005
A005/A001

On the Effect of Ultrasound on the Magnetic Properties of Ferromagnetics

300°C) and was retained after finishing the sonic irradiation process. The magnetic permeability of the specimen increased, too. The results obtained are expounded. - There are 12 references. ✓

ASSOCIATION: Krasnoyarsk. ped. int, in-t fiziki AN SSSR (Krasnoyarsk Pedagogic Institute, Institute of Physics of the Academy of Sciences USSR)

M.G.S.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

71
DROKIN, A-I.

PHASE I BOOK EXPLOITATION

SOV/5526

Vsesoyuznoye soveshchaniye po magnitnoy strukture ferromagnetikov,
Krasnoyarsk, 1958.

Magnitnaya struktura ferromagnetikov; materialy Vsesoyuznogo
soveshchaniya, 10 - 16 iyunya 1958 g., Krasnoyarsk (Magnetic
Structure of Ferromagnetic Substances; Materials of the All-Union
Conference on the Magnetic Structure of Ferromagnetic Substances,
Held in Krasnoyarsk 10 - 16 June, 1958) Novosibirsk, Izd-vo
Sibirskogo otd. AN SSSR, 1960. 249 p. Errata slip inserted.
1,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut fiziki Sibirskogo
otdeleniya. Komissiya po magnetizmu pri Institute fiziki metallov
OFMN.

Resp. Ed.: L. V. Kirenskiy, Doctor of Physical and Mathematical
Sciences; Ed.: R. L. Dudnik; Tech. Ed.: A. P. Mazurova.

PURPOSE: This collection of articles is intended for researchers in
ferromagnetism and for metal scientists.

Card 1/11

Magnetic Structure (Cont.)

SOV/5526

COVERAGE: The collection contains 38 scientific articles presented at the All-Union Conference on the Magnetic Structure of Ferromagnetic Substances, held in Krasnoyarsk in June 1958. The material contains data on the magnetic structure of ferromagnetic materials and on the dynamics of the structure in relation to magnetic field changes, elastic stresses, and temperature. According to the Foreword the study of ferromagnetic materials had a successful beginning in the Soviet Union in the 1930's, was subsequently discontinued for many years, and was resumed in the 1950's. No personalities are mentioned. References accompany individual articles.

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Shur, Ya. S. [Institut fiziki metallov AN SSSR - Institute of Physics of Metals, AS USSR, Sverdlovsk]. On the Magnetic Structure of Ferromagnetic Substances

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Magnetic Structure (Cont.)

SOV/5526

Observation of the Domain Structure and the Barkhausen Effect 147

Fodichev, A. M., and M. K. Savchenko [Institute of Physics, Siberian Branch AS USSR, Krasnoyarsk]. Mechanical Barkhausen Effect in Monocrystals of Transformer Steel 151

Puzey, I. M., V. M. Lutoshkin, and A. I. Rad'kov [TsNIICHERMET - Central Scientific Research Institute of Ferrous Metallurgy]. Study of the Dynamics of the Domain Structure in an Ultrasonic Field 155

Kirenskiy, L. V., A. I. Drokin, and V. S. Cherkashin [Institute of Physics, Siberian Branch AS USSR, Teachers Institute, Krasnoyarsk]. Effect of Ultrasound on Magnetic Properties of Ferromagnetic Substances at Various Temperatures 165

Cherkashin, V. S. [Institute of Physics, Siberian Branch AS USSR, Krasnoyarsk]. Effect of Rapidly Changing Stresses

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Card 9/11

Magnetic Structure (Cont.)

SOV/5526

of a Hysteresis Loop

195

Kirenskiy, L. V., A. I. Drokin, and D. A. Lepley [Institute of Physics, Siberian Branch AS USSR, Krasnoyarsk]. Effect of Elastic and Plastic Deformations on the Magnitude of Thermomagnetic Hysteresis

201

Margolin, S. D., and I. G. Fakidov [Institute of Physics of Metals AS USSR, Sverdlovsk]. Magnetic Studies of Alloys of the Manganese - Germanium System

211

Kirenskiy, L. V., and B. P. Khromov [Institute of Physics, Siberian Branch AS USSR, Krasnoyarsk]. Study of the Approach-to-Saturation Law on Monocrystals of Iron Silicide

217

Diyakov, G. P. [Physics Department of the Moscow State University]. Current State of the Problem Concerning the Study of Parity Effects in the Approach-to-Saturation Region

227

Card 10/11

24.2200

33683
S/058/E1/000/012/053/083
A058/A101

AUTHORS: Kirenskiy, L.V., Drokin, A.I., Cherkashin, V.S.
TITLE: Effect of ultrasonic waves on the magnetic properties of ferromagnetics at different temperatures
PERIODICAL: Referativnyy zhurnal. Fizika, no. 12, 1961, 380, abstract 12E658 (V sb. "Magnitn. struktura ferromagnetikov", Novosibirsk, Sib. otd. AN SSSR, 1960, 163 - 173)

TEXT: The effect of ultrasonic irradiation on the magnetization and hysteresis loops of Ni, Permalloy and siliceous Fe in the range from -183° to $+540^{\circ}\text{C}$ was investigated. It turned out that the lower the temperature at which the experiment was carried out, the greater was the increase in magnetization brought about by ultrasonic irradiation of specimens. For Ni and Permalloy at 65°C the dependence of $\log \Delta I/I$ (where I is the magnetization) is linear. The results obtained along different crystallographic directions in a siliceous Fe single crystal are more complicated, but the variation of the $\Delta I/I=f(I)$ curve is close to exponential.

L. Boyarskiy

[Abstracter's note: Complete translation]

Card 1/1

24.2000

S/058/62/000/004/077/160
A058/A101

AUTHORS: Drokin, A. I., Laptey, D. A.

TITLE: Effect of ultrasonic waves on dynamic hysteresis loops

PERIODICAL: Referativnyy zhurnal. Fizika, no. 4, 1962, 38, abstract 4G319
(V sb. "Primeneniye ul'trakust. k issled. veshchestva". v. 12,
Moscow, 1960, 171-175)

TEXT: The authors investigated the effect of ultrasonic waves on particular hysteresis loops. They give data for closed specimens in the form of LF transformers. It is shown that the narrowing of a particular hysteresis loop depends on a decrease of the magnetizing field. In the specimen winding an alternating emf of ultrasonic frequency was induced. The greatest amplitude of these oscillations was observed on the steep part of the hysteresis loop.

[Abstracter's note: Complete translation]

Card 1/1

24.1800

S/058/62/000/004/079/160
A058/A101

AUTHORS: Brokin, A. I., Cherkashin, V. S., Smolin, R. P.

TITLE: The effect of ultrasonic waves on irreversible magnetization processes in single-crystallized nickel

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 38, abstract 4G321 (V sb. "Primeneniye ul'traakust. k issled. veshchestva". v. 13, Moscow, 1961, 181-187)

TEXT: The authors describe experiments aimed at elucidating the effect of ultrasonic waves of frequency 20 kc. on the intensity of magnetization of specimens and on the shape of their magnetization curves. The experiments were carried out on specimens of recrystallized Ni with cubic texture that had all the properties of Ni single crystals. It was established that irradiation of specimens with ultrasonic waves resulted in an increment of magnetization which had a sharply expressed maximum at field strength ≈ 4 oersteds and depended somewhat on the orientation of the specimens crystal axes. After the passing of the cycle of temperature magnetic hysteresis, the maxima of the specimens' magnetization increment are shifted to the region of weaker fields. The

JB

Card 1/2

The effect of ultrasonic waves on irreversible ...

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A058/A101.

magnetization curves of specimens after sound-irradiation and the passing of the hysteresis cycle climb to the saturation region more steeply than in ordinary specimens, a greater effect being caused by magnetic hysteresis in fields of 0 - 5 oersteds, and by sound-irradiation in fields above 5 oersteds. The described results are discussed on the basis of ideas regarding domain-boundary shifts and spin rotation under the action of ultrasonic waves. JB

I. Viktorov

[Abstracter's note: Complete translation]

Card 2/2

S/058/61/000/012/063/083
A058/A101

AUTHORS: Kirenskiy, L.V., Drokin, A.I., Laptey, D.A.

TITLE: Effect of elastic and plastic deformations on the value of temperature magnetic hysteresis

PERIODICAL: Referativnyy zhurnal. Fizika, no. 12, 1961, 385, abstract 12E699 (V sb. "Magnitn. struktura ferromagnetikov", Novosibirsk, Sib. otd. AN SSSR, 1960, 201 - 209)

TEXT: The variation of temperature magnetic hysteresis was investigated in electrolytic cold-drawn Ni and 65-Permalloy subjected to compression and elongation respectively. It was established that, regardless of the sign of magnetostriction, one-way mechanical stresses that do not exceed the yield point always lead to a decrease of temperature magnetic hysteresis. This decrease is explained by a reduction in the rôle of boundary shifts between domains, as well as by a decrease of the boundary-energy gradient. Above the yield point sharp inhomogeneities arise in the specimen, and this leads to an increase of the boundary-energy gradient and a rise of temperature magnetic hysteresis.

[Abstracter's note: Complete translation]
Card 1/1

GUREVICH, F.A., DROKIN, A.I., BARKHATOVA, I.M.

Effect of ultrasound on the early periods of plant growth. Izv.
Sib. otd. AN SSSR no. 7:83-90 '60. (MIRA 13:8)

1. Krasnoyarskiy meditsinskiy institut fiziki Sibirskogo
otdeleniya AN SSSR.
(Plants, Effect of ultrasonic waves on)

69684

S/126/60/009/03/004/033
E111/E414

24.7900

AUTHORS: Kirenskiy, L.V., Laptey, D.A., Drokin, A.I. and
Smolin, R.P.

TITLE: Temperature Magnetic Hysteresis of Silicon-Iron Single Crystals

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 3, pp 337-344 (USSR)

ABSTRACT: The authors point out that although investigation of magnetic hysteresis should be carried out on single crystals, polycrystalline specimens have only been used for temperature magnetic hysteresis studies (eg Ref 1 to 3). The present authors have used single crystal 5.4 x 0.43 x 0.076 cm specimens of 3.8% Si - iron cut by etching along the principal and intermediate crystallographic directions. Crystallographic orientation was determined by the Laue method. Before measurements, specimens were vacuum annealed at 1100°C for 4 hours and cooled slowly. Measurements were carried out with a heating-cooling cycle of +50 to ⊕ to +50°C on a vertical astatic magnetometer described previously (Ref 4). Fig 1, 2 and 3 show magnetization as a function

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69684

S/126/60/009/03/004/033
E111/E414

Temperature Magnetic Hysteresis of Silicon-Iron Single Crystals

of temperature for the $[100]$, $[110]$ and $[111]$ directions, respectively, and for various field strengths. At low field strengths (under 1 oersted) the curves in Fig 1 have two maxima and one minimum and intersect, but they become simpler with increasing field strength and at 100 oersted hysteresis is practically absent and the curve shows a continuous fall with increasing temperature. For the other directions, fields up to 3 oersted give curves with one pronounced maximum; at higher fields (100 to 150 oersted) the curves again become simpler but even at 150 oersted a maximum remains in the curve for the $[111]$ direction (Fig 3e). With specimens cut out along intermediate directions (15, 40 and 75° to the $[100]$ direction) considerably different curves were obtained. Fig 4 shows the hysteresis as a function of field strength for the main directions and one for a specimen cut out at 40° to $[100]$ (curve 4); all have a maximum. Corresponding functions for relative change in magnetization are shown in Fig 5 with an additional curve (5) for a 15° inclination to $[100]$; all curves ✓

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S/126/60/009/03/004/033
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Temperature Magnetic Hysteresis of Silicon-Iron Single Crystals

fall continuously with increasing field strength. The authors propose an explanation of their magnetization vs temperature curves on the basis of a comparison of these results with known data (Ref 7,8) on the temperature dependence of the magnetic-anisotropy and magnetostriction constants and the original domain structure. There is a discrepancy between Fig 5 and corresponding results of Baranova and Shur (Ref 9): this is attributed to differences in the alignment of the easy-magnetization axes. Fig 6 shows a series of domain structures for magnetization along $[110]$ in fields up to 30 oersted. The authors explain the similarity between magnetization vs temperature curves for polycrystalline silicon-iron specimens with those for single crystals along $[110]$ and $[111]$ by the presence in the former of more crystals with these and similar directions than with $[100]$. The authors note that the foregoing can explain occasionally observed sharp dips in magnetization vs temperature curves. There are 6 figures and

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69684

S/126/60/009/03/004/033
E111/E414

Temperature Magnetic Hysteresis of Silicon-Iron Single Crystals

9 Soviet references.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya AN SSSR
g. Krasnoyarsk (Institute of Physics, Siberian Division
of the Academy of Sciences USSR, Krasnoyarsk)

SUBMITTED: July 1, 1959

Card 4/4

S/070/60/005/006/008/009
E021/E306

AUTHORS: Dylgerov, V.D. and Drokin, A.I.
TITLE: Domain Structure on a Single Crystal of Yttrium-
iron Garnet
PERIODICAL: Kristallografiya, 1960, Vol. 5, No. 6,
pp. 945 - 950

TEXT: The ideal form of a garnet crystal is shown in Fig. 1. The single crystal used in this investigation had twelve distinct faces, two rhombodecahedral, two he-
octahedral and eight under-developed shapes. Powder figures were obtained on the faces in the usual way (Ref. 2). The faces did not require polishing before applying the powder. Fig. 2 shows photographs of the powder figures on seven of the faces in the absence of a magnetic field. The powder was found to be in parallel lines or strips, running along the large diagonal of the rhomb on the rhombodecahedral faces (first and seventh photographs, Fig. 2).
Fig. 3 shows photographs of powder figures produced on the
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Domain Structure on a Single Crystal of Yttrium-iron
Garnet

rhombodecahedral faces by magnetising the crystal along the large diagonal of the rhomb. On increasing the field to 35 Oe, the powder on some of the strips thickened and on the remaining strips the powder was thinned out. With further increase in the magnetic field, the regions with the thickened powder divided, and gradually became more diffuse. After switching off the field and demagnetising the sample, the original powder figures were obtained. When the crystal was magnetised along the least diagonal of the rhomb (perpendicular to the powder lines on the (110) face) further changes occurred. As the field was increased, some of the lines disappeared and others were intensified. The powder figures on the hexoctahedral faces {321} in the absence of a magnetic field had a complex fine structure (second to sixth photographs, Fig. 2). The figures produced when this face was magnetised were extremely

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Domain Structure on a Single Crystal of Yttrium-iron
Garnet

complicated and no photographs are shown.
There are 4 figures and 3 non-Soviet references.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya
AN SSSR (Institute of Physics, Siberian
Department of the AS USSR)

SUBMITTED: Manuary 7, 1960

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S/139/61/000/094/013/023

E073/E535

AUTHORS: Laptev, D. A. and Drokin, A. I.
TITLE: Magnetic temperature hysteresis of nickel-zinc and manganese-zinc ferrites

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Fizika, no. 4, 1961, 110-114

TEXT: The aim of the work described in the paper was to study the magnetic temperature hysteresis of nickel-zinc and manganese-zinc ferrites Φ -600 (F-600) and M-2000 as a function of the initial magnetic state. These ferrites were chosen because they are extensively used in components such as filters, Pupin coils and wide-band transformers. These materials are intended for operation at various temperatures, usually in relatively weak fields in which a magnetic temperature hysteresis is observed. The authors studied the magnetic temperature hysteresis of the second type, which is the one caused by the processes of magnetization and not that caused by changes in the crystal lattice. In the experiments the temperatures did not exceed 220°C. The specimens were solid cylinders 150 mm long

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Magnetic temperature hysteresis ... S/139/61/000/004/013/023
E073/E775

3 mm diameter of the ferrites F-600 (Fe_2O_3 - 49.0, ZnO - 51.0, NiO - 19.0% mol) and M 2000 (Fe_2O_3 - 57.8, ZnO - 17.0, MnO - 32.4% mol). The magnetic temperature hysteresis was measured according to the cycle "A" (heating-cooling) in the temperature range $+20^\circ C$ to θ to $-20^\circ C$. For a given field, the initial magnetization corresponded to the points of the initial magnetization curve and also to the points of the ascending and descending branches of the hysteresis loop. Thus, for a single value of the field, the magnetic temperature hysteresis of the ferrites was investigated for three initial magnetic states of the specimens. Prior to each measurement, the specimens were demagnetized by heating above the Curie point and subsequent cooling to the initial temperature in a zero intensity field. Remagnetization was by means of a field fluctuating between ± 55 Oe. The temperature dependence was investigated in the following fields: 0 (residual magnetization); 0.28; 0.67; 1.40; 4.41; 8.80; 12.00; 25.00 Oe. In Fig.1 the changes in the magnetization of Ni-Zn ferrites due to temperature changes are plotted for fields of the following intensities: a - 0.28, b - 0.67; b - 1.40; 2 - 4.41 Oe. The full-line curves relate to heating, and the

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Magnetic temperature hysteresis ... S/139/61/000/004/013/023
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dashed-line curves to cooling. The bottom curves relate to the initial state on the descending branch of the hysteresis loop and the top curves to the ascending branch of the hysteresis loop; the middle curves refer to the initial magnetization curve. The following conclusions are arrived at:

1. As in the case of metallic ferromagnetics, the magnitude of magnetic temperature hysteresis and the temperature dependence of the magnetization depend on the initial magnetic state. The magnetic temperature hysteresis is highest if the points on the ascending branch of the hysteresis loop are taken as the initial points.
2. The existence of magnetic temperature hysteresis was observed for the same fields for which ordinary magnetic hysteresis was observed.
3. The temperature dependence of I_r and H_c in manganese-zinc ferrites is progressive and decreases up to the Curie point. Nickel-zinc ferrites show a pronounced anomalous dependence of I_r and H_c , the nature of which has not been clarified. There are 3 figures and 11 references; all Soviet.

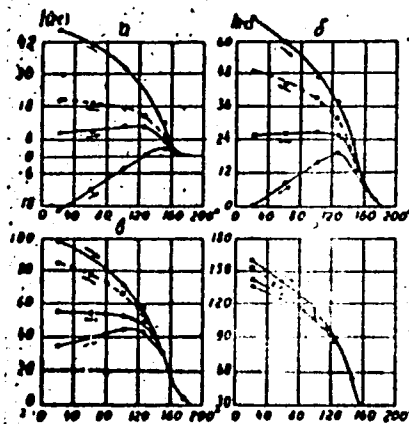
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Magnetic temperature hysteresis ...

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E073/E535

ASSOCIATION: Institut fiziki SO AN SSSR i Krasnoyarskiy
pedinstitut (Physics Institute SO AS USSR and
Krasnoyarsk Pedagogic Institute)

SUBMITTED: August 18, 1960



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Fig.1

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AUTHORS: Dylgerov, V.D. and Drokin, A.I.

TITLE: Investigation of powder patterns on single crystals of lead hexa-ferrite

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika, no.4, 1961, 120-123 + 1 plate

TEXT: The authors studied the magnetic structure of single crystals of $\text{PbFe}_{12}\text{O}_{19}$. Single crystals of this compound as well as $\text{Y}_3\text{Fe}_5\text{O}_{12}$ and $\text{PbFe}_{12}\text{O}_{19}$ were produced by A. G. Titova at the Institut poluprovodnikov AN SSSR (Semiconductor Institute AS USSR) by the method described by J. W. Nilsen and E. F. Devrborn (Ref.3: Journ. Appl. Phys., 29, 3, 390, 1958. Ref.4: J. Phys. Chem. Solids, 9, 3, 202, 1958). To obtain large crystals, a mixture of lead oxide and boron anhydride was used as a solvent; in this case the mixture was of the following composition: 7-14% B_2O_3 ; 58-45 PbO; 34 Fe_2O_3 ; 3.5 Y_2O_3 . The constituents were mixed, dried and heated in a crucible to 1340°C , maintained at that temperature for 4 hours and cooled to 950°C at a rate of 4 to $5^\circ\text{C}/\text{hour}$. By long boiling

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in a 20% aqueous solution of HNO_3 , $\text{Y}_3\text{Fe}_5\text{O}_{12}$ and $\text{PbFe}_{12}\text{O}_{19}$ single crystals were produced. The $\text{PbFe}_{12}\text{O}_{19}$ single crystals were 7 to 10 times as heavy as the $\text{Y}_3\text{Fe}_5\text{O}_{12}$ single crystals having diameters of up to 15 mm. The investigated single crystals of $\text{PbFe}_{12}\text{O}_{19}$ were 5 to 8 mm in diameter and 1.48 and 0.64 mm thick in the direction $[0001]$. The faces of the single crystals were mirror smooth and did not require polishing. The magnetic suspension was prepared in the usual way and the powder patterns were photographed through a microscope; the magnetic field was produced by means of a special electromagnet. The powder patterns were investigated on the surfaces (0001) and $(1\bar{1}00)$. Photographs of some of the obtained powder patterns are reproduced in the paper. The following conclusions are arrived at:


1. The domain structure in single crystals of $\text{PbFe}_{12}\text{O}_{19}$ is a system of plane-parallel domains, and the planes are parallel to the hexagonal axis. Similar patterns were observed by G. Sixtus, K. Kronenberg and R. Tenzel (Ref.1 J. Appl. Phys., 27, 1051-1956) and L. Pearson (Ref.2 Proc. Phys. Soc., 70B, 441, 1957)

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on crystals of $\text{BaFe}_{12}\text{O}_{19}$.

2. The magnetic structures of $\text{PbFe}_{12}\text{O}_{19}$ and of $\text{BaFe}_{12}\text{O}_{19}$ are identical to that of cobalt.
3. The structure in the plane (0001) depends on the thickness of the crystal along the hexagonal axis; in thin specimens a forked structure was observed.
4. Apparently for any hexagonal single crystals of ferrites with a magneto-plumbite structure, the magnetic structure is identical with the structure of cobalt.

Acknowledgments are expressed to A. G. Titova for producing the single crystals. There are 3 figures and 9 references: all non-Soviet. Four of the English-language references are quoted in the text. 

ASSOCIATION: Krasnoyarskiy pedinstitut i Institut fiziki SO AN
SSSR (Krasnoyarsk Pedagogic Institute and
Physics Institute SO AS USSR)

SUBMITTED: April 7, 1960

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30472

24,2200 (1137, 1147, 1164)

S/139/61/000/005/009/014
E194/E135

AUTHORS: Kiranskiy, L.V., Drokin, A.I., Cherkashin, V.S., and Smolin, R.P.

TITLE: Ideal magnetisation curves of ferro-magnetics

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no.5, 1961, 78-83

TEXT: The concept of an ideal hysteresis-less magnetisation curve of ferromagnetics has existed for a long time. Various methods of producing the ideal curves have been used, such as application to the specimen of d.c. and a.c. with amplitude decreasing to zero, application of successive heating and cooling, and also magnetic shock. It was considered that these various kinds of treatment would suffice to establish a condition of parallel magnetisation in neighbouring ferromagnetic domains. The problem of whether or not ideal curves produced in different ways coincide has still not been resolved and this was the object of the present investigation. The ideal curves were obtained by applying to the specimen direct and alternating fields of amplitude diminishing to zero, by ultrasonic mechanical shaking
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Ideal magnetisation curves of

and rapping and by temperature variation, heating the sample to temperatures both below and above the Curie point followed by cooling to the initial temperatures. For temperatures below the Curie point the process was repeated four times. The tests were made with the materials listed in Table 1. Sample 4 was highly work hardened. These compositions were chosen because they had a fairly wide hysteresis loop and comparatively low Curie points. No special heat treatment was applied because this would narrow the hysteresis loops and reduce the differences between materials. Measurements were made in a vertical astatic magnetometer. Kondorskiy's indication that the method of demagnetisation could affect the shape of the magnetisation curves was found to be true in practice. Accordingly, before every measurement the samples were demagnetised by heating to the Curie point followed by cooling in the absence of a magnetic field. Fig.2 shows graphs of the relation between the magnetisation and field for the nickel specimen No.1. The initial curve No.1 lies below all the others and only at high fields does it intersect curve 2, which was produced by ultrasonic mechanical treatment; curve 2' was

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obtained by mechanical treatment whilst reducing the magnetic field. The hysteresis-less curve could not be obtained by ultrasonic treatment because when the treatment was made more intensive the specimen failed. Curve 3 was obtained by temperature cycling, heating from 20 to 250 °C and recooling to 20 °C. Curve 4 was obtained by applying to the specimen an alternating field diminishing to zero. Very similar curves were obtained for samples Nos. 2 and 3. It was confirmed on sample No.4 that hysteresisless curves obtained in different ways approach one another and coincide if uniform mechanical stresses, within the elastic limit, are applied to the sample during the measurements. Within the elastic limit, compression of the specimen extends the hysteresis loop and it is possible that under these conditions the hysteresisless curves might differ. However, this would be difficult to check because of bending of the sample. The investigations showed that mechanical treatments (impact and ultrasonic oscillation) generally do not give hysteresisless curves. Evidently, such treatment may not be sufficient to overcome the potential energy barrier and to establish parallel

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