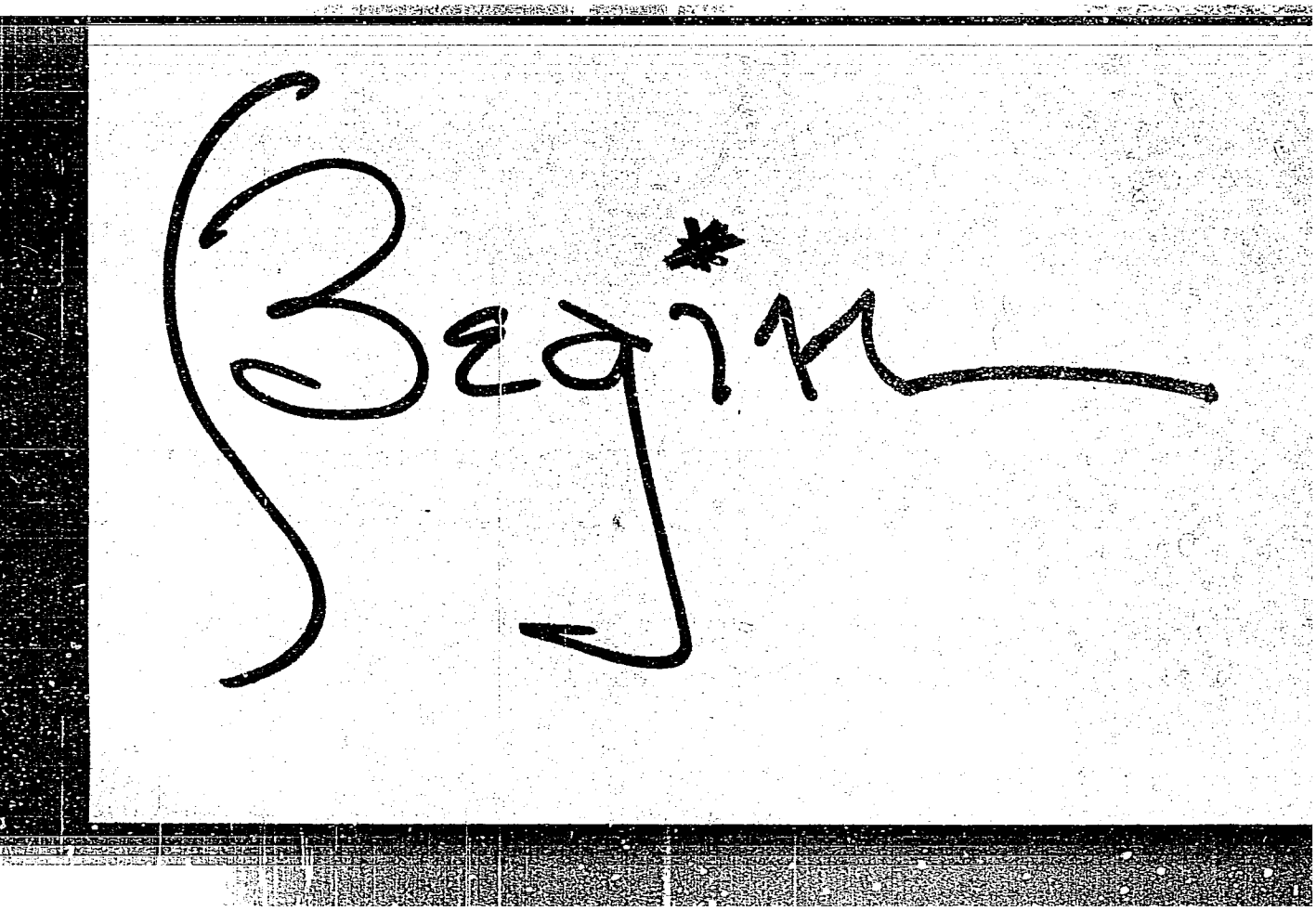

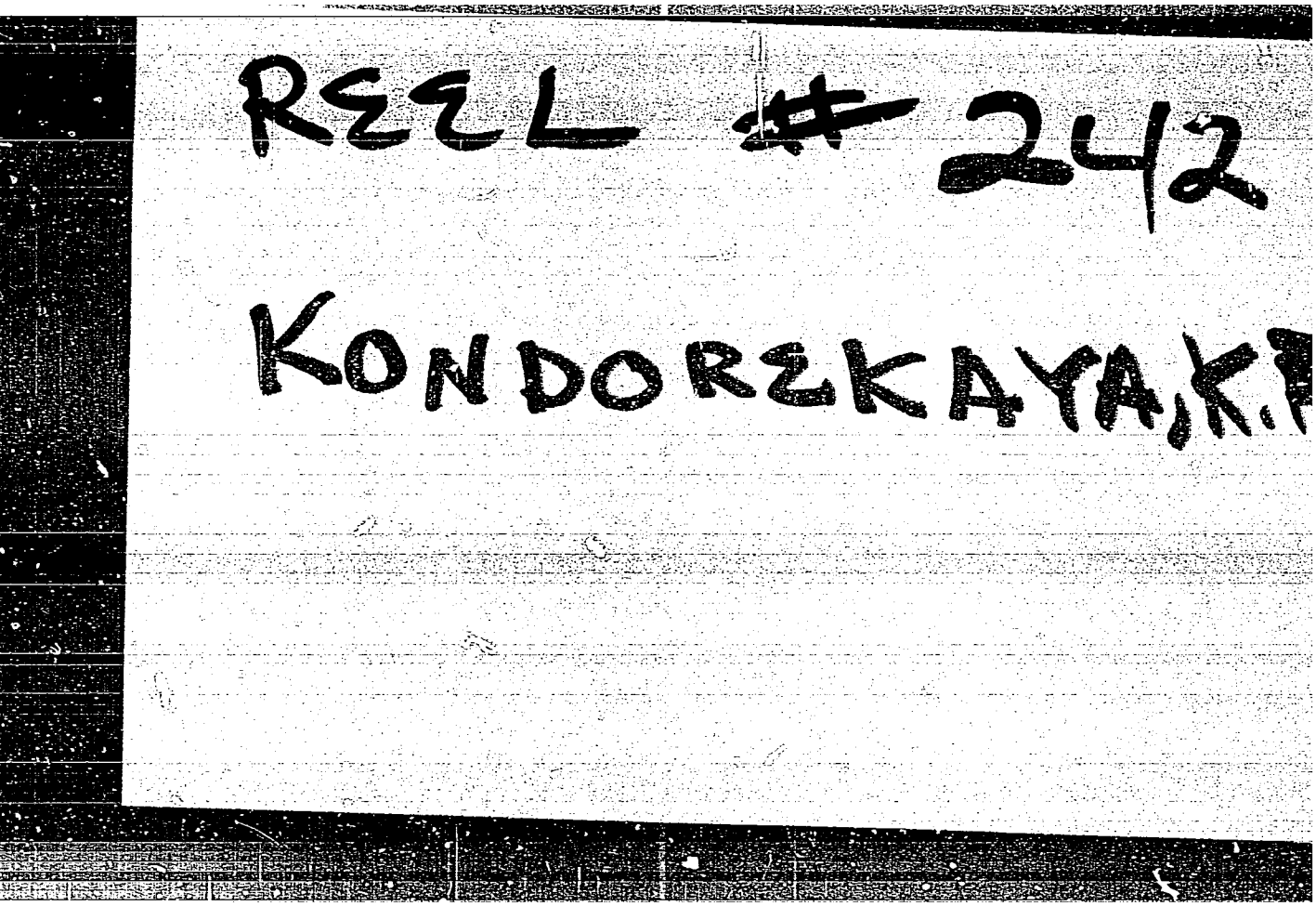

KONDORSKAYA, K.B.

Reactivity of peripheral blood vessels to vasoconstrictors in experimental cholesterin atherosclerosis. Tr. Vsesoius. obsh. fiziol. no. 1:132 1952. (CIML 24:1)

1. Delivered 26 May 1950, Moscow.

KONDORSKAYA, G.K.; KAGAN, Z.S.; KRETOVICH, V.L.

Effect of light on the dynamics of ammonium assimilation by wheat sprouts. Izv. AN SSSR Ser. biol. 30 no.1:141-144 Ja-F '65. (MIRA 18:2)

1. Institut biokhimii im. A.N. Bakha AN SSSR i Tekhnologicheskiy institut pishchevoy promyshlennosti, Moskva.

KONDORSKAYA, I.

KONDORSKAYA, I.L.

SEMENOVSKAYA, Ye. N.; KONDORSKAYA, I.L.

Distorted reactions of the visual analysor to stimulation of the eyes with red light; effect of instillation of adrenalin on electric sensitivity and lability of the visual analysor in red and green lights. Probl. fiziol. opt. no.10:63-66 '52. (MLRA 7:11)

1. Otdeleniye fiziologicheskoy optiki Gos. nauchno-issl. in-ta glaznykh bolezney im. Gel'mgol'tsa. Zav. otdeleniyem chl.-korr. AN i AMN SSSR prof. S.V.Kravkov [deceased]

(COLOR VISION,
eff. of epinephrine on electric sensitivity & lability in red & green lights)
(EPINEPHRINE, effects,
on color vision, electric sensitivity & lability in red & green lights)

KONDORSKAYA, I.V.; POSTOLENKO, G.A.

Seismic activity of the Kurile Islands--Kamchatka region for the years 1954-1956. Izv. AN SSSR Ser. geofiz. no. 9:1114-1120 '58.
(MIRA 11:10)

1. AN SSSR, Institut fiziki Zemli.
(Seismology--Soviet Far East)

~~3-(5)~~ 3. 7300

AUTHORS: Kondorskaya, I. V., Tikhonov, V. I. SOV/20-130-1-42/69

TITLE: On the Problem Regarding the Seismic Activity and Structure of Kamchatka and the Northern Part of the Kuril Island Chain

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 1, pp 146-149 (USSR)

ABSTRACT: In the present paper, the authors give new data on the structural division of the Kuril and Kamchatka seismic zone on the basis of an investigation series carried out for many years by the expanded network of seismic stations of the USSR. The mentioned zone is part of the Pacific seismic belt and seismically it is the most active one of the USSR. It belongs to a young, geosynclinal region. Former researchers: A. N. Zavaritskiy, O. S. Vyalov, B. F. D'yakov, M. V. Dvali and G. M. Vlasov (Refs 1, 8) imagined the tectonic structure of Kamchatka and the Kuril Isles to be a uniform, lineally extended system of anticlines and synclines. During earthquake investigations, a number of earthquake focus groups with the greatest density of epicenters per areal unit was found besides the linear extent along the chain. These groups are separated by boundaries running transversally to the main chain direction (Refs 2, 3). No explanation was found by the

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tectonic schemes hitherto existing. The most recent geological data have been applied in the tectonic scheme by V. I. Tikhonov (Ref 7). A number of lineally extended anticlines occur in the southern half of Kamchatka. They are separated from one another by synclinal depressions which apparently were developed in the Paleozoic era. Their structural outlay was probably maintained by the structural complexes of Cretaceous and Tertiary Systems. These fold structures form a packet. On the south-east continuation of the central part of this packet, a region of greatest earthquake density stretches from the Kamchatka coast to the Kuril-Kamchatka depression (Fig 1). The region south of the structural zone mentioned (on the continued West Kamchatka depression) however, is slightly seismic. Also north of the Shipunskiy peninsula, in the continuation of the great depression, earthquakes are less frequent. On the strength of data obtained the authors arrived at the following conclusions: the seismic zone of Kuril Isles and Kamchatka is divided into a number of transverse groups of increased and reduced seismic activity. Belts of heavy earthquakes occur in the above zone. These belts are of meridional

On the Problem Regarding the Seismic Activity and Structure of Kamchatka and the Northern Part of the Kuril Island Chain SOV/20-130-1-12/69

and south-eastern extent. The transverse directions mentioned may be closely connected to the extent of fold and fault structures of the lower structural steps. Hence an analogous interrelation may be assumed between the kinds of seismic activity and the tectonic structures of the northern Kamchatka and the Kuril Islands. The morphological contours of the great and the small Kuril chains belonging to this seismic zone, are probably due to young tectonic movements and are part of the superimposed structures. There are 1 figure and 8 references, 7 of which are Soviet.

ASSOCIATION: Geologicheskiy institut Akademii nauk SSSR (Institute of Geology of the Academy of Sciences, USSR)

PRESENTED: July 6, 1959, by N. S. Shatskiy, Academician

SUBMITTED: July 2, 1959

Card 3/3

USSR/Soil Science - Genesis and Geography of Soils. J

Abs Jour : Ref Zhur Biol., No 22, 1958, 99979

climate, was formed last year under the cover of forest vegetation; the other, to the west (a continental type of zonality), was formed in the donditions of a dry climate under the cover of green vegetation. The total scheme of the soils' horizontal zonality is disturbed by the presence in the east and northeast of expansive ancient delt plains with a hydromorphic type of soil formation and of mountain systems, the soil cover of which is subjected to the law of vertical zonality.
Bibliography of 33 titles. -- T.D. Morozova

Card 2/2

Country : USSR
Category: Soil Science. Cultivation. Improvement. Erosion.

J

Abs Jour: RZhBiol., No 14, 1958, No 63135

Author : Rozanov, A.N.; Kondorskaya, N.I.
Inst : Soil Science Institute of the A.S. of the USSR
Title : Soil Improvement Conditions of the Kirovabad-Kazakhskiy Mountain Range.

Orig Pub: Tr. Pochv. in-ta AN SSSR, 1957, 52, 5-112

Abstract: In the higher parts of the Little Caucasus foothills there are distributed dark gray-brown soils, which are distinguished by the great (more than 120 cm) thickness of the humus profile, the well-expressed carbonate-alluvial horizon and the clayey-

Card : 1/5

J

Country : USSR
Category: Soil Science. Cultivation. Improvement. Erosion

Abs Jour: RZhBiol., No 14, 1958, No 63135

The division of the Kirovabad-Kazakhskiy mountain range into regions of soil improvement is presented. -- S... Nikitin

Card : 5/5

KONDORSKAYA, N. V.

Dissertation: -- "Question on the Construction of a Hodograph for the Territory of the USSR." Cand Phys-Math Sci, Geophysics Inst, Acad Sci USSR, 16 Jun 54. (Vechernyaya Moskva, Moscow, 7 Jun 54)

SO: Sum 318, 23 Dec. 1954

KONDORSKAYA, N. V.

60-36-4/10

AUTHOR: Kondorskaya, N. V.

TITLE: Separation and Use of sP Waves in Shallow Earthquakes for Determining the Depth of a Focus (Vydeleniye volny sP pri neglubokikh zemletryaseniyakh i yeye ispol'-zovaniye dlya opredeleniya glubiny ochaga)

PERIODICAL: Trudy Geofizicheskogo instituta, AN SSSR, 1956, Nr 36, pp. 37-47 (USSR)

ABSTRACT: The author discusses the possibility of separating sP and sS waves reflected close to the epicenter (sP and sS) in recordings of earthquakes with foci located in the earth's crust at epicentral distances of 2° - 80°. An analysis of the dynamic characteristics of the sP wave, which is related to the focus mechanism, demonstrates the existence of a sufficiently intense sP wave in comparatively shallow earthquakes. The depth of the focus in the earth's crust is determined on the basis of differences in arrival times of sP and P, sPP and PP, sPPP and PPP, and sS and S waves. There are 10 figures, 6 tables, and 7 references, of which 5 are Russian and 2 English.

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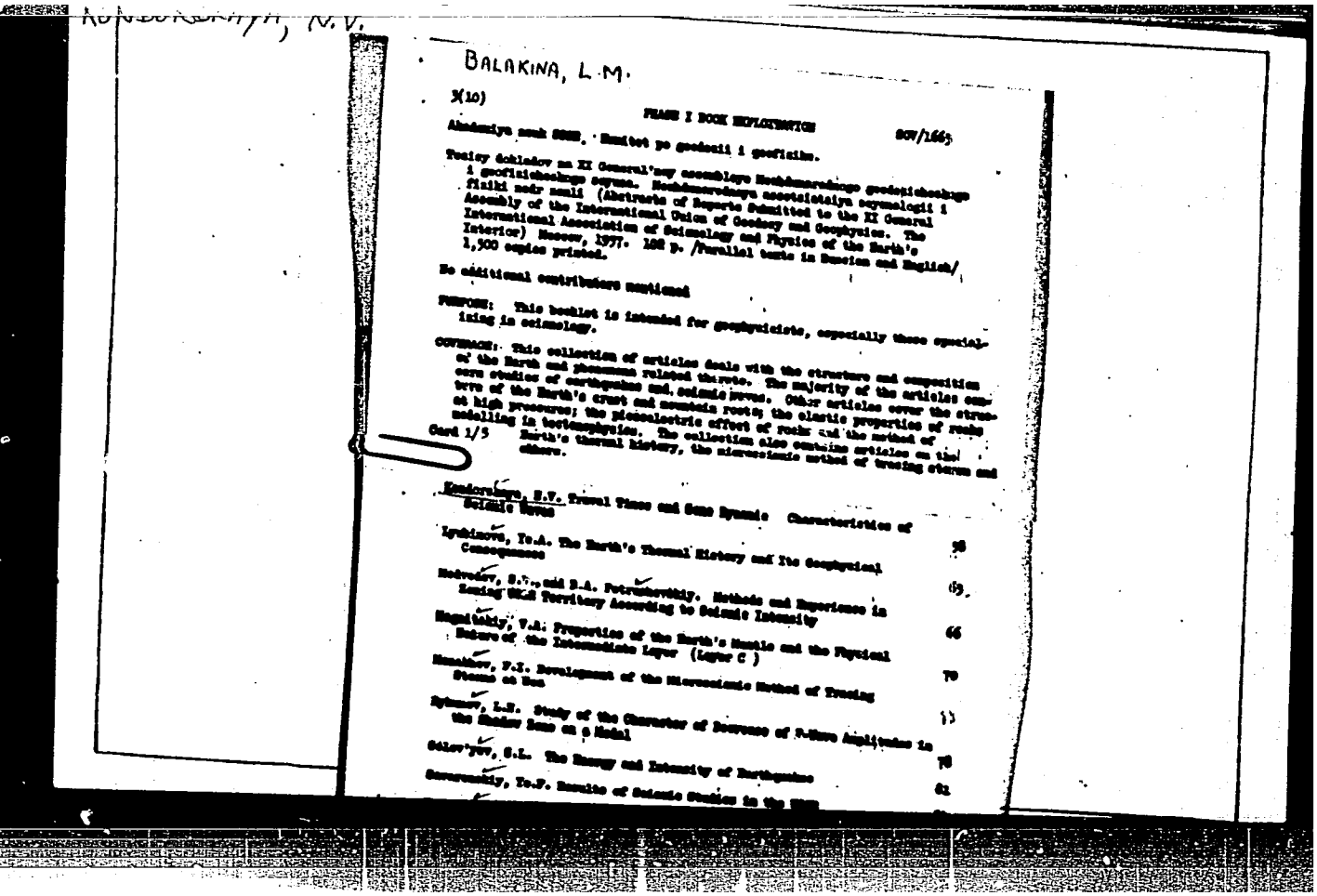

KONDORSKAYA, N.V.

BALAKINA, L.M.

X(10)

PHASE I BOOK EXPLOITATION SOV/1665

Akademiya nauk SSSR. Komitet po geodezii i geofizike.

Trudy dokladov na XI General'noy assamblyee Mezhdunarodnogo geodezicheskogo i geofizicheskogo soyuza. Mezhdunarodnaya assotsiatsiya seysmologii i fiziki nedr zemli (Abstracts of Reports Submitted to the XI General Assembly of the International Union of Geodesy and Geophysics. The International Association of Seismology and Physics of the Earth's Interior) Moscow, 1957. 168 p. /Parallel texts in Russian and English/ 1,500 copies printed.

No additional contributors mentioned

PURPOSE: This booklet is intended for geophysicists, especially those specializing in seismology.

COVERAGE: This collection of articles deals with the structure and composition of the Earth and phenomena related thereto. The majority of the articles concern studies of earthquakes and seismic waves. Other articles cover the structure of the Earth's crust and mountain roots; the elastic properties of rocks at high pressures; the piezoelectric effect of rocks and the method of modelling in tectonophysics. The collection also contains articles on the Earth's thermal history, the microseismic method of tracing storms and others.

Card 1/5

KONDORSKAYA, N.V.

Meeting of the Council on Seismology. Izv. AN SSSR. Ser.geofiz. no.1:125-127 Ja '57. (MIRA 10:3)
(Seismology)

49 - 2- 11/13

AUTHOR: Kondorskaya, N.V. and Postolenko, G.A.

TITLE: Seismicity in the Soviet Union during 1955. (Seysmichnost' SSSR za 1955 g.)

PERIODICAL: Izvestiya Akademii Nauk, Seriya Geofizicheskaya, 1957, No.2, pp.255-257 (U.S.S.R.)

ABSTRACT: A seismic activity map for 1955 showing plotted earthquakes with intensities of M ≥ 4 is given. It is based on information supplied by the bulletins of the various Seismic Stations in the USSR. The map is limited to seismic zones, the boundaries of which are given in Table 1, p.256.

The text includes four tables and one map, depicting the epicenters of earthquakes of seismically active zones of the Soviet Union for 1955. There are 5 references, 3 of which are Slavic.

Card 1/2

KONDORSKAYA, N.V.

AUTHOR: Kondorskaya, N.V.

49-7-4/14

TITLE: On the regional features of the time of transmission of seismic waves. (Po povodu regional'nykh osobennostey vremen probega seysmicheskikh voln).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1957, No.7, pp. 895-913 (USSR)

ABSTRACT: On the basis of the study of the results of observations of intensive earthquakes in the Far East (Kamchatka and the South East of the Hokkaido Island), Central Asia and Turkey, it was found that the observed transmission time of seismic waves to the stations in the Far East, Central Asia and the Caucasus are larger than those determined by means of hodographs worked out in 1939 by Jefferies and Bullen (Seismological Tables 1940). By statistical averaging corrections were found to these hodographs which enable more accurate determination of the location of epicentres. Acknowledgments are made to Ye. F. Savarenskiy for his guidance and to S. S. Mebel' and G. A. Postolenko for doing some of the computing work.
There are 20 figures, 4 tables and 11 references, 8 of which are Slavic.

Card 1/2

On the regional features of the time of transmission of seismic waves. (Cont.)

SUBMITTED: October 16, 1956.

ASSOCIATION: Institute of Physics of the Earth, Ac.Sc., U.S.S.R. (Akademiya Nauk SSSR Institut Fiziki Zemli).

AVAILABLE: Library of Congress

Card 2/2

SOV/49-58-9-7/14

AUTHORS: Kondorskaya, N.V. and Postolenko, G.A.

TITLE: Seismic Activity of Kuril-Kamchatka Region (Seysmicheskaya aktivnost' Kurilo-Kamchatskoy oblasti za 1954-1956 gg)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 9, pp 1114 - 1120 (USSR)

ABSTRACT: The seismic activities of Kuril-Kamchatka region in 1954-1956 were investigated and found to be especially intensive in S.E. Kamchatka and along the Kuril Islands. The exact positions of epicentres were determined by a method of intersection of S-P and P waves and by the application of Wadati (for near stations) and Jeffreys-Bullen (distant stations) odographs. The accuracy of distance determination was 25-50 km. The focus depth of the earthquakes was found from the tables of relationship between the time interval of sP-P and sS-S waves and the depth.
The determination of the intensity of earthquakes was based on the amplitude and period of the surface waves as measured by various stations. The number of earthquakes observed during the whole period was 219 (Tables 1-3).

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A chart (Figure 1) was prepared to show all the epicentres plotted according to their classification, intensity and depth. This chart shows the following peculiarities: all the earthquakes were directed along the Kuril-Kamchatka line and grouped in the parallel chains. The deep earthquakes (below 300 km) were found in the Okhotsk Sea. Those of the depth between 100 and 300 km were situated near the Kuril Islands, while the ones having a depth of less than 100 km were found off the east coasts of Kamchatka. Generally, the earthquakes could be divided into several groups, such as: S.E. Kamchatka, N. Kuril, E. Simushur, E. Upur and E. Iturup.

In order to determine the frequency of the earthquakes, a density chart was plotted (Figure 2). This chart was based on a number of earthquakes per unit area (1 degree^2 of longitude and latitude). The highest frequencies were found in the regions: S.E. of South Kamchatka, East of Paramushir and the Onekotan Islands.

The chart, however, could not show the most energetic centres of the earthquakes. Therefore, another chart showing the density of energy distribution was prepared

(Figure 3). It was based on an amount of energy (S) per unit of the same area as taken for the frequency chart. This chart shows six regions of various energies from which the East of Urup Island is the most energetic one. It was observed that a large number of transverse tectonic breaks were accumulated in the regions of the most active seismic activity. The region east of the Urup Island, being one of the most active areas, is situated at the juncture of the longitudinal and transverse breaks (8 in Figure 3). Here, in 1918 took place one of the most devastating earthquakes. There are 3 figures, 3 tables and 14 references, 10 of which are Soviet, 1 French and 3 English.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli
(Ac.Sc.USSR, Institute of Physics of the Earth)

SUBMITTED: August 28, 1957

Card 3/3

SOV/49 -58-12-2/17

AUTHORS: Kirnos, D. P. and Kondorskaya, N. V.

TITLE: Amplitude of Ground Movement at the Onset of a Seismic Wave (O vychislenii istinnogo znacheniya pervoy amplitudy dvizheniya pochvy pri vstuplenii seysmicheskoy volny)

PERIODICAL: Izvestiya akademii nauk SSSR, Seriya geofizicheskaya, 1958, Nr 12, pp 1443-1450 (USSR)

ABSTRACT: As a preliminary condition of the calculation, a determination of the magnification ($\overline{V}$) in the registration by a seismogram should be made. Next, a mathematical formula is found, where the displacement of soil, X , is related to time t . Thus a differential equation (1) is formed. From the graph $x(t)$ and $\bar{y}(t) = y(t)/\overline{V}$ the distortion of the seismograph can be shown in the form $X_k/X_k = \overline{U}_k$, where X_k is the V-times reduced amplitude and X_k is the amplitude of ground displacement. This formula contains the form Eq.(2) for the first amplitude. Then the true value of the amplitude of displacement is equal to

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Amplitude of Ground Movement at the Onset of a Seismic Wave

Eq.(3). If the apparatus gives no distortion, then $\overline{U}_k = \overline{U}_1 = 1$ and $X_1 = y_1/\overline{V}$ (3a). The sinusoidal character of the seismic wave having the characteristics (4) is considered. Then the Eq.(5) can be applied for the apparatus of linear registration (y - coordinate, ε_1 - coefficient of pendulum damping, n_1 - pendulum frequency, V_o - normal magnification). The coordinate y can be found from Eq.(6) (Ref.8), where U_1 - frequency characteristic, γ_1 - pendulum phase, F(t) - time function. This equation becomes Eq.(7) for the apparatus with a galvanometric registration. The indicator magnification $\overline{V}$ can be found from Eq.(8) where A_2 is the distance from the mirror of the galvanometer to the photocell. When $\sigma^2 \ll 1$, Eq.(7) can be written as Eq.(9). For the apparatus of the common type, the formula (10) can be applied, which is based on the curve (Fig.1). The first frequency characteristics can be found from Eq.(11). This characteristic for the first 3 maxima is shown in the

Amplitude of Ground
Movement at the Onset of a Seismic Wave

form of graphs in Fig.2. The registration $y(t)$ by the apparatus can be shown as Eq.(12), from which the value of the asymptote can be found for the minimum $t_1 \approx 1.6$ sec for the large T_2 (Fig.3). The relationship of $\bar{U}_1 = f(t_1)$ and $\bar{U}_1 = f(t_{III} - t_{II})$ is shown in Fig.4. The analysis of about 100 earthquakes for various epicentral distances showed that the above theoretical considerations agree with the practical results (Fig.7). Therefore, the following conclusions can be made: the time of growth of the first maximum for near and deep earthquakes is less than 1.6 sec for both the longitudinal and transverse waves (Fig.5). In the case of greater distances ($\Delta^\circ > 20^\circ$) the time $t_1 > 1.6$ sec but it can still be $<$ 1.6 sec in the case of the wave P . Fig.6 shows an

On the Calculation of the True Value of the First Amplitude of Soil Movement under the Action of Seismic Waves

example of the registration of the first longitudinal and transverse waves for various stations. The relationship between the intensity of earthquakes and the time t_I could not be established. Fig.8 shows the relation $\overline{U}_t = f(t_I)$ of Galitsyn's galvanometric registration. The relation $t_I = f(T_\omega)$ for them is shown in Fig.9. There are 9 figures and 8 references; 3 of the references are Soviet, 3 are English and 2 German.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Institute of Physics of the Earth)

SUBMITTED: August 30, 1957.

VVEDENSKAYA, N.A.; KONDORSKAYA, N.V.

Bulletin of strong earthquakes recorded in the U.S.S.R. in 1956. Trudy Inst.fiz.zem. no.5:3-19 '59.
(MIRA 13:6)
(Earthquakes)

KONDORSKAYA, N.V.

PHASE I BOOK EXPLOITATION SOV/5334

Akademiya nauk SSSR. Institut fiziki Zemli

Voprosy inzhenernoy seysmologii, vyp. 3 (Problems in Engineering Seismology, No. 3) Moscow, 1960. 191 p. 1,700 copies printed. (Series: Its: Trudy, no. 10 (177))

Resp. Eds.: S.V. Medvedev, Doctor of Technical Sciences, and A.Z. Kats, Candidate of Physics and Mathematics; Ed. of Publishing House: L.K. Nikolayeva; Tech. Ed.: P.S. Kashina.

PURPOSE: This book is intended for seismologists, and engineers concerned with the construction of earthquake-resistant buildings.

COVERAGE: This is a collection of 15 articles by different authors on problems of engineering seismology. Individual articles discuss the effects of quakes on various structures; seismic activity in the Sochi-Khosta, Krasnaya Polyana, and Pokrovsk-Ural'skiy regions; and ground vibrations during strong earthquakes. One article discusses the effect of the detonation of 3100 tons of explosives on buildings located 1000 m away. No personalities are mentioned. Each article is accompanied by references.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

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JA/dvm/mas
6-26-61

(14)

S/169/61/000/012/008/089
D228/D305

AUTHOR: Kondorskaya, N. V.

TITLE: Instrumental data on the focal position and intensity of the Kamchatka earthquakes of May-June 1959

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 12, 1961, 14, abstract 12A134 (Byul. Soveta po seysmol. AN SSSR, 1960, no. 11, 18-24)

TEXT: The strong earthquakes of May 4 and June 18, 1959, on the east coast of Kamchatka, which were felt in Kamchatka and recorded by all the USSR's seismic stations, were investigated. The earthquake of May 4 occurred to the southeast of the Shipun Peninsula; its intensity was 7.6, the focal depth being about 20 km. Of the series of repeated shocks, it was only possible to determine the epicenters for the 6 strongest with an intensity of up to 6.2 and a focal depth of 20 km and

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for a single shock with a depth of 40 km. The earthquake of June 18, with an epicenter to the north-east of the Shipun Peninsula and an intensity of 6.9, had a surface focus. The epicenters could not be determined for the repeated shocks of this earthquake, their intensity not being above 5.1. The study of earthquakes that have occurred in recent years to the east of Kamchatka--including the catastrophic earthquakes of 1923 and 1952, which were accompanied by a large number of recurrent shocks, and the 1959 earthquakes under consideration--enabled the region of the maximum epicenter-distribution density to the east of the Kamchatka coast to be distinguished. The epicenters of the earthquakes of 1959 lay in the northern part of this region. [Abstracter's note: Complete translation.]

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26982 S/049/60/000/012/006/011
D214/D305

AUTHORS: Belotelov, V.L., and Kondorskaya, N.V.

TITLE: On the question of calculating the energy of earthquakes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 12, 1960, 1744 - 1755

TEXT: This study of the energy of longitudinal and transverse waves of some Far Eastern earthquakes which occurred between 1952 and 1957 is a continuation of previous work by Ye.F. Savarenskiy etal (Ref. 1: Izv. Akad. Nauk SSSR, ser. geofiz., no. 5, 1960) on a method of determining the energy of elastic waves from the deep earthquake of January 3, 1957. Observational procedure and factors affecting the interpretation of the experimental data. The research materials consisted of 108 seismograms selected from the records of 11 strong earthquakes with epicenters off Kamchatka, the Kuriles and the east coast of Japan. Values for the coefficients of P- and S-wave absorption and for the coefficient of the vertical components

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of the P- and S-waves were taken from the data of B. Gutenberg and D.S. Kogan (Ref. 7: Tr. geofiz. inst. Akad. Nauk SSSR, no. 30, 157, 1955). The P- and S-wave energies were evaluated from the formulae

$$\bar{\Im} = \frac{4\pi R^2 \sin\theta \sin e_0}{f(e,\alpha)\cos e \frac{de}{d\theta}} \left(\frac{\Im_0}{\rho c}\right) \rho c, \qquad (1)$$

$$\bar{\Im} = \Im e^{-kr};\ \Im_0 = \rho c \int_0^{\tau} \left[\frac{\left(\frac{dA_N}{dt}\right)^2 + \left(\frac{dA_E}{dt}\right)^2}{K_H^2} + \frac{\left(\frac{dA_Z}{dt}\right)^2}{K_Z^2} \right] dt,$$

where θ is the epicentral distance; e_0 is the angle of emergence of the seismic ray at the surface; e is the angle of emergence of the seismic ray from the focus; k is the absorption coefficient; s is the propagational velocity of the incident wave near the surface; p is the rock density near the seismic stations; $\Im_0$ is the density of the vibrational energy in the incident wave at the observa-

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tion point; A_N, A_E, A_Z are the components of the actual ground displacement at the surface at the observation point; K_H, K_Z are the reflection coefficients at the free discontinuity-surface for the horizontal and vertical components; and $f(e - \alpha)$ is the function covering the effect of uneven energy radiation from the focus in different directions. The mean magnitude of the energy of a given earthquake (ϑ_{cp}) was obtained at various stations ($\bar{\vartheta}$) by taking into account the mean value of the absorption coefficient:

$$\vartheta_{cp} = \sqrt[n]{\vartheta_1 \cdot \vartheta_2 \cdots \vartheta_n} = \sqrt[n]{\bar{\vartheta}_1 \cdot \bar{\vartheta}_2 \cdots \bar{\vartheta}_n \, e^{k_{cp}(\theta_1+\theta_2+\ldots+\theta_n)}},$$

$$\lg \vartheta_{cp} = \frac{1}{n}\left(\sum_{i=1}^{n} \lg \vartheta_i + k_{cp} \lg e \sum_{i=1}^{n} \theta_i\right). \qquad (2)$$

The divergence function $\sin\theta \sin e_0/\cos e(de/d\theta)$ was calculated

from H. Hodgson's tables; previous research by authors indicates that $f(e, \alpha)$ approximates to unity. V.L. Belotelov's special device (Ref. 2: Izv. Akad. Nauk SSSR, otdel. tekh. nauk., no. 6, 1959) was employed to determine $\Im_0$ from integrals like

$$\int_0^T \left(\frac{dA_i}{dt}\right)^2 dt.$$

The authors stress the need for taking the frequency spectra of seismic waves into account when calculating the focal energy of earthquakes. They also note the good agreement between their values for log $\Im$ and those found for M from the procedure given by B. Gutenberg et al and S.L. Solov'yev (Ref. 10: Izv. Akad. Nauk SSSR, ser. geofiz., no. 7, 1957). On the discussion of results, the values of $\Im_p$ and $\Im_s$ for the studied earthquakes are generally similar, but data from observations with $\theta > 20^\circ$ do not enable any conclusion to be drawn regarding the possibility of the greater ener-

gy of transverse waves as compared with longitudinal waves. The variation of the individual values for log $\bar{\vartheta}_p$ and log $\bar{\vartheta}_s$ may be related to certain patterns in the deviations of these values from the average magnitude determined for each area as a whole. In the author's opinion such deviations should be considered as corrections which have to be applied when determining $\bar{\vartheta}$ from measurements at separate stations. They are probably due to peculiarities in the geologic structure near each seismic station. With regard to the dependence of log $\bar{\vartheta}$ on the epicentral distance the following regularities were observed: 1) log $\bar{\vartheta}$ is at a maximum for epicentral distances of 44° -- a fact established by N.V. Kondorskaya (Ref. 13: Stud. geophys. et geodaet., 3, 1959) during the earthquake of 3·1·1957 -- 57° and 78°; 2) The general tendency for log $\bar{\vartheta}$ to increase with the epicentral distance, especially in the case of P-waves; and 3) The values of log $\bar{\vartheta}$ are lower at epicentral distances of $<25°$. The authors believe these trends to be due respectively to the focusing of seismic rays within layers which condition discontinuity surfaces of the second type, to the decrease of the absorption coeffi-

cient of the earth's shell with depth, and to the fact that the Petropavlovsk station -- which, according to S.Ya. Kogan (Ref. 15: Izv. Akad. Nauk SSSR. ser. geofiz., no. 9, 1959), usually gives reduced values -- was used in the case of small epicentral distances. The foregoing method is considered to be suitable for measuring the elastic-wave energy of earthquakes by means of observations at remote stations. The authors, however, recommend the use of an even greater number of stations to obtain more precise values of log $\bar{\partial}$. The reliability of the method would also be improved by additional information on the vibration groups of P- and S-waves, the corrections required in the energy calculations, a simpler means of determining the form of $f(e, \alpha)$ and on the spectral composition at the boundary of the focal sphere. There are 5 figures, 4 tables and 15 references: 10 Soviet-bloc and 5 non-Soviet-bloc. The references to the English-language publications read as follows: B. Gutenberg, Bull. Seism. Soc. Amer. 34, no. 2, 1944; B. Gutenberg, Ibid 35, no. 2, 1945; H. Hodgson, Ibid 43, no. 1, 1953; M. Bath, Trans. Amer. Geophys. Union 36, 1955.

Card 6/7

On the question of calculating ... 26982 S/049/60/000/012/006/011 D214/D305

ASSOCIATION: Akademiya nauk SSSR, Institute fiziki zemli, Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova (Institute of Physics of the Earth, Moscow State University im. M.V. Lomonosov, Academy of Sciences, USSR)

SUBMITTED: May 5, 1960

Card 7/7

23458

3,9300

S/049/61/000/001/003/008
D226/D306

AUTHORS: Belotelov, V.L., Kondorskaya, N.V.

TITLE: On the relation between earthquake energy and the maximum displacement velocity in body waves

PERIODICAL: Akademiya nauk SSSR. Seriya geofizicheskaya. Izvestiya, no. 1, 1961, 38 - 45

TEXT: This article appears to be the third of a series of papers devoted to this topic, based on an extension of the method of B.B. Galitsin (Ref. 1: Ye.F. Savarenskiy, N.V. Kondorskaya, V.L. Belotelov, Ob opredelenii energii uprugikh voln, porozhdayemykh zemletryaseniyem. Izv. AN SSSR, ser. geofiz., No. 5, 1960). The end-product of the paper is a set of relations between $\bar{\vartheta}_P$ or $\bar{\vartheta}_S$, the mean energy of all the P-wave, S-wave respectively, radiation from an earthquake, θ - the epicentral distance and $(A/T)_{PZ}$, $(A/T)_{PH}$, $(A/T)_{SZ}$, $(A/T)_{SH}$ - the quantities read from the seismograms where

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On the relation between ...

A is the amplitude (of the actual earth's surface displacement). T is the period and P, S, 24H have their usual significance. (A/T) is supposed to be read at its maximum value. These relations are:

Deep Earthquakes	Superficial Earthquakes
$\lg \bar{\vartheta}_P = 22{,}75 + 0{,}018\,\vartheta^\circ + \lg\left(\frac{A}{T}\right)_{PZ}$	$\lg \bar{\vartheta}_P = 23{,}05 + 0{,}025\,\vartheta^\circ + \lg\left(\frac{A}{T}\right)_{PZ}$
$\lg \bar{\vartheta}_P = 23{,}0 + 0{,}018\,\vartheta^\circ + \lg\left(\frac{A}{T}\right)_{PH}$	$\lg \bar{\vartheta}_P = 23{,}35 + 0{,}025\,\vartheta^\circ + \lg\left(\frac{A}{T}\right)_{PH}$
$\lg \bar{\vartheta}_S = 23{,}3 + 0{,}02\,\vartheta^\circ + \lg\left(\frac{A}{T}\right)_{SZ}$	$\lg \bar{\vartheta}_S = 23{,}45 + 0{,}025\,\vartheta^\circ + \lg\left(\frac{A}{T}\right)_{SZ}$
$\lg \bar{\vartheta}_S = 23{,}0 + 0{,}020\,\vartheta^\circ + \lg\left(\frac{A}{T}\right)_{SH}$	$\lg \bar{\vartheta}_S = 23{,}45 + 0{,}02\,\vartheta^\circ + \lg\left(\frac{A}{T}\right)_{SH}$

The analysis is based on 132 records of eleven earthquakes. Some causes of the lower average result for deep earthquakes are discussed. 1) The traces from deep earthquakes often consist of one large energetic pulse, whereas those from superficial earthquakes are spread over many oscillations. 2) A factor in the equations de-

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On the relation between ...

pending on the angle of incidence is more critical for a shallow focus. 3) Integration from a superficial focus is only over a hemisphere, not a sphere, so one would expect lg Э to be 0.3 less for surface earthquakes. 4) At small θ, the difference in the reflexion coefficients at the surface becomes important, and many more observations are needed at each station to determine them in the range 0.1 to 0.5 Hz. There are 3 figures, 2 tables and 8 references: 3 Soviet-bloc and 5 non-Soviet-bloc. The references to the English-language publications read as follows: B. Gutenberg, C.F. Richter, Magnitude and energy of earthquakes. Ann. Geophys. Roma 9, No. 1, 1956; B. Gutenberg, Amplitudes of P, PP and S and magnitude of shallow earthquakes. Bull. Seism. Soc. Ameri., 35, No. 2, 1945; B. Gutenberg, Magnitude determination for deep focus earthquakes, Bull. Seism. Soc. Amer. 35, no. 3, 1945; B. Gutenberg, The energy of earthquakes. J. Geol. Soc. London, No. 8, 1956.

Card 3/4

23458
S/049/61/000/001/003/008
D226/D306

On the relation between ...

ASSOCIATION: Akademiya nauk SSR, institut fiziki zemli Moskovskiy gosudarstvennyy universitet im M.V. Lomonosova (Academy of Sciences, USSR, Institute of Physics of the Earth, Moscow State University im M.V. Lomonosov)

SUBMITTED: July 6, 1960

Card 4/4

KONDORSKAYA, N.V.

4

S/049/62/000/002/001/005
D218/D301

AUTHORS: Vaněk, J., Zátopek, A., Kárník, V., Kondorskaya, N.V., Riznichenko, Yu.V., Savarenskiy, Ye.F., Solov'yev, S.L. and Shebalin, N.V.

TITLE: Standardization of the magnitude scale

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 2, 1962, 153-158

TEXT: It is pointed out that various magnitude scales are used at the present time and that their main disadvantage is that they provide different magnitudes for a given earthquake. This is because in many cases the methods used to calculate the magnitude are not clearly defined and are inadequately described. A special conference of Soviet and Czechoslovak seismologists was convened in Prague on December 7-14, 1960, to deal with this problem. The aim of the present paper is to give an account of the main results of the Prague meeting and to suggest a standard method for determining

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the earthquake magnitude. It is suggested that the scale should be based on the following standard formula:

$$M = \lg\left(\frac{A}{T}\right)_{max} + \sigma(\Delta)$$

where A is the maximum displacement amplitude, T is the corresponding period in seconds and $\sigma(\Delta)$ is a calibrating function which describes the variation of A/T with epicentric distance and is different for different types of waves. This formula has been discussed by B. Guterberg and C.F. Richter, and by the first three of the present authors in an earlier work. The calibration function is taken as an average of the Q function of Guterberg and Richter and the β function of J. Vaněk and J. Stelzner. A table is reproduced giving the smoothed average calibrating functions for PH, PV, PPH, and SH waves. In the case of surface waves, the calibrating function is taken to be of the form $\sigma(\Delta) = a \log \Delta + b$. It was found that the coefficients a and b for LH waves are on average equal to 1.66 and 3.3 respectively. This result holds for surface waves at epi-

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Standardization of the magnitude scale

centric distances between 2 and 160°. Below 5°, Sg and L waves must be carefully distinguished. It is pointed out that the problem of defining a single value for M is not yet solved because different average values are obtained for M with different types of waves (M_{LH}, M_{PH}, M_{SH}, and so on). Nevertheless, it was decided not to combine these values as on the unified Gutenberg-Richter scale, but to use the method described above to accumulate a large amount of data and return to the problem of defining an average magnitude later. Beginning with 1962, all stations of Czechoslovakia and the USSR will use the method described in the present paper. There are 2 tables and 20 references: 11 Soviet-bloc and 9 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: B. Gutenberg and C.F. Richter. Ann. Geophys., 9, (1956); Report of the committee on magnitudes 12th General Assembly of the IUGG, Helsinki (1960); J. Vaněk and J. Stelzner, Ann. Geophys., 13 (1960); T. Nagamune and A Seki, Geophys. Mag., 28 (1958).

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000824210001-3

S/049/62/000/002/001/005
D218/D301

Standardization of the magnitude scale

ASSOCIATION: Geofizicheskiy institut Akademii nauk Ch SSR (Geophysics Institute of the Academy of Sciences, Czechoslovak SSR), Geofizicheskiy institut Karlova Universiteta, Praga (Geophysics Institute, Charles University, Prague) and Akademiya nauk SSR, Institut fiziki zemli (Academy of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: October 31, 1961

Z/023/62/000/001/002/004
D006/D102

AUTHORS: Kárník, V., Kondorskaya, N. V., Riznichenko, Yu.V., Savarensky, E.F., Solovyev, S.L., Shebalin, N. V., Vaněk, J., and Zátopek, A.

TITLE: Standardization of the earthquake magnitude scale

PERIODICAL: Studia geophysica et geodaetica, no. 1, 1962, 41-47

TEXT: The paper presents a proposal for standard methods of magnitude determination of both shallow and deep earthquakes, and describes the practical application of the suggested magnitude scale as agreed upon by Soviet and Czechoslovak seismologists at meetings held in Prague on December 7-14, 1960 and in early 1961. The proposal is based on the following postulates: (1) General acceptance of a unified formula for the definition of the earthquake magnitude M

$$M = \log (A/T)_{max} + \sigma(\Delta) \qquad (1)$$

where A is the maximum ground amplitude of the wave considered (in microns), T is the corresponding period in seconds, and $\sigma(\Delta)$ is the calibrating function expressing the relation between A/T and the epicentral distance Δ, which is

Card 1/3

Standardization of the ....

Z/023/62/000/001/002/004
D006/D102

6, (1958), 222. (Technical editor: L. Ruprechtová)

ASSOCIATION: Geophysical Institute, Czechoslovak Academy of Sciences, Prague (V. Kárník, J. Vaněk); Institute of the Physics of the Earth, Academy of Sciences of the USSR, Moscow (N.V. Kondorskaya, Yu. V. Riznichenko, E. F. Savarensky, S. L. Solovyev, N. V. Shebalin); Institute of Geophysics, Charles University, Prague (A. Zátopek)

SUBMITTED: November 11, 1961

Card 3/3

VVEDENSKAYA, N. A.; DZHANUZAKOV, K. D.; IODKO, V. K.; KONDORSKAYA, N. V.; LANDYREVA, N. S.; MISHARINA, L. A.; SULTANOVA, Z. Z.; TSKHAKAYA, A. D.; YURKEVICH, O. I.

Bulletin of strong earthquakes in the U.S.S.R. in 1959. Trudy Inst. fiz. Zem. no.22. Vop. inzh. seism. no.7:3-24 '62. (MIRA 15:10)

(Earthquakes)

KOZDORSKAYA, N.V.; LANDYREVA, N.S.

Features of the seismicity of Kamchatka Province according to observation data from a network of permanent seismic stations. Izv. AN SSSR. Ser.geofiz. no.10:1320-1332 O '62. (MIRA 16:2)

1. Institut fiziki Zemli AN SSSR.
(Kamchatka Province--Seismology)

KONDORSKAYA, N.V.

Conference of the committee on the International Seismological Summary. Geofiz.biul. no.12:10-13 '62. (MIRA 16:5)
(Seismology--Congresses)

KONDORSKAYA, N.V.; LANDYREVA, N.S.

Features of the seismicity of Kamchatka Province according to observation date from a network of permanent seismic stations. Izv. AN SSSR. Ser.geofiz. no.10:1320-1332 O '62. (MIRA 16:2)

1. Institut fiziki Zemli AN SSSR.
(Kamchatka Province—Seismology)

VVEDENSKAYA, N.A.; IODKO, V.K.; KONDORSKAYA, N.V.; LANDYREVA, N.S.; MISHARINA, L.A.; SEMENOV, P.G.; TABULEVICH, V.N.

Bulletin of strong earthquakes in the U.S.S.R. in 1960.
Trudy Inst. fiz. Zem. 28 Vop. inzh. seism. no.8:61-76 '63.
(MIRA 16:11)

ACCESSION NR: AT4045972 S/2619/64/000/033/0124/0143

AUTHOR: Vvedenskaya, N. A.; Dzhanuzakov, K. D.; Iodko, V. K.; Kondorskaya, N. V.; Landy*reva, N. S.; Misharina, L. A.; Mnatsakanyan, D. M.; Ragimov, Sh. S.; Semenov, P. G.; Tabulevich, V. N.

TITLE: Byulleten' sil'ny*kh zemletryaseniy SSSR (Bulletin of the Strong Earthquakes of the SSSR) for 1961

SOURCE: AN SSSR. Institut fiziki Zemli. Trudy*, no. 33(200), 1964. Voprosy* inzhenernoy seysmologii (Problems of earthquake engineering), no. 9, 124-143

TOPIC TAGS: geophysics, seismology, earthquake, earthquake focus, earthquake epicenter, earthquake intensity, seismicity

ABSTRACT: The "Bulletin of the Strong Earthquakes of the SSSR" is a periodic annual summary which simultaneously summarizes all instrumental and noninstrumental data on the strong earthquakes ($M \geq 4$) occurring in the Soviet Union. The Bulletin contains a catalogue of earthquakes (reproduced in the paper for 1961 in the form of a lengthy table), a map of the epicenters and a brief description of the strongest earthquakes. The catalogue includes instrumental data on the coordinates of the epicenter, focal depth, magnitude M and the time of occurrence of earthquakes, taken from the Byulleten' seti seysmicheskikh stantsiy SSSR (Bulletin of the Network of Seismic Stations of the SSSR) and noninstrumental data -- information on

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ACCESSION NR: AT4045972

the sensed intensity of earthquakes, received from reports submitted by local inhabitants or from investigations devoted to descriptions of the strongest earthquakes. With the exception of the Kurile-Kamchatka zone, in the catalogue there are data for all earthquakes with $M \geq 4$, and all earthquakes for which M was not determined but which were recorded by seismic stations of the general type as having epicentral distances greater than 1,000 km. Data for the Kurile-Kamchatka zone include all earthquakes with $M \geq 5$. A map is presented in the paper which shows the location of the epicenters of the earthquakes listed in the catalogue; numbers on the map correspond to the numerical listing in the catalogue. In 1961 there were 272 earthquakes in the SSSR with $M \geq 4$. Their distribution by regions and intensities is tabulated in the original text. Fig. 1 of the Enclosure shows the value $\sum E^{1/2}$ for individual seismically active zones of the SSSR for 1961, computed using the formula $\lg E = 11.8 + 1.5 M$. Fig. 2 of the Enclosure shows the change with time of the deviation from the mean annual value $\sum E^{1/2}$ for four seismically active zones. Along the y-axis of the graph there is plotted the value $\sum E^{1/2} - (\sum E^{1/2})$ mean and along the x-axis - time (1946-1961). The value $(E^{1/2})$ mean for each zone is indicated at the right of the graph. The authors go on to describe briefly, but individually, the most important seismic phenomena occurring in various regions of the SSSR in 1961. The annual publication of the Bulletin was begun in 1956 and until 1961 it was printed in the Trudy* Instituta Fiziki Zemli AN SSSR in the collection of articles Voprosy inzhenernoy seysmologii

Card 2/6

ACCESSION NR: AT4045972

ENCLOSURE: 01

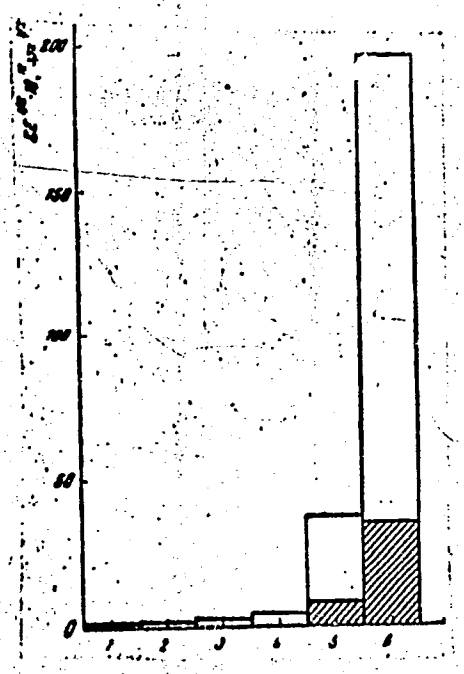

Fig. 1. Distribution of $\Sigma E^{1/2}$ by zones (in units of 10^{10} ergs$^{1/2}$). Seismic zones: 1 - Carpathian; 2 - Kopet-Dag; 3 - Caucasus; 4 - Baykal-Altay; 5 - Central Asia; 6 - Far East. Cross-hatched part corresponds to energy of deep earthquakes (H > 100 km).

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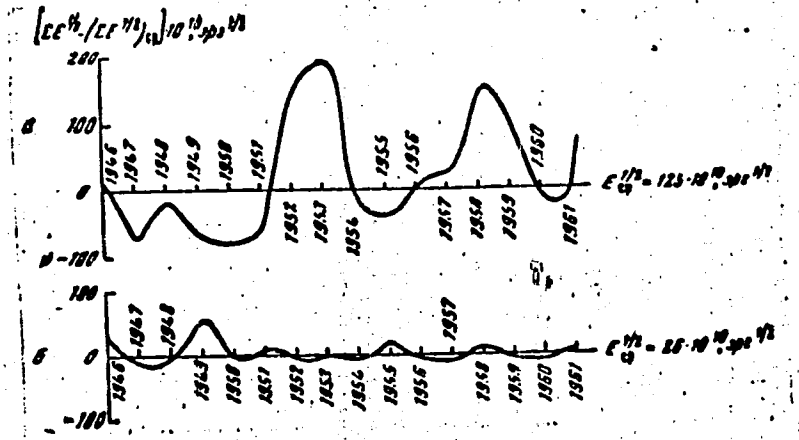
ACCESSION NR: AT4045972

ENCLOSURE: 02

Fig. 2.



Card 5/6

BELOTELOV, V. L.; KONDORSKAYA, N. V.

Spectra of body waves in Kamchatka earthquakes. Izv. AN SSSR. Ser.geofiz. no. 4:475-482 Ap '64. (MIRA 17:5)

1. Institut fiziki Zemli AN SSSR i Moskovskiy gosudarstvennyy universitet.

VVEDENSKAYA, N.A., otv. red.; KONDORSKAYA, N.V., otv. red.

[Earthquakes in the U.S.S.R. in 1962] Zemletriasenila v SSSR v 1962 godu. Moskva, Nauka, 1964. 153 p. (MIRA 18:6)

VVEDENSKAYA, N.A.; DZHANUZAKOV, K.D.; IODKO, V.K.; KONDORSKAYA, N.V.; LANDYREVA, N.S.; MISHARINA, L.A.; MNATSAKANYAN, D.M.; RAGIMOV, Sh.S.; SEMENOV, P.G.; TABULEVICH, V.N.

Bulletin of powerful earthquakes in the U.S.S.R. during 1961. Trudy Inst. fiz. Zem. no.33. Vop. inzh. seism. no.9:124-143 '64.

ACC NR: AT6033686 SOURCE CODE: UR/3231/66/000/001/0031/0053

AUTHOR: Kondorskaya, N. V.; Zhelankina, T. S.; Mebel', S. S.; Vartanova, L. Y.

ORG: none

TITLE: Certain results of using an electronic computer to collate seismic observations

SOURCE: AN SSSR. Institut fiziki Zemli. Vychislitel'naya seysmologiya, no. 1, 1966. Analiz seysmicheskikh nablyudeniy naelektronnykh mashinakh (Use of electronic computers in the analysis of seismic observations), 31-53

TOPIC TAGS: electronic computer, data analysis, earthquake, seismologic station, computer program

ABSTRACT: The article analyzes the experience gained in the more precise determination of the coordinates of earthquake epicenters with the aid of an electronic computer by the method described by I. I. Pyatetskiy-Shapiro et al. (DAN SSSR, 1963, 151, no. 2, 323) (the "EPI-1" program). The epicenter coordinates were determined by the USSR Meteorological Service when drafting composite seismic bulletins for the period from the 4th quarter of 1960 until 1963. The use of the EPI-1 program proved beneficial in that it increased the number of the determined epicenters by a factor of 1.5, enhanced the accuracy of their determination, and

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ACC NR: AT6033686

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000824210001-3

led to the solution of additional problems: a) an averaged law of the distribution of closing errors f_k (deviations from the standard Jeffreys-Bullen hodograph) was found for seismic stations in the USSR; b) the accuracy of determination of the epicenters of earthquakes occurring in various parts of the terrestrial globe (Central Asia, Kuriles-Kamchatka Arc, Japan, Alaska, California, etc.) is estimated, with the regions being divided into 4 groups according to the accuracy of determination; c) the possibility of the coincidence of findings with respect to the accuracy of determination of epicenter coordinates is proved as regards observational findings from ~90 foreign stations and 14 Soviet stations with enhanced accuracy of observations. The dependence of the accuracy of determination of epicenter coordinates on the depth of the earthquake focus is demonstrated. "In conclusion, the authors are indebted to V. I. Keylis-Borok for his comments on this project." Orig. art. has: 7 figures, 8 formulas, 6 tables.

SUB CODE: 09, 08 / SUBM DATE: none/ ORIG REF: 003/ OTH REF: 004

Card 2/2

ZHEREBKOV, S.K.; MAYOROVA, A.S.; GROZHAN, Ye.M.; KONDORSKAYA, V.A.

Using rubber and ebojite for the protection of equipment from the action of chemical media. Standartizatsiia 26 no.2:37-38 F '62. (MIRA 15:2)

(Rubber coatings)

KOCHERMAROVA, I.P.; KONDORSKAYA, V.R.

Using Cerapadus as rootstock for the sweet cherry (Cerasus avium L. Moench.); anatomy of the stock-scion union. Nauch. dokl. vys. shkoly; biol. nauki no. 1:118-122 '61. (MIRA 14:2)

1. Rekomendovana kafedroy vysshikh rasteniy Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(CHERRY) (GRAFTING)

KONDORSKIY, N.Ye.

AUTHOR: BEKESHKO,N.E., KONDORSKY,N.E. PA - 2984

TITLE: Temperature Dependence of the OVERHAUSER Effect in Metallic Lithium. (Temperaturnaya zavisimost' effekta Overhausera v metallicheskom litii, Russian)

PERIODICAL: Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol 32, Nr 3, pp 611-612 (U.S.S.R.)

Received: 6 / 1957 Reviewed: 7 / 1957

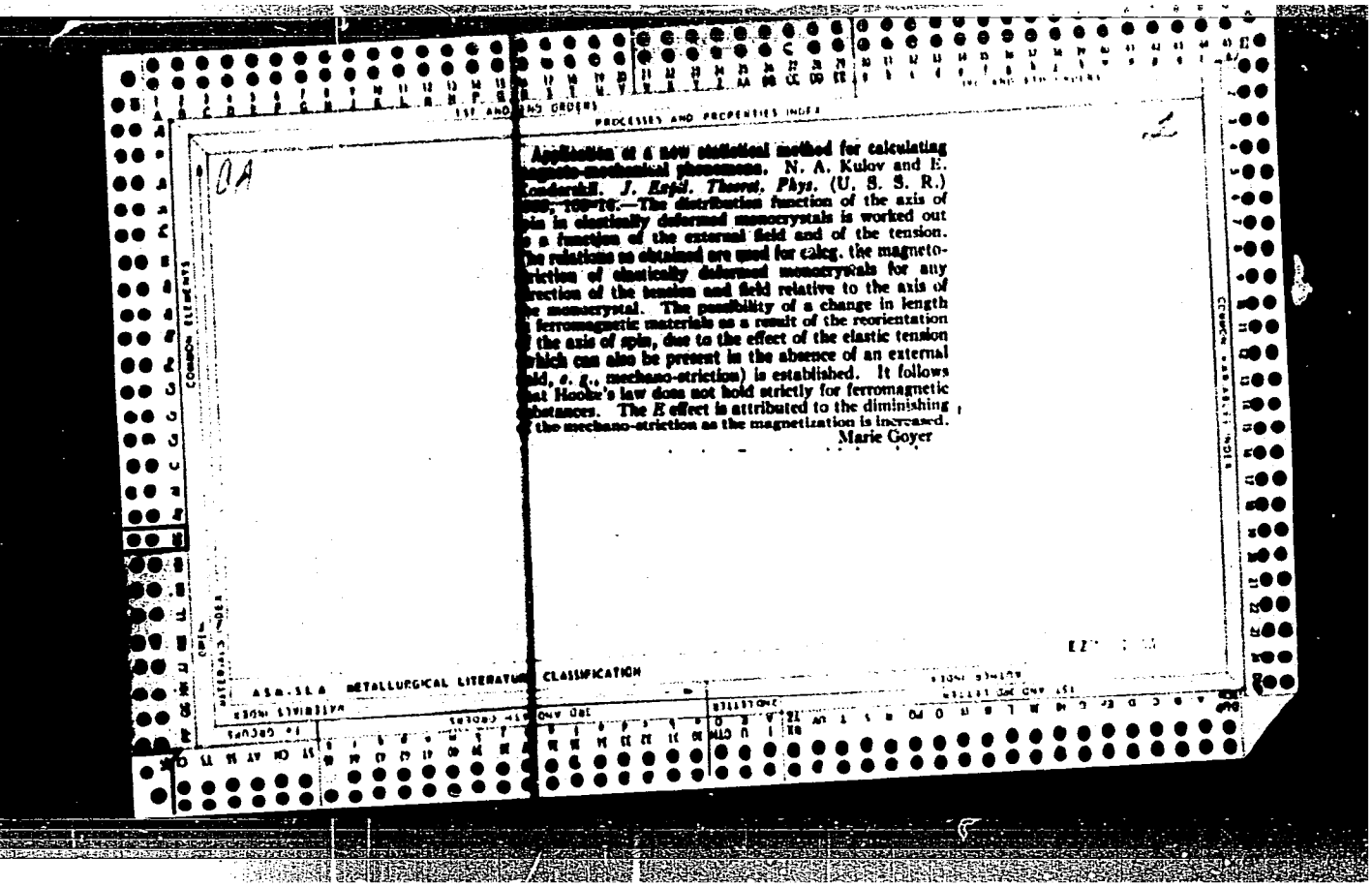
ABSTRACT: A.W.OVERHAUSER (Phys.Rev. 99, 689, 1953 and Phys.Rev.92, 411, 1953) showed that in the case of all metals the saturation of the resonance caused by the conduction electrons must lead to a strong nuclear polarization. This effect was repeatedly observed experimentally and is investigated here on metallic lithium at temperatures of from 77,2° to 373° K (the experimental order is described in detail). Results are compared with the formula by P.BROVETTE - G. CINI (Nuovo Cim. 11, 618, 1954). The ratio of the signal proportional to the order of nuclear polarization at 0° and 57° C amounts to 1,15 according to the experiment, and to 1,21 according to the formula. Experimental results show that the width of the resonance line increases with decreasing temperature. (1 Illustration and 8 Citations from Works Published).

Card 1/2

RYBALKIN, G.I., inzh.; SHARAPOV, V.A., inzh.; VELIKIY, I.G., inzh.; MALIOVANOV, D.I., doktor tekh. nauk; PRUZHNIER, V.L., insh.; KONDORSKIY, R.L., inzh.; TUMANOV, V.Ya., inzh.; POGORELOV, A.K., kand. tekhn. nauk

The BUKS-I equipment is an important step in the accomplishment of overall mechanization of shaft sinking. Shakht. stroi. 9 no.2: 1-3 F '65. (MIRA 18:4)

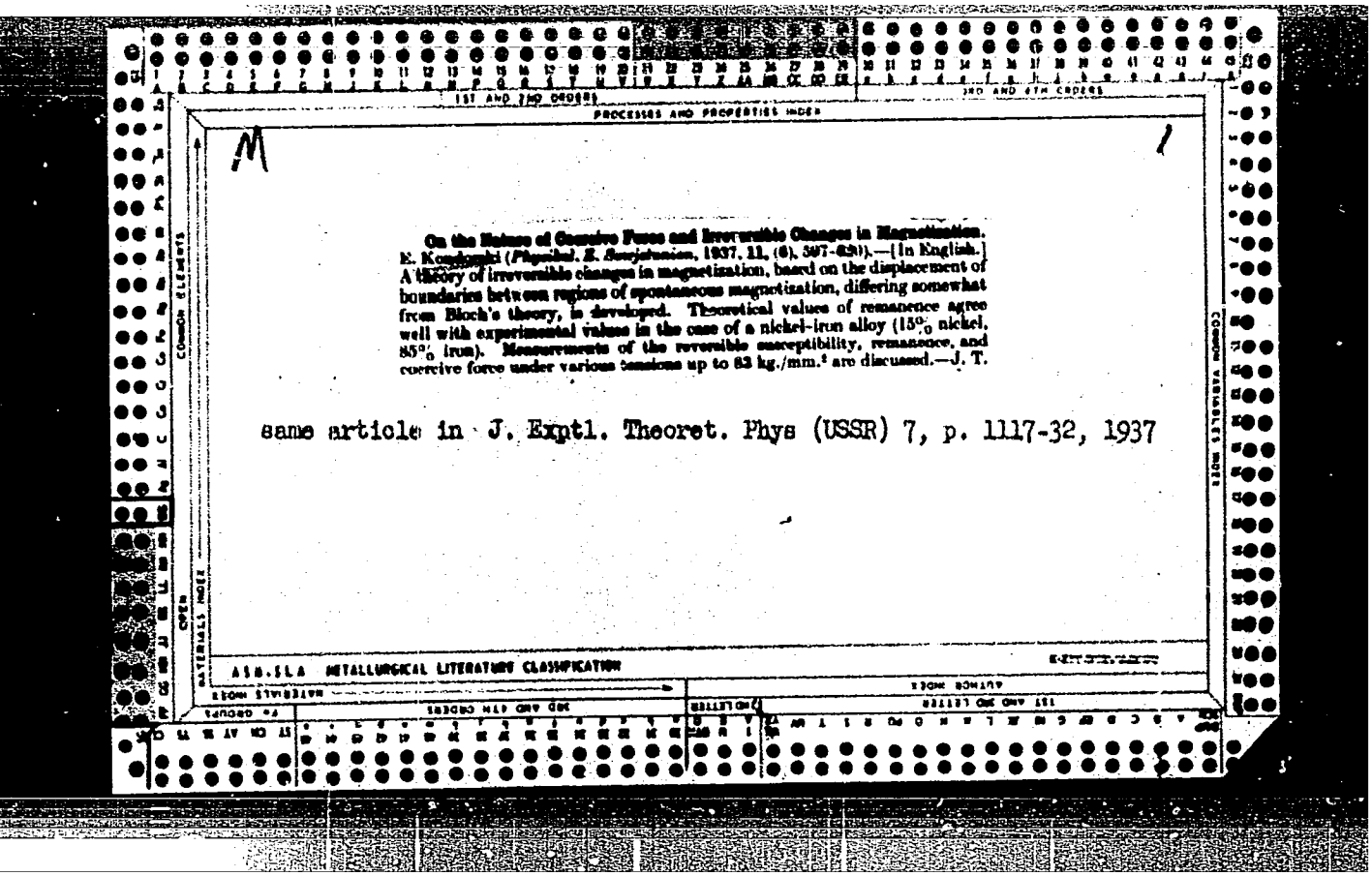
1. Kombinat Luganskshakhtostroy (for Rybalkin, Sharapov, Velikiy). 2. TSentral'nyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut podzemnogo i shakhtnogo stroitel'stva (for Maliovanov, Pruzhnier, Kondorskiy, Tumanov, Pogorelov).



PROCESSES AND PROPERTIES INDEX

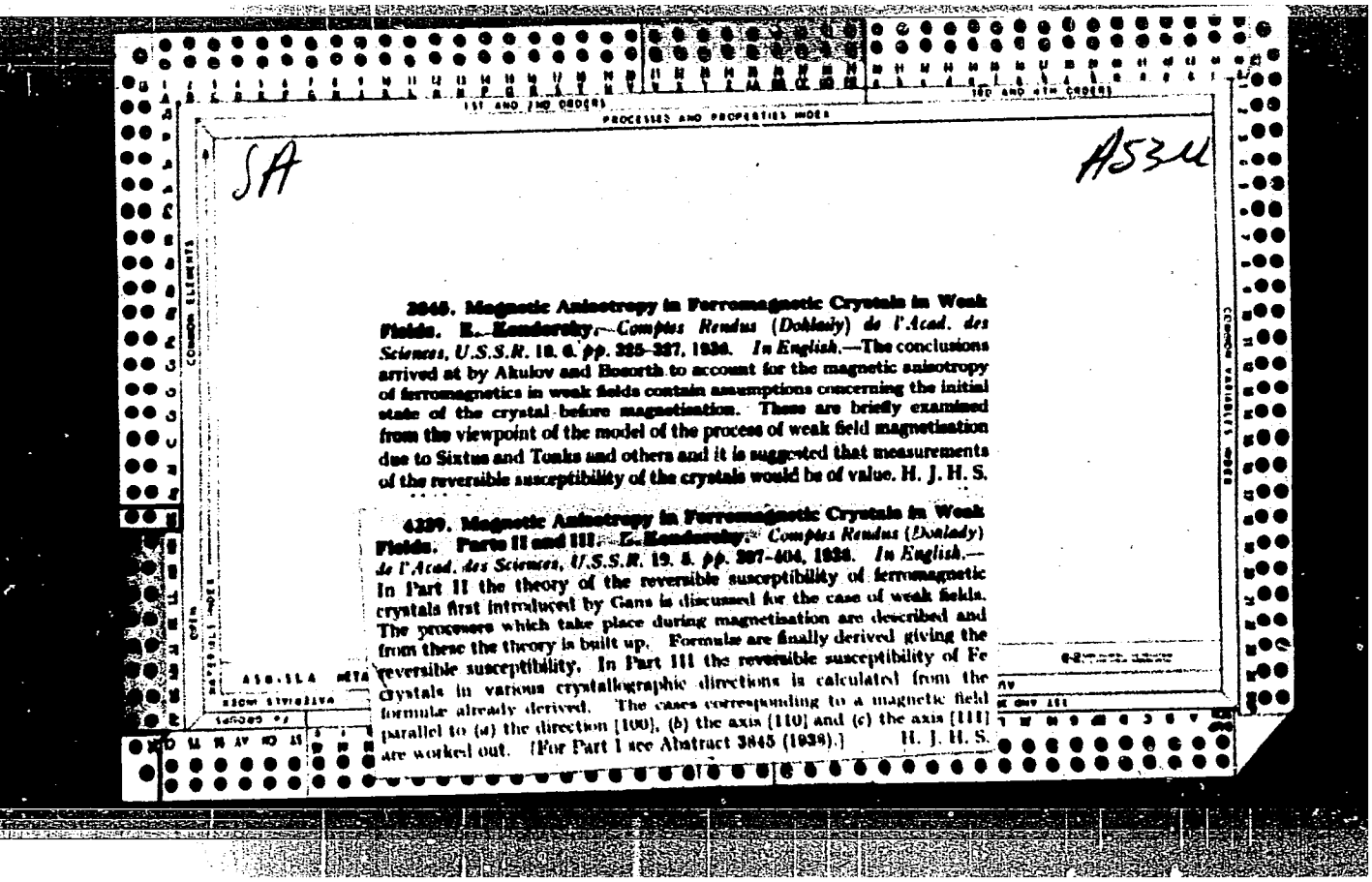
Application of a new statistical method for calculating magneto-mechanical phenomena. N. A. Kulov and E. Kondorskiĭ. *J. Exptl. Theoret. Phys.* (U. S. S. R.) [illegible]—The distribution function of the axis of spin in elastically deformed monocrystals is worked out as a function of the external field and of the tension. The relations so obtained are used for calcg. the magneto-striction of elastically deformed monocrystals for any direction of the tension and field relative to the axis of the monocrystal. The possibility of a change in length of ferromagnetic materials as a result of the reorientation of the axis of spin, due to the effect of the elastic tension (which can also be present in the absence of an external field, *e. g.*, mechano-striction) is established. It follows that Hooke's law does not hold strictly for ferromagnetic substances. The *E* effect is attributed to the diminishing of the mechano-striction as the magnetization is increased.
Marie Goyer

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



On the Nature of Coercive Force and Irreversible Changes in Magnetization. E. Kondorski (*Physikal. Z. Sowjetunion*, 1937, 11, (6), 597-620).—[In English.] A theory of irreversible changes in magnetization, based on the displacement of boundaries between regions of spontaneous magnetization, differing somewhat from Bloch's theory, is developed. Theoretical values of remanence agree well with experimental values in the case of a nickel-iron alloy (15% nickel, 85% iron). Measurements of the reversible susceptibility, remanence, and coercive force under various tensions up to 83 kg./mm.^{2} are discussed.—J. T.

same article in J. Exptl. Theoret. Phys (USSR) 7, p. 1117-32, 1937

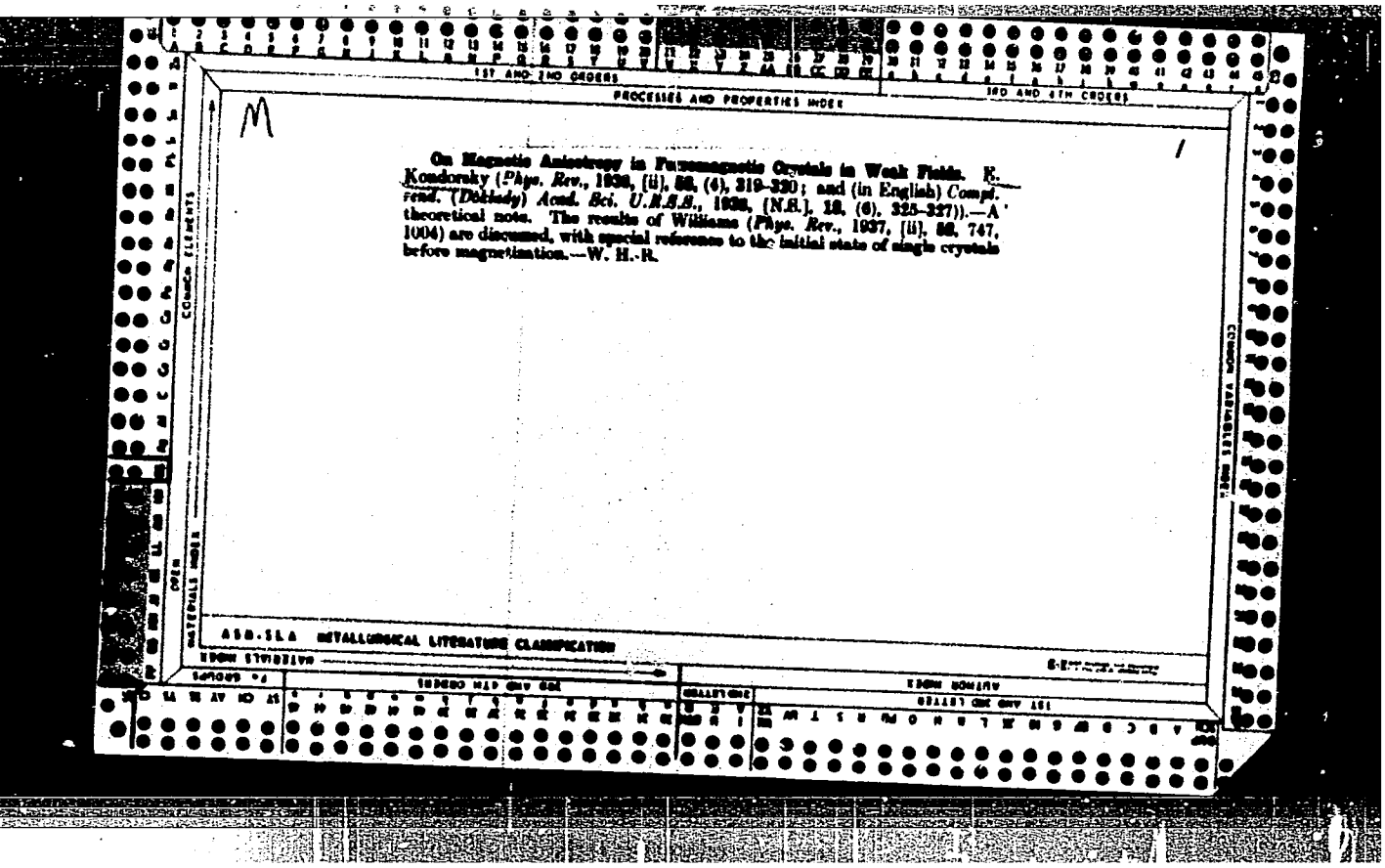


SA

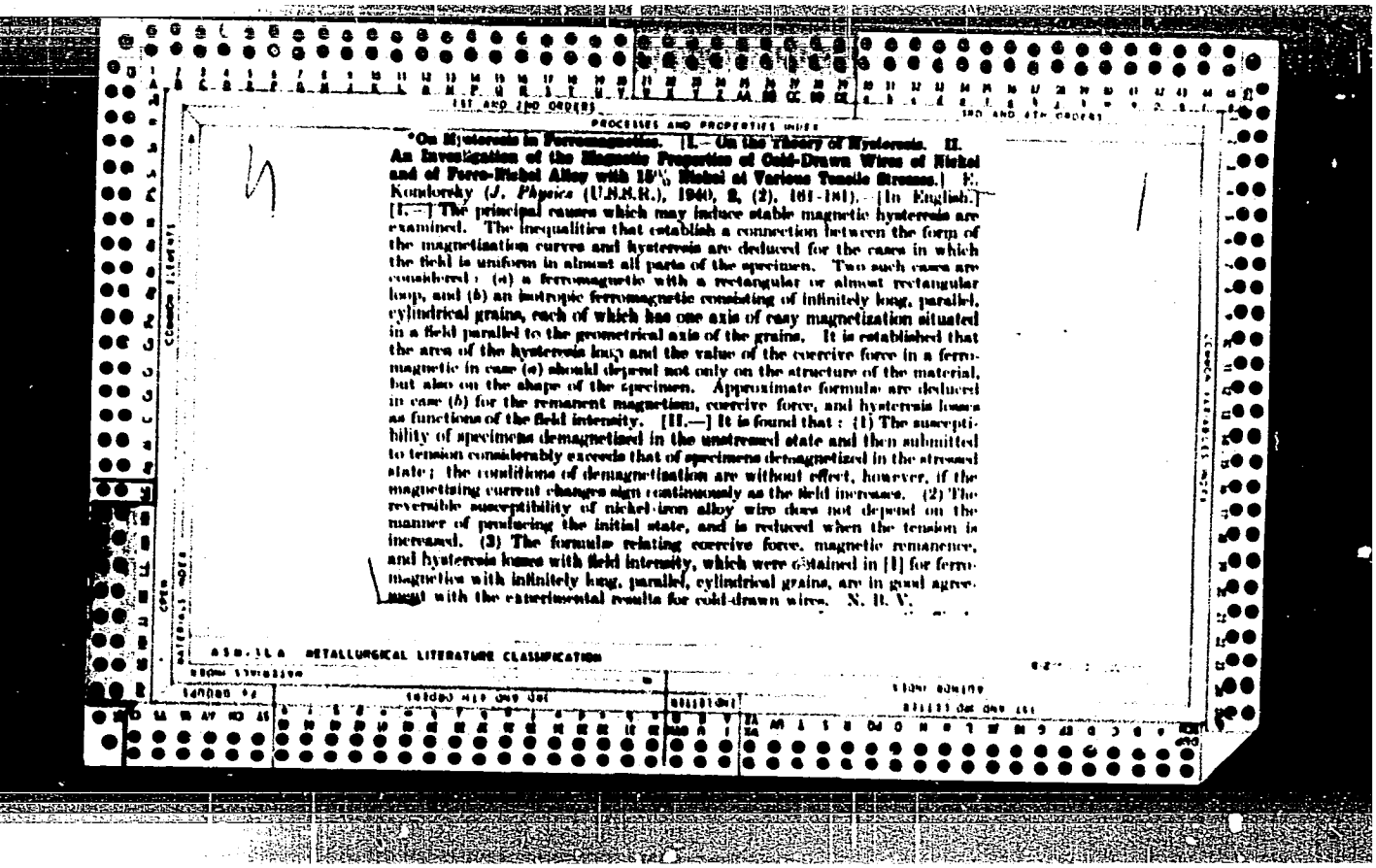
A534

3845. Magnetic Anisotropy in Ferromagnetic Crystals in Weak Fields. E. Kondorsky.—*Comptes Rendus (Doklady) de l'Acad. des Sciences, U.S.S.R.* **19.** 6. *pp.* 285–287. 1938. *In English.*—The conclusions arrived at by Akulov and Bozorth to account for the magnetic anisotropy of ferromagnetics in weak fields contain assumptions concerning the initial state of the crystal before magnetisation. These are briefly examined from the viewpoint of the model of the process of weak field magnetisation due to Sixtus and Tonks and others and it is suggested that measurements of the reversible susceptibility of the crystals would be of value. H. J. H. S.

4239. Magnetic Anisotropy in Ferromagnetic Crystals in Weak Fields. Parts II and III. E. Kondorsky.—*Comptes Rendus (Doklady) de l'Acad. des Sciences, U.S.S.R.* **19.** 5. *pp.* 397–404. 1938. *In English.*—In Part II the theory of the reversible susceptibility of ferromagnetic crystals first introduced by Gans is discussed for the case of weak fields. The processes which take place during magnetisation are described and from these the theory is built up. Formulæ are finally derived giving the reversible susceptibility. In Part III the reversible susceptibility of Fe crystals in various crystallographic directions is calculated from the formulæ already derived. The cases corresponding to a magnetic field parallel to (*a*) the direction [100], (*b*) the axis [110] and (*c*) the axis [111] are worked out. [For Part I see Abstract 3845 (1938).] H. J. H. S.



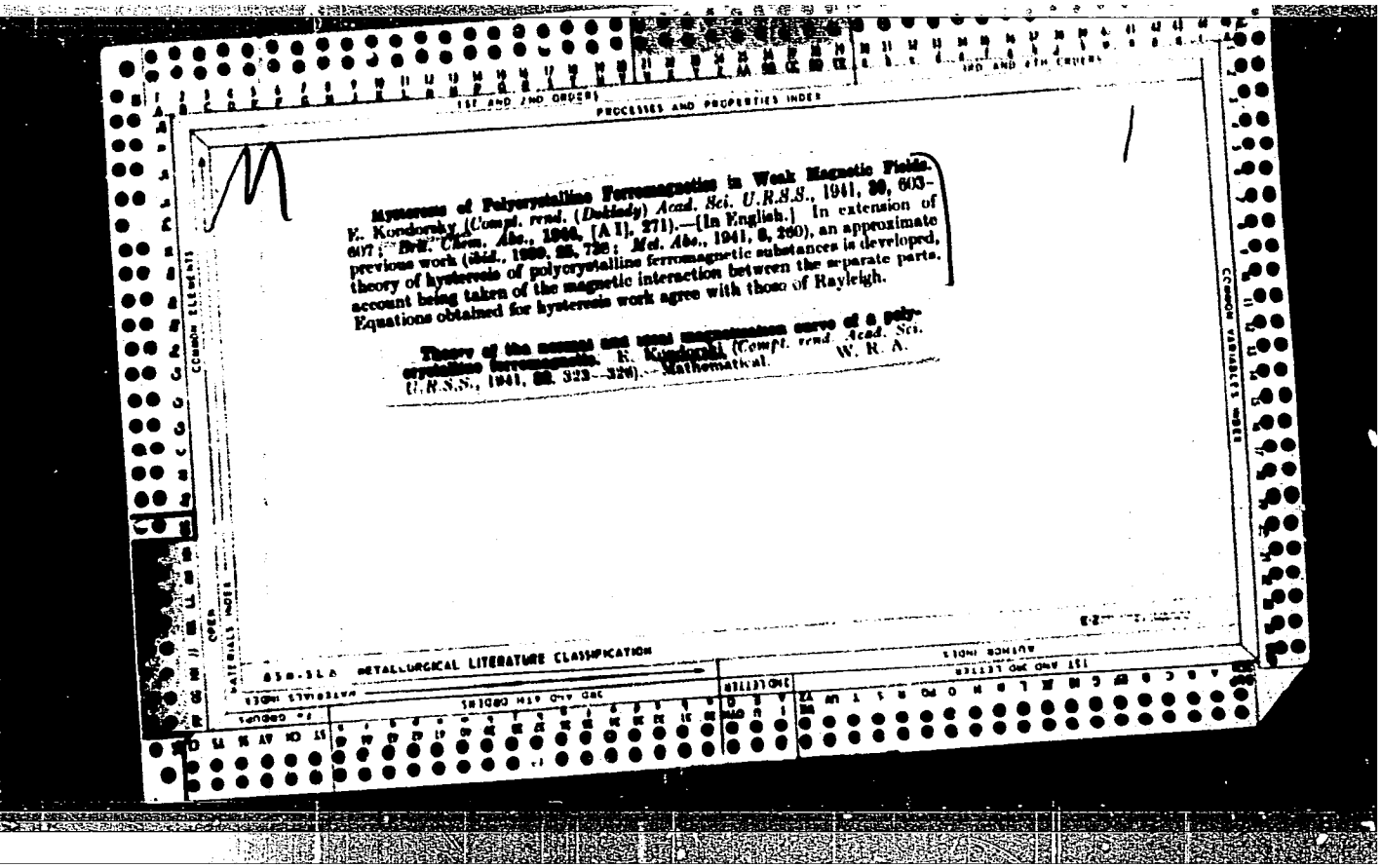
On Magnetic Anisotropy in Ferromagnetic Crystals in Weak Fields. K. Kondorsky (*Phys. Rev.*, 1938, [ii], 53, (4), 319-320; and (in English) *Compt. Rend. (Doklady) Acad. Sci. U.R.S.S.*, 1938, [N.S.], 18, (6), 325-327)).—A theoretical note. The results of Williams (*Phys. Rev.*, 1937, [ii], 52, 747, 1004) are discussed, with special reference to the initial state of single crystals before magnetization.—W. H.-R.



PROCESSES AND PROPERTIES INDEX

***On Hysteresis in Ferromagnetics. [I.—On the Theory of Hysteresis. II. An Investigation of the Magnetic Properties of Cold-Drawn Wires of Nickel and of Ferro-Nickel Alloy with 15% Nickel at Various Tensile Stresses.]** E. Kondorsky (*J. Physics* (U.S.S.R.), 1940, **2**, (2), 161-181). [In English.] [I.—] The principal causes which may induce stable magnetic hysteresis are examined. The inequalities that establish a connection between the form of the magnetisation curves and hysteresis are deduced for the cases in which the field is uniform in almost all parts of the specimen. Two such cases are considered: (*a*) a ferromagnetic with a rectangular or almost rectangular loop, and (*b*) an isotropic ferromagnetic consisting of infinitely long, parallel, cylindrical grains, each of which has one axis of easy magnetization situated in a field parallel to the geometrical axis of the grains. It is established that the area of the hysteresis loop and the value of the coercive force in a ferromagnetic in case (*a*) should depend not only on the structure of the material, but also on the shape of the specimen. Approximate formulæ are deduced in case (*b*) for the remanent magnetism, coercive force, and hysteresis losses as functions of the field intensity. [II.—] It is found that: (1) The susceptibility of specimens demagnetized in the unstressed state and then submitted to tension considerably exceeds that of specimens demagnetized in the stressed state; the conditions of demagnetization are without effect, however, if the magnetizing current changes sign continuously as the field increases. (2) The reversible susceptibility of nickel-iron alloy wire does not depend on the manner of producing the initial state, and is reduced when the tension is increased. (3) The formulæ relating coercive force, magnetic remanence, and hysteresis losses with field intensity, which were obtained in [I] for ferromagnetics with infinitely long, parallel, cylindrical grains, are in good agreement with the experimental results for cold-drawn wires. N. H. V.

ASM-TLA METALLURGICAL LITERATURE CLASSIFICATION



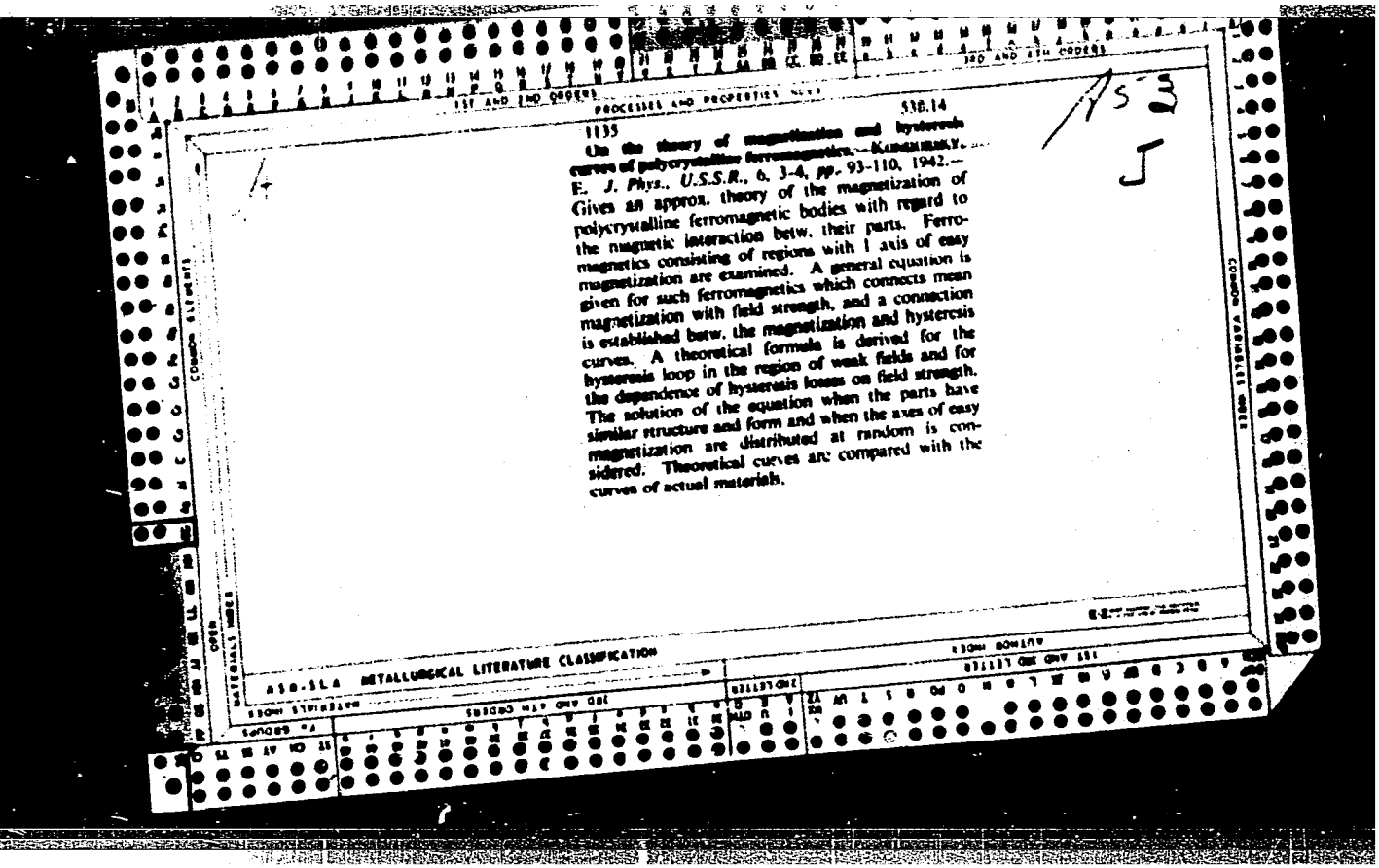
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Hysteresis of Polycrystalline Ferromagnetics in Weak Magnetic Fields. K. Kondorsky (*Compt. rend. (Doklady) Acad. Sci. U.R.S.S.*, 1941, **30**, 603–607; *Brit. Chem. Abs.*, 1942, [A I], 271).—[In English.] In extension of previous work (*ibid.*, 1939, **23**, 726; *Met. Abs.*, 1941, **8**, 260), an approximate theory of hysteresis of polycrystalline ferromagnetic substances is developed, account being taken of the magnetic interaction between the separate parts. Equations obtained for hysteresis work agree with those of Rayleigh.

Theory of the normal and zero magnetisation curve of a polycrystalline ferromagnetic. K. Kondorsky (*Compt. rend. Acad. Sci. U.R.S.S.*, 1941, **30**, 323–329).—Mathematical. W. R. A.

A58-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES NOW 538.14

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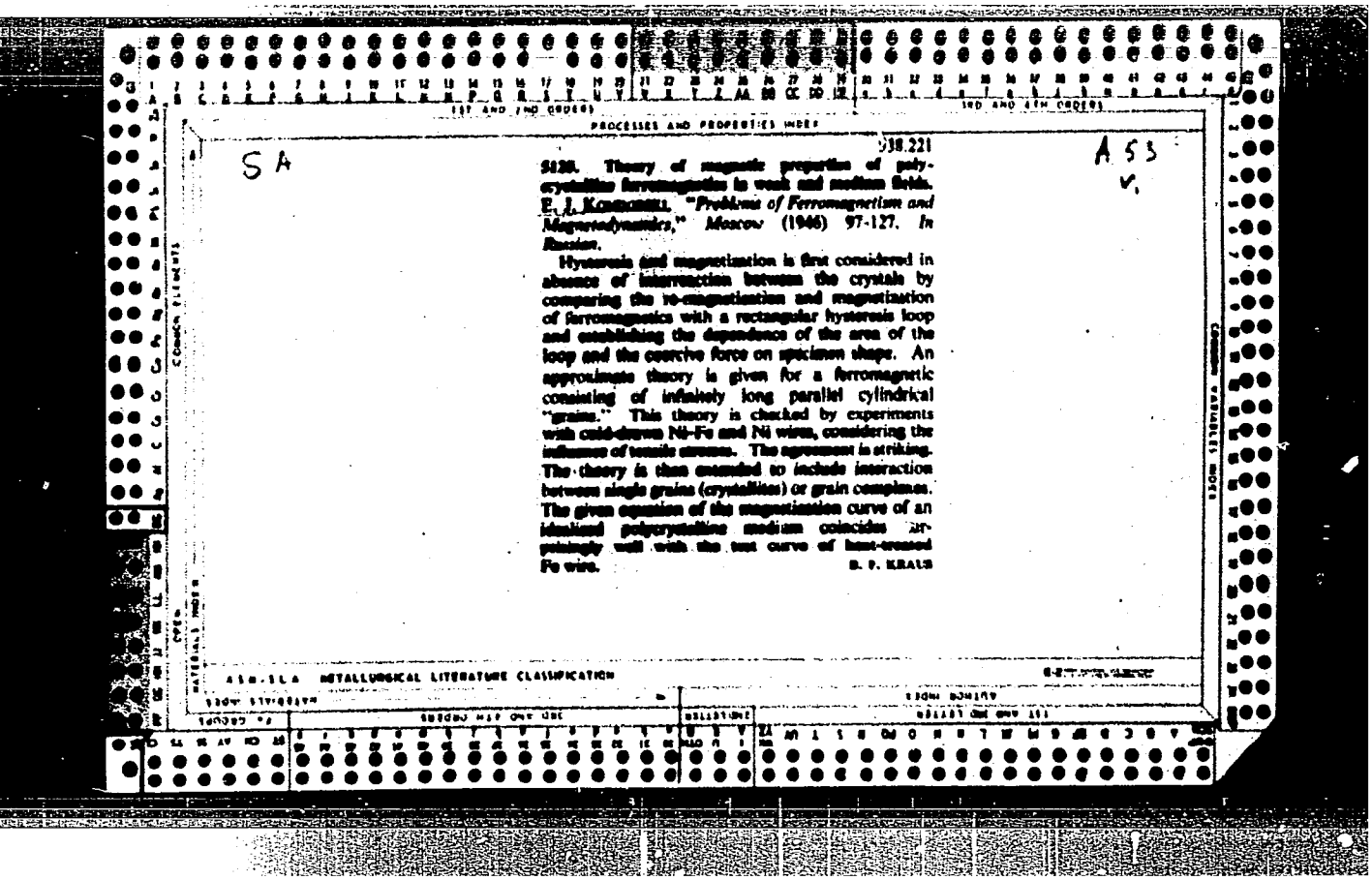
On the theory of magnetization and hysteresis curves of polycrystalline ferromagnetics.—KANEGIESSER, E. *J. Phys., U.S.S.R.*, 6, 3-4, *pp.* 93-110, 1942.—Gives an approx. theory of the magnetization of polycrystalline ferromagnetic bodies with regard to the magnetic interaction betw. their parts. Ferromagnetics consisting of regions with 1 axis of easy magnetization are examined. A general equation is given for such ferromagnetics which connects mean magnetization with field strength, and a connection is established betw. the magnetization and hysteresis curves. A theoretical formula is derived for the hysteresis loop in the region of weak fields and for the dependence of hysteresis losses on field strength. The solution of the equation when the parts have similar structure and form and when the axes of easy magnetization are distributed at random is considered. Theoretical curves are compared with the curves of actual materials.

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

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5128. **Theory of magnetic properties of polycrystalline ferromagnetics in weak and medium fields.** E. I. Kondorskii. "*Problems of Ferromagnetism and Magnetodynamics*," Moscow (1946) 97-127. *In Russian.*

Hysteresis and magnetization is first considered in absence of interaction between the crystals by comparing the re-magnetization and magnetization of ferromagnetics with a rectangular hysteresis loop and establishing the dependence of the area of the loop and the coercive force on specimen shape. An approximate theory is given for a ferromagnetic consisting of infinitely long parallel cylindrical "grains." This theory is checked by experiments with cold-drawn Ni-Fe and Ni wires, considering the influence of tensile stresses. The agreement is striking. The theory is then extended to include interaction between single grains (crystallites) or grain complexes. The given equation of the magnetization curve of an idealized polycrystalline medium coincides surprisingly well with the test curve of heat-treated Fe wire.

B. P. KRAUS

ASM-STLA METALLURGICAL LITERATURE CLASSIFICATION

KONDORSKIY, YE. I.

PA 50T94

USSR/Physics
Ferromagnetism
Anisotropy

Feb 1947

"Works of Soviet Scientists in the Field of Ferromagnetism," Ye. I. Kondorskiy, 22 pp

"Uspekhi Fiz Nauk" Vol XXXIII, No 2

Gives historical account of developments and scientists in following fields: ferromagnetic theory, magnetic anisotropy, magnetic structure of ferromagnets, theory of processes of magnetization in weak and average fields, theory of hysteresis, obtaining magnetic materials, and magnetic flaw detection. Also lists various institutions such as

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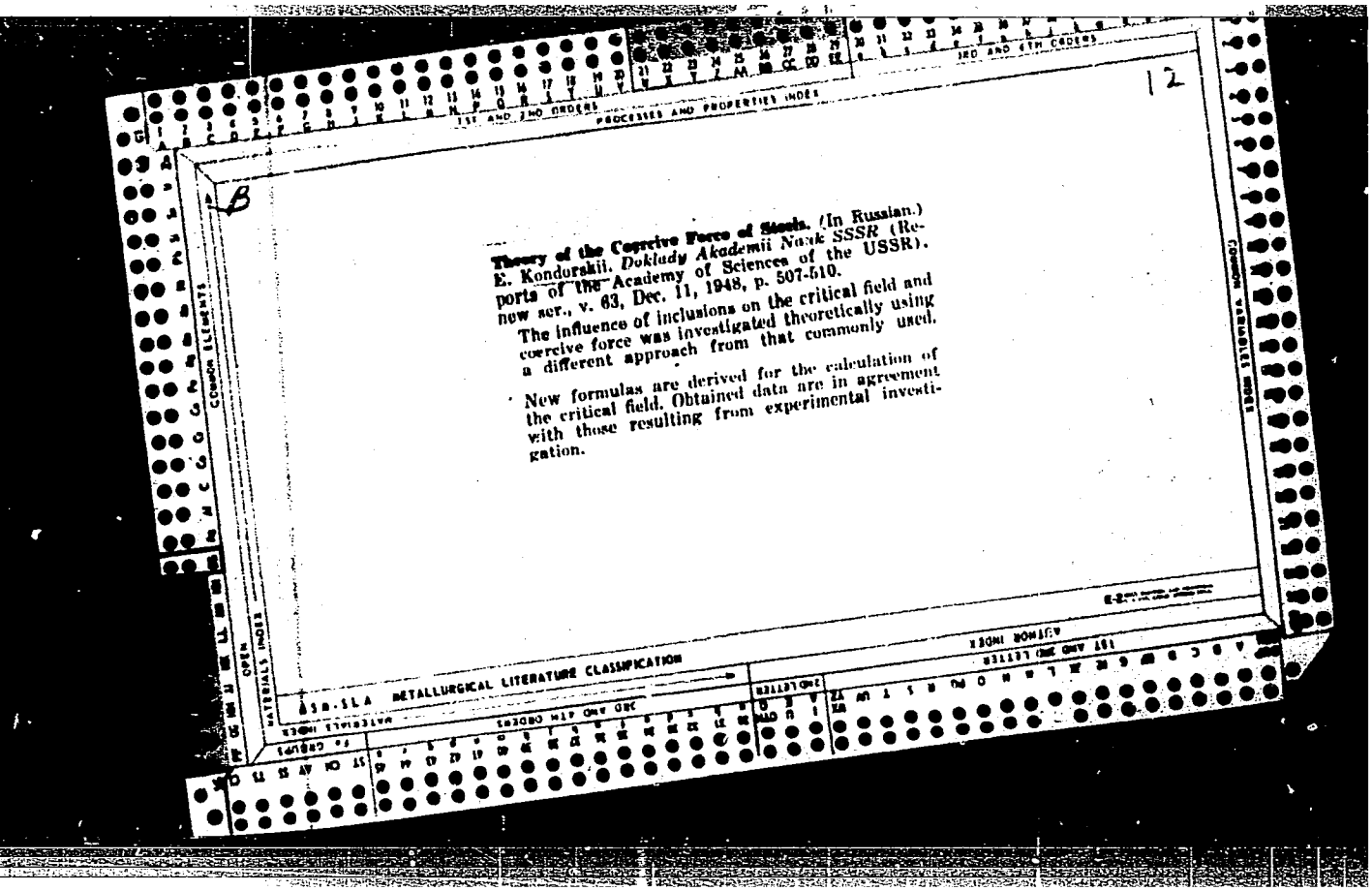
USSR/Physics (Contd) Feb 1947

NIIF MGU and VIAM, and mentions some of scientists associated with these institutions.

IC 50T94



Theory of the Coercive Force of Steels. (In Russian.) E. Kondorskii. *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 63, Dec. 11, 1948, p. 507-510.

The influence of inclusions on the critical field and coercive force was investigated theoretically using a different approach from that commonly used.

New formulas are derived for the calculation of the critical field. Obtained data are in agreement with those resulting from experimental investigation.

CA

9

Theory of the coercive force of mild steels. E. Kondorskiĭ. *Doklady Akad. Nauk S.S.S.R.* 68, 37–40 (1949).—In connection with the structures observed and interpreted by Williams, Bozorth, and Shockley (*Phys. Rev.* 75, 155, 178(1949)) in cubic systems with nonmagnetic inclusions, the conditions for the passage of domain boundaries through the inclusions are examd. analytically. In the case of a uniaxial ferromagnetic with coarse nonmagnetic conclusions, the latter "freeze" the shift of boundaries. This is consistent with Ne'el's (*Cahiers phys.* No. 25, 21 (1944)) conclusion that the boundaries can pass through very small inclusions, the crit. field decreasing with the dimensions of the inclusions. For a ferromagnetic with 3 mutually perpendicular axes of magnetization, and coarse nonmagnetic inclusions, the results are essentially identical with the conclusions of Kersten (*Grundlagen einer Theorie der ferromagnetischen Hysterese und der Koerzitivkraft*, 1943 (*C.A.* 38, 3512⁹)), reached without consideration of the domain structure around the inclusions.

N. Thon

KONDORSKIY E.

"Magnetic Viscosity and the Part Played by the Displacement of Domain Boundaries in the Process of Remagnetization of High-Coercivity Alloys. N. Bulgakov and E. Kondorsky (*Doklady Akad. Nauk S.S.S.R.*, 1949, **69**, (3), 325-328).—[In Russian]. The magnetic viscosity in the alloys (1) Ni 24, Al 72, Cu 1·5%, remainder Fe, after various thermal treatments causing different decompn. of the solid soln. and (2) Ni 13, Al 8, Cu 3, Co 24%, remainder Fe, cooled in a magnetic field and also given various thermal treatments, was studied. Experiments were carried out at various temp. The time interval, T, from the moment of appn. or change of the magnetic field to the moment of measurement of the change of magnetization of the specimen varied between the limits 2×10^{-3} to 81 sec. For $T = 15 \times 10^{-3}$ sec. a Helmholtz pendulum breaker with a ballistic galvanometer was used for the measurements; for $T = 0{\cdot}1$ sec., a manually operated fluxmeter. The measurements were taken on the downward branch of the hysteresis loop and also at the beginning of the magnetization curve. In the latter case the specimens were carefully demagnetized before the experiment. The influence of eddy currents and auto-induction was shown theoretically to be unimportant. The results indicate that the high viscosity which occurs in relatively magnetically soft materials also occurs in high-coercivity alloys. It is concluded that the movement of domain boundaries plays an important part in the remagnetization of such alloys, which is contrary to the views currently accepted. B. and K. also show theoretically that the growth of thermally nucleated domains of favourable orientation is possible at fields greater than the critical value. A purely rotational process can take place only in very fine powders.—Z. S. B.

KONDORSKIY, Ye. I.

"Theory of the Magnetic Properties of Conglomerates and Powders," Iz. ASUSSR, Ser. Geograf. i Geofiz., 14, No. 4, 1950.

Geophysics Institute, Department Physico-Math. Sci., AS USSR

KONDORSKIY, Ye. I.

PA 164T36

USSR/Geophysics - Magnetic Suscep- Jul/Aug 50
tibility
Ultrahigh Frequencies

"Theory of the Magnetic Properties of Conglomerates and Powders," Ye. I. Kondorskiy, Geophys Inst, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geograf i Geofiz" Vol XIV, No 4, pp 294-301

Magnetic susceptibility of powders and mixtures are usually calculated by empirical formulas, which are true only for individual partial cases and do not explain observed dependence of

[redacted] 164T36

USSR/Geophysics - Magnetic Suscep- Jul/Aug 50
tibility (Contd)

susceptibility upon concentration of magnetic component. Calculates theoretically magnetic susceptibility of mixture. Calculated values agree well with experimental data. Submitted 11 Jan 50 by Acad O. Yu. Shmidt.

[redacted] 164T36

CA

2

One-domain structure in ferromagnetic substances and the magnetic properties of finely dispersed substances. E. Kondorskii (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* **70**, 213-16(1950).—Approx. formulas are obtained for the coercive force of ferromagnetic substances consisting of congruent particles, and the dimensions are detd. for which the particles are abs. one-domain, i.e., remain uniformly magnetized in any field. Only the case when the field is directed along the long axis of the cylindrical or ellipsoidal particle is considered, and the axis of easy magnetization is assumed to coincide with it. The crit. values of the half-length for one-domainness are: $l_k = (1/I_s)\sqrt{6\varepsilon A/N\sigma}$ for a cylinder; $l_k = (1/I_s)\sqrt{5\varepsilon A/N\sigma}$ for an ellipsoid, where I_s is the spontaneous magnetization, A is the exchange integral (detd. from the temp. dependence of satn. in the range of low temps.), $\varepsilon = 1/2, 1, 2$, resp., for simple, body-centered, and face-centered cubic lattices, a is the interat. distance along the edge of the cube, N_d is the demagnetizing factor perpendicular to the long axis. Known exptl. values are used to calc. l_k for samples in which $N_d = 2\pi$ and the concn. of the ferromagnetic component is small: l_k for spheres, l_k for ellipsoids, and l_k for cylinders are for Fe 118 A., 98A., and 105 A.; for Ni 382 A., 247 A., and 270 A., resp. For a concn. V of 50% ferromagnetic substance, l_k is approx. 2 times the values in the table. The condition for max. coercive force H_c is the same as that for one-domainness. For $V = 0.5$ and $N_d \approx 2\pi/10$, max. $H_c \approx 530$ oersteds and $l_k \approx 310$ A. for Fe. *Ibid.* **74**, 213-16(1950).—The magnetic properties of ferromagnetic substances consisting of spherical and ellipsoidal particles are considered, and the coercive force is detd. as a function of their form and dimensions. The d. of the exchange energy is assumed const. at all points of the particles. The condition for one-domainness for spherical particles is $r \leq r_0 = (1/I_s)\sqrt{10\varepsilon A/aN}$; it is also the condition for obtaining max. coercive force, $H_{c\,max}$. N is the demagnetization factor, which depends on the concn. of particles; $A = zJ$, in which J is the exchange integral and z is the no. of valence electrons; $\varepsilon = 1, 2$, resp., for space and space-centered cubic lattices; r is the radius of a particle. For ellipsoidal particles, if the ratio l/r is small (l is the length of the longer half axis), the condition for abs. one-domainness and max. H_c is $r \leq r_0 = (1/I_s)\sqrt{10\varepsilon A/aN_d} = l_k$. For large values of l/r, magnetic reversal takes place as in the case of cylindrical particles (part I). The magnetic reversal for intermediate values of l/r is shown in a graph.

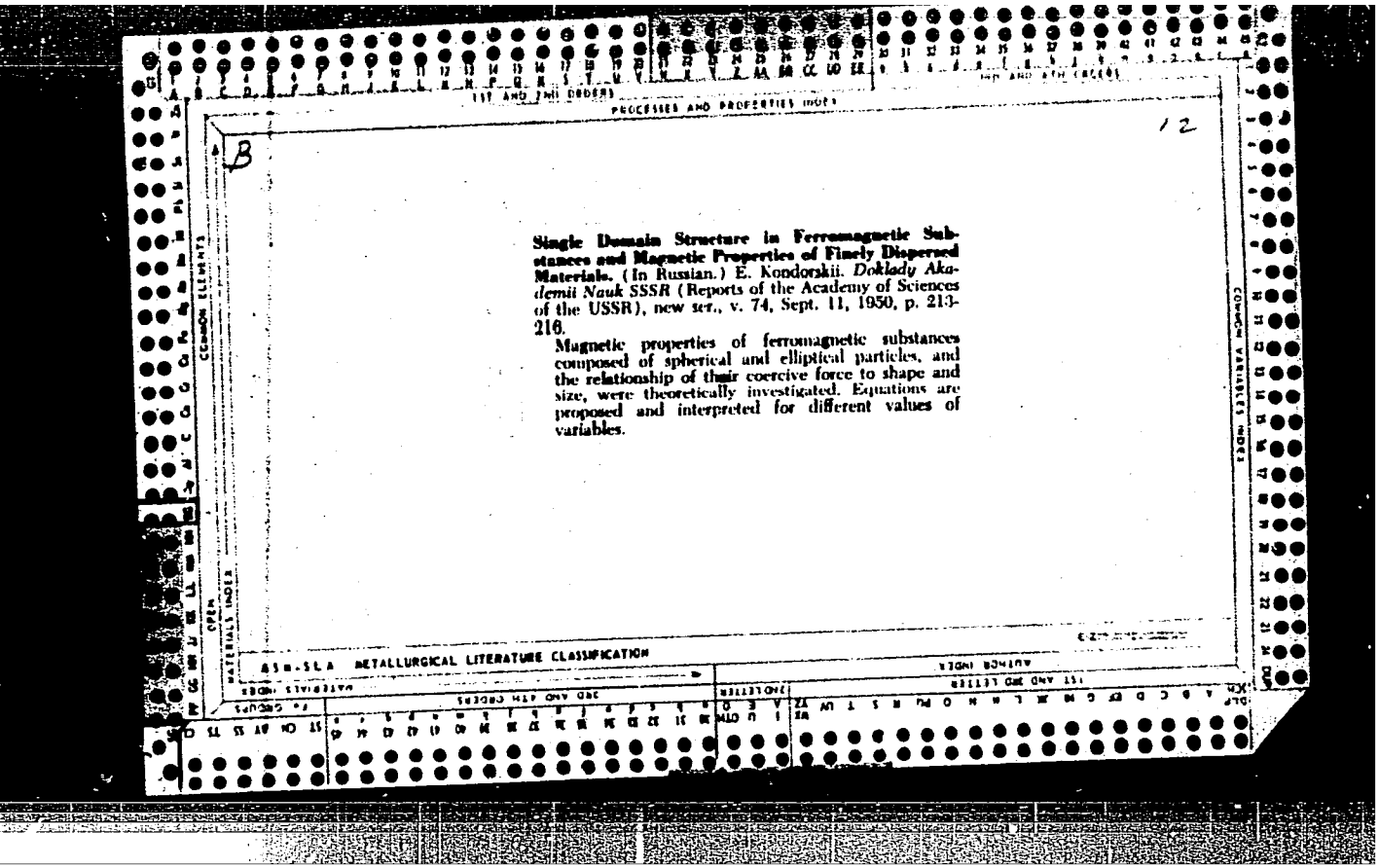
Ellen H. Dunlap

CA

3

little (decreases slightly) with rising temp. The activation energies for the temp. dependence of τ and β (where that temp. dependence is exponential) are very close to E for the dark cond. of the same sample. A qual. explanation of the temp. behavior of τ follows immediately from the representation that for photo-holes in the ground band τ is detd. by the rate of recombination of photoelectrons from the trap level M' with dark holes in the ground zone, the no. of which, n_d (assumed to be much greater than the no. of photo-holes) is $n_d \sim e^{-\delta/kT}$. Constitutively, the kinetic equations for the rates of change of the no. m of electrons at the acceptor levels M, the no. m' of electrons at the trapping levels M', and the no. n of holes in the ground zone, give for the no. n_f of photo-holes, $(dn_f/dt) + n_f\gamma_2 n_d = n_d(\gamma_1 n_d - \gamma_2 m')$, where γ_1 and γ_2 are the recombination coeffs. for the M- and the M'-level electrons, resp., with the ground-zone holes. Solution of this equation gives $n_f = [\rho I(\gamma_1 - \gamma_2)/2\gamma_1\gamma_2(2\gamma_1 - \gamma_2)][2\gamma_1(1 - e^{-\gamma_2 n_d t}) - \gamma_2(1 - e^{-2\gamma_1 n_d t})]$ and, for the no. of photo carriers per unit illuminated surface area, $N_f = \int_0^\infty n_f dz$, and hence for the stationary $N_\infty = \rho I_a(\gamma_1 - \gamma_2)/2b\gamma_1\gamma_2$. Phot. photocond., i.e. increase of the cond. on illumination (the only effect observed) corresponds to $\gamma_1 > \gamma_2$. If, moreover, $\gamma_1 \gg \gamma_2$, then $N_f = (\rho I_a/2b\gamma_2)(1 - e^{-\gamma_2 n_d t})$, with $\gamma_2 n_d = 1/\tau$, which renders the expt. temp. dependence of τ. The phenomenological quantum efficiency is $\beta = \rho n_d/2b$, and, if the absorption coeff. b is assumed to be composed additively of a temp.-independent b_0 and a temp.-dependent $cn_d = c'e^{-\delta/kT}$ term, $\beta = \rho n_d/(2b_0/cn_d)$; this gives, for the temp. ranges I and II, resp., $\beta = \beta/2c$ = const., and $\beta = \rho n_d/2b_0 \sim e^{-\delta/kT}$, in agreement with the expt. The assumed existence of a concurrent mechanism of absorption in Cu_2O is borne out by the known absence of photocond. in the range of strong absorption in Cu_2O. The const. c can be written $c = \beta/\beta'$, where β' = ratio of the no. of quanta extd. by the light from the M levels and the no. of quanta absorbed in the interaction of light with these electrons. It follows that $\beta = \beta'/2$ and, if β' can reach at most = 1, the max. $\beta = 1/2$. For the temp. dependence of $\Delta\sigma$, the theory gives, in the temp. range I, $N_\infty = \rho I_a/2\gamma_2 n_d \sim e^{\delta/kT}$, and in II, $N_\infty = \rho I_a/2\gamma_2 b_0$ = const., in agreement with expt. findings.

N. Thon



B

12

Single Domain Structure in Ferromagnetic Substances and Magnetic Properties of Finely Dispersed Materials. (In Russian.) E. Kondorskii. *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 74, Sept. 11, 1950, p. 213-216.

Magnetic properties of ferromagnetic substances composed of spherical and elliptical particles, and the relationship of their coercive force to shape and size, were theoretically investigated. Equations are proposed and interpreted for different values of variables.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KONDORSKIY, Ye.

USSR/Physics - Ferromagnetic Powders 11 Sep 51

"Theory of Coercive Strength and Magnetic Susceptibility of Ferromagnetic Powders (Dependence Upon Packing Density)," Ye. Kondorskiy, Inst of Phys, Moscow State U imeni Lomonosov

"Dok Ak Nauk SSSR" Vol LXXX, No 2, pp 197-200

Concludes that if the particles are one-domain for very small concns then they remain one-domain during increase in the density of packing; thus the coercive strength of powders with spherical particles does not depend on concn, and the coercive strength of powders with elongated particles can increase for small concns with increase in the

221T87

packing density. If not one-domain for very small concns, the particles can become one-domain with increase in the packing density at a certain concn v_o. Submitted by Acad M. A. Leontovich 13 Jul 51.

221T87

USSR/Geophysics - Magnetism, Rocks Sep/Oct 52

"Theory of Magnetic Properties of Rocks and Powders,"
Ye. Kondorskiy, Geophys Inst, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Fiz" No 5, pp 47-54

Continuation of a previous work (cf. Ye. Kondorskiy,' "Iz Ak Nauk SSSR, Ser Geograf i Geofiz' No 4, 1950). Describes method of detn of magnetic susceptibility of mixts contg elongated or flat grains, variously located, and derives formulas of magnetic susceptibility of these mixts. On basis of these formulas

226T57

he evaluates the effect of elongated and flat grains of rock on its magnetic susceptibility. Derives formulas for obtaining the max magnetization of the mixt in the terrestrial magnetic field. Received 14 May 52.

226T57

KONDORSKIY, Ye.

USSR/Physics - Coercivity Jul/Aug 52

"Nature of High-Coercive Force of Finely Dispersed Ferromagnetics and Theory of Single-Domain Structure," Ye. Kondorskiy, Sci-Res Inst of Phys, Mos State U

"Iz Ak Nauk, Ser Fiz" Vol 16, No 4, pp 398-411

Studies cases of high coercive force and the conditions of existence of single-domain structure. Concludes that, if particles are of single-domain structure at low concns, they will remain so at higher concns.

241T85

KONDORSKIY, YE. PA 241T88

USSR/Physics - Magnetic Saturation Jul/Aug 52

"Dependence on Temperature of Magnetic Saturation of Binary Ferronickel Alloys at Low Temperatures," Ye. Kondorskiy and L. N. Fedorov, Cent Sci-Res Inst of Ferr Metallurgy

"Iz Ak Nauk, Ser Fiz" Vol 16, No 4, pp 432-448

Study of effect of thermal treatment on magnitude of magnetic satn of binary ferronickel alloys. Finds that the "law of two thirds" satisfactorily describes the thermal dependence of alloys of permalloy type at various concns.

241T88

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000824210001-3

L 39463-65 EWI(m)/EWP(t)/EWP(b) IJP(c) JD/JG

ACCESSION NR: AP5006488 S/0056/65/048/002/0429/0436

27
26
B

AUTHOR: Vinokurova, L. I.; Kondorskiy, Ye. I.

TITLE: Influence of uniform compression on the magnetization of dysprosium and terbium 27

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 2, 1965, 429-436

TOPIC TAGS: dysprosium, terbium, magnetization, antiferromagnetism, pressure coefficient, magnetic anisotropy

ABSTRACT: A study was made of the influence of pressure on the magnetization of polycrystalline samples of dysprosium, whose magnetic structure was antiferromagnetic in fields lower than critical (H_{cr}), and on the magnetization of terbium in its ferromagnetic state. The method of measurement and the method of producing pressures were described earlier (Izv. AN SSSR ser. fiz. v. 28, 537, 1964). The measurements were carried out in magnetic fields up to 17 kOe. Extrema were found in the curves of the field dependence of the pressure coefficient of dysprosium. The field H'_{cr} corresponding to the extremal values of the pressure coefficient in-

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L 39463-65
ACCESSION NR: AP5006488

creased with increasing temperature up to 146.5K < T < 169.3K, and then decreased. The transition through this range of temperatures was accompanied by a change in the sign of the pressure coefficient at $H \leq H'_{cr}$ (at $T \leq 145K$, the effect was negative, while at $T \geq 169.3K$, it was positive). The appearance of maxima and minima of the pressure effect at the transition from the antiferromagnetic to the ferromagnetic state and the change in the sign of the pressure coefficient near the Neel point at $H \leq H'_{cr}$ are attributed to the influence of pressure on the values of the magnetic anisotropy constants. It was found that the magnetization of terbium decreased under uniform pressure. The pressure coefficient in weak fields, $H < 10$ kOe, was large ($\approx 10^{-4}$) and varied with pressure. At H = 17 kOe, the pressure coefficient was constant and independent of temperature over the whole investigated range of temperatures from 77 to 169K. It is suggested that the observed reduction in the strong-field magnetization is connected with a change in the value of the exchange interaction integrals under uniform compression. Orig. art. has: 6 figures, 1 formula, and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

Card 2/3

KONDORSKIY, E.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
General and Physical Chemistry

12-3

Theory of one-domain particles. E. Kondorskil (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 82, No. 3, 365-8(1952); cf. *ibid.* 74, 213(1950); *C.A.* 45, 9945g.—The short half-axis R_0 for which ellipsoidal particles of a ferromagnetic powder remain absolutely one-domain is calcd. Functions of a different type from those used previously are used to represent the components of the magnetization I which correspond to a min. free energy W. The iterative method is used to solve the variation problem. The largest R for which I remains uniform is $R \leq R_0 \approx (0.95/I_s)\sqrt{10\,cA/a_0N_R}$, where a_0 is the distance between atoms of the cubic lattice; N_R is the demagnetizing factor along the short axis of the particle. This is the same result as obtained before, except for the factor 0.05. The coercive force is now $H_c = (2K/I_s)[1 - \rho(1 - (R_1^2/R^2))]$, where ρ is a coeff. depending on I_s, K, and N, and N depends on the concn. of particles in the powder. E. H. D.

KONDORSKI, YE. I,

Wireless Engineer
June 1954
Materials and Subsidiary Techniques

(2)

Ferromagnetic Resonance of Nickel-Zinc Ferrites.—E. I. Kondorski & N. A. Smol'kov. (*C. R. Acad. Sci. U.R.S.S.*, 11th Nov. 1953, Vol. 93, No. 2, pp. 237–240. In Russian.) The relaxation times and g-factors of three ferrites were calculated from results of an experimental determination of the real and imaginary components of the magnetic permeability and the dielectric constant at wavelengths of 3·2 and 8·6 cm with the sample placed in a steady magnetic field. The experimental method is described. Results are tabulated and, for one ferrite, shown graphically.

19/4/54

4

KONDORSKIY, Ye.

KONDORSKIY, Ye.; PAKHOMOV, A.

On the theory of the rela''on between spontaneous magnetization and low temperatures. Dokl.AN SSSR 93 no.3:431-434 N '53. (MLRA 6:11)

1. Institut fiziki Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova. Predstavleno akademikom M.A.Leontovichem. (Thermomagnetism)

KONDORSKIY, YE. I.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Kondorskiy, Ye. I.	Works on the theory of ferromagnetism	Moscow State University imeni M. V. Lomonosov

SO: W-30604, 7 July 1954

KONDORSKIY, E.

USSR/Physics - Magnetism

Card : 1/1

Authors : Kondorskiy, E. and Pakhomov, A.

Title : Theory of the relation between spontaneous magnetization of metals and alloys and temperature in the low temperature range

Periodical : Dokl. AN SSSR, 96, Ed. 6, 1139 - 1142, June 1954

Abstract : A formula was derived for the relation between temperature and spontaneous magnetization of a weakly conductive ferromagnetic lattice each atom of which has two electrons on the unfilled shell. The number of energy levels becomes double in comparison with the case in which each atom has only one electron on the unfilled shell. Four references.

Institution : The M. V. Lomonosov State University, Moscow

Presented by : Academician M. A. Leontovich, March 17, 1954

KONDORSKIY, Ye.

1464* Effect of Sheet Thickness on the Magnetic Characteristics of Soft Magnetic Alloys. O svyazi magnitnykh kharakteristik magnitno-myagkikh splavov s tolshchinoi lista. (Russian.) E. I. Gurvich and E. Kondorskii. *Doklady akademii nauk SSSR*, v. 104, no. 4, Oct. 1, 1955, p. 530-532.

Decreasing the sheet thickness of these alloys decreases magnetic penetrability and increases coercive force and hysteresis losses. Specimens of Mo-permalloy and 50% permalloy, prepared in three ways, are tested for this effect. Table, graph, micrographs. 5 ref.

H-16

(1)

KONDORSKIY, Ye.; OZHIGOV, I.

Electric resistance of iron-nickel alloys and its variation in a strong magnetic field in the low (14--90 K) temperature range. Dokl.AN SSSR 105 no.6:1200-1203 D '55. (MLRA 9:4)

1.Institut fiziki Moskovskogo gosudarstvennogo universiteta imeni M.V.Lomonosova. Predstavlena akademikom G.V.Kurdyumovym.
(Iron-nickel alloys--Electric properties) (Metals at low temperatures)

KONDORSKIY, E., GALKINA, O.S, and L.A. CHERNIKOVA

"The Galvanomagnetic Effects in Nickel and Nickel Alloys at the Low Temperature " (2-20degreesK) Moscow

Conference on Physics of Magnetic Phenomena,
May 1956, Sverdlovsk, USSR

KONDORSKIY, E. and OZHIGOV, I.E.

"Electrical Resistance and its Change in the Strong Magnetic Field in Fe-Ni Alloys at the Low Temperature" (14-77 degrees K) Moscow

Conference on Physics of Magnetic Phenomena,
May 1956, Sverdlovsk, USSR

KONDORSKIY, E.

"Low Temperature Properties of Ferrimagnets," a paper presented at the Institution of Electrical Engineers Convention on Ferrites, London, 29 Oct - 2 November 1956

LIVSHITS, Boris Grigor'yevich, professor, doktor tekhnicheskikh nauk; KONDORSKIY, Ye.I., professor, doktor fiziko-matematicheskikh nauk, retsenzent; MIKHRADT, A.G., dotsent, kandidat tekhnicheskikh nauk, redaktor; MODEL', B.I., tekhnicheskiy redaktor

[Physical properties of metals and alloys] Fizicheskie svoistva metallov i splavov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 352 p. (MLRA 10:2)
(Alloys) (Metals)

Kondorskiy, E.I.

USSR / Magnetism. General Problems E-1

AbsJour : Ref Zhur - Fizika, No 4, 1957, No 9471

Author : Kondorskiy, E.I.
Inst : Not given
Title : Development of Research in the Field of Physics of Magnetic Phenomenon. (Conference in Moscow)

Orig Pub : Vestn. AN SSSR, 1956, No 9, 95-98

Abstract : Report on a conference on the physics of magnetic phenomena, held in May 1956, in Moscow, together with a survey of the papers.

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An Investigation of the Magnetic (cont.)

relationship of MS to temperature at low temperatures is better described by the "$T^{3/2}$" than by the "T^2" law which is usually employed at the higher temperatures. An increase in MS is observed when the alloys are annealed; this may be explained by the effect of the ordering process. The change in mean atomic magnetic moment on ordering is 3-3.5%. The "$T^{3/2}$" law for MS makes it possible to calculate the θ' parameter characterizing the exchange reaction in the alloy. Annealing causes θ' to increase by about 15% relative to the value for the hardened state. An analogy with the similar Fe-Pd system leads to the conclusion that this change in exchange energy is due to the ordering processes. The Curie point θ of the corresponding alloys undergo little change as this occurs. The θ'/θ ratio dimishes with with diminution in the Ni content of the alloy, inasmuch as θ' and θ are dependent to different degrees upon the value of the mean atomic magnetic moment and consequently change differently with variation in the composition of the alloy.

1. Iron-nickel alloys--Magnetic properties--Thermal factors 2. Iron-nickel alloys--Magnetic properties--Measurement

P.S.

Card 2/2

137-58-2-3857

KONDORSKIY, YE. I.

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 226 (USSR)

AUTHORS: Gurvich, Ye. I., Kondorskiy, Ye. I., Popova, V. P.

TITLE: The Permeability and Losses of Magnetically Nonretentive Alloys of Various Thickness in Alternating Fields (Pronitsayemost' i poteri magnitomyagkikh splavov raznykh tolshchin v peremennykh polyakh)

PERIODICAL: Sb. tr. Tsentr. n.-i. in-t chernoy metallurgii, 1956, Nr 15, pp 131-151

ABSTRACT: Measurement of the magnetic permeability and loss (L) was performed by a bridge circuit in accordance with a method previously suggested (RzhMet, 1957, Nr 12, abstract 25220K), and at induction values attaining 80% of the saturation level in the frequency interval of 400-300 kc. 0.2-0.02 mm gage strips of the following commercial alloys were investigated: 50N, N79MA, 80NKhS, 50NKhS, and 79NM. The L of high-nickel alloys drops invariably with a diminution in the thickness of the strip, since in the case of these alloys the L are fundamentally determined by eddy currents. In the case of low-nickel alloys a significant portion of the L are

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The Permeability and Losses of (cont.)

hysteresis losses, increasing as the thickness of the strip diminishes. Therefore, in the case of these alloys, each frequency value corresponds to an optimum thickness of the strip at which L is minimal. Recommendations are made for the employment of various alloys in different frequency intervals, and the optimum strip thickness for the various frequencies is indicated.

P.S.

1. Nickel alloys--Magnetic properties--Measurement

Card 2/2

KONDORSKIY, Ye.I.

Progress in studies on the physics of magnetic phenomena (conference in Moscow). Vest. AN SSSR 26 no.9:95-98 S '56. (MLRA 9:11)
(Magnetism)

KONDORSKIY, Ye.I.

CARD 1 / 2 PA - 1471

SUBJECT USSR / PHYSICS
AUTHOR KONDORSKIJ,E.I., PACHMOV,A.S., ŠIKLOŠ,T.
TITLE On the Theory of the Spontaneous Magnetization of Ferromagnetic Semiconductors within the Domain of Low Temperatures.
PERIODICAL Dokl.Akad.Nauk, 109, fasc.5, 931-934 (1956)
Issued: 10 / 1956 reviewed: 11 / 1956

Here the temperature dependence of spontaneous magnetization is computed by the method of second quantization in the form worked out by N.N.BOGOLJUBOV and S.V.TJABLIKOV. On the occasion of an indirect exchange, as e.g. in ferrites, the HAMILTONIAN can be represented by the introduction of the so-called integrals of indirect exchange in the same manner as in the case of direct exchange interaction. This HAMILTONIAN is explicitly given. The crystal lattice of the ferrite examined on this occasion can be represented as the totality of two inversely magnetized not equivalent sub-lattices A and B. For the energy of the ground level (the lowest level) an expression is given. The energy spectrum of the system, which is necessary for the determination of the temperature dependence of the spontaneous magnetization, is determined in the state near the ground level E_o of energy, i.e. for weakly excited states. The HAMILTONIAN is transformed by transition from spin operators to FERMI operators.
The eigenvalues E_k of the HAMILTONIAN are determined from the conditions for the solution of several equations mentioned here and from normalization conditions. The solution results in 2 systems of equations for the determination of the coefficients. The two solution ansatzes for $E_k^{(1)}$ and $E_k^{(2)}$ are written down for

Dokl.Akad.Nauk, 109, fasc.5, 931-934 (1956) CARD 2 / 2

the here investigated case of two nonequivalent sub-lattices. These solutions for ferromagnetic lattices differ essentially from the corresponding expressions for the antiferromagnetic lattice mentioned by N.N.BOGOLJUBOV and S.V.TJABLIKOV, Zurn.eksp.i teor.fis,19, 251,256 (1949).
By transition to approximation of the next neighbors the formulae:
$E_k^{(1)} = \varepsilon_o + \varepsilon_1 a^2|k|^2$, $E_k^{(2)} = \varepsilon_2 a^2|k|^2$ are obtained by the development in series of the coefficients according to low values of the wave number k restricted to terms of second order (with respect to k). Here a denotes the distance between the next neighbors; ε_o, ε_1 and ε_2 are expressed by the integrals of the direct exchange among the next neighboring ions. Now the effect produced by an exterior magnetic field on the system of electrons of the ferrite is taken into account, and, after carrying out the usual statistical thermodynamical computations, the expression is obtained for the temperature dependence of the spontaneous magnetization of the ferrite within the range of low temperatures.
In the same manner it is possible to deal with forrite, the crystal lattice of which consists of a totality of three nonequivalent sublattices.

INSTITUTION: Moscow State University "M.V.LOMONOSOV".

KONDORSKIY, Ye.I.

AUTHOR: Kondorskiy, Ye. I.

AUTHORS: Kondorskiy, Ye. I., Galkina, O. S., Chernikova, L. A. 48-8-12/25

TITLE: The Electric Resistance and Its Modifications in the Magnetic Field and in Nickel Alloys at Low Temperatures (Elektricheskoye soprotivleniye i yego izmeneniye v magnitnom pole u splavov nikelya pri niskikh temperaturakh)

PERIODICAL: Izvestiya Akad. Nauk SSSR, Ser. Fiz., 1957, Vol. 21, Nr 8, pp. 1123-1130 (USSR)

ABSTRACT: The task to be accomplished by this paper was to investigate the specific electric resistance and its deviations in the magnetic field in the case of nickel and its alloys with copper, chromium, and manganese at temperature of 2 to 4.2 and 14 to 20.4 K. The present work intends to re-examine the theories concerning anomalies of electric conductivity of ferromagnetic alloys, and the further development of knowledge of this field. Such scientific papers as deal with this subject are here described as unsatisfactory. Existing scientific treatises concerning this field by the scientists: Meisnet and Voygt, Smit, Kondorskiy and Ozhigov, Mazumoto and Shirakava are mentioned, but it is said in this connection that the problems raised by the present paper have hitherto not been dealt with. In the chapter dealing with Measuring Methods it is

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[illegible] and 25%, resistance is only to very low degree dependent on temperature at 4.2-20,4°K, but that, in the case of alloys with 15 and 20% copper content and at a temperature of 2-300° the decrease of the resistance [illegible] according to

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The Electric Resistance and Its Modifications in the Magnetic Field and in Nickel Alloys at Low Temperatures. 48-8-12/25

the increase of temperature. In the chapter dealing with Modifications of the electric resistance in Ni-Mn alloys becoming "ordered" it is said that the value R_T/R_T of the doma orientation in the longitudinal magnetic field diminishes in the case of the aforementioned Ni-Mn alloys. At the temperature of liquid helium this value increases to six times the value it has at a temperature of 283°K in the case of a hardened alloy. In the case of Ni_3Mn samples this value at first rises after cooling of longer duration with the rising of the field, but it then decreases again, and in the case of strong magnetic fields and temperatures of between 195 and 283°K it even becomes negative. The coefficient characterizing the inclination of the curves of this value from the field is reduced according to the extent of the decrease of the temperature, and therefore this value changes its sign at low temperatures and particularly strong fields. There are 11 figures, 1 table, and 11 references, 5 of which are Slavic.

ASSOCIATION: Dept. of Physics of Moscow State University imeni M.V.Lomonosov (Fizicheskiy fakul'tet Moskovskogo gos.universiteta imeni M.V.Lomonosova)

AVAILABLE: Library of Congress

Kondorskiy, Ye. I.

AUTHORS: Kondorskiy, Ye. I., Ozhigov, I. Ye. 48-8-13/25

TITLE: The Electric Resistance and Its Modification in a Strong Magnetic Field in Iron-Nickel Alloys Within the Range of Low Temperatures (14-77°K) (Elektricheskoye soprotivleniye i yego izmeneniye v sil'nom magnitnom pole u zhelezonikelevykh splavov v oblasti nizkikh (14-77°K) temperatur).

PERIODICAL: Izvestiya AN SSSR,Ser.Fiz., 1957, Vol. 21, Nr 8, pp. 1131-1132 (USSR)

ABSTRACT: It is the purpose of this paper to re-examine the quantum theory of the electric conductivity of ferromagnetic metals as well as to develop this theory further. The data given by Shirakava are cited here which refer to the temperatures up to -195°. The next stage of the work is the investigation of the specific resistance and galvanometric effect $\Delta R_n/R$ of the longitudinal magnetic field of iron- nickel alloys with a nickel concentration of 40-100% within range of the low temperatures 14 ÷ 90° K and determination of the temperature connection Q with the $\Delta R/R$ value, as also the explanation of the respective effect produced by thermal treatment of the samples is given. The samples are taken from the melt in the high-frequency furnace. In order to attain an "Ordered position" of the samples they are annealed in stages during a period of 14 days (and nights) at temperatures of 500÷ 410°, after which they are slowly cooled. The "unordered state" was again

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KONDORSKIY, Ye. I.

PA - 2679

AUTHOR KONDORSKIY E.I., PAKHOMOV A.S.

TITLE Contribution to the theory of ferromagnetism of metals and alloys at low temperatures. (K teorii ferromagnetisma metallov i splavov pri nizkikh temperaturakh. - Russian).

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 32, Nr 2, pp 323 - 332 (USSR).

Received: 5/1957 Reviewed: 6/1957

ABSTRACT The present work has the following aim:
1.) Determination of the theoretical dependence of spontaneous magnetization on temperature in close proximity to absolute zero if the number of electrons with not compensated magnetic moments is larger than the number of atoms,
2.) Derivation of formulae for the temperature dependence of the spontaneous magnetization (at low temperatures) on binary ferromagnetic ordered alloys of a different crystal structure and with different composition.
At first the general case of a crystal is investigated which consists of N-atoms of types that are different from h. These atoms are assumed to be located in the nodes of the lattice and each atom is assumed to have s_h ferromagnetic electrons (which differ from each other by their state).

The HAMILTONIAN of the system is written down for the case that only an electrostatic interaction is taken into account.

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CARD 2/2

KONDORSKIY, Ye. I.

USSR/Magnetism - Magnetic Resonance F-5

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 1198

Author : Beneshko, N.A., Kondorskiy, Ye.I.

Inst : Moscow State University

Title : Temperature Dependence of the Overhouser Effect in Metallic Lithium.

Orig Pub : Zh. eksperim. i teor. fiziki, 1957, 32, No 3, 611-612

Abstract : The Overhouser effect was investigated in dispersed metallic lithium in the temperature range from 77.2 to 373° K in a constant magnetic field of intensity 30.10 oersted. The results obtained show that the width of the resonance line increases with diminishing temperature.

Card 1/1

KONDORSKIY, Ye. I., and SEDOV, V. L. (University of Moscow)

"Variation of Saturation Magnetization and Electrical Resistivity of FeNi Alloys, under Isotropic Compression at Low Temperatures."

report presented at Colloquim on Magnetism, Grenoble, France, 2-5 Jul 58.

Eval: B - 3,111,755 3 Sep 58.

VOLKOV, D. I., KONDORSKIY, E. I., KRINCHIK, G. S., MIRYASOV, N. Z., PAPSANOV, A. P., RODE, V. E., CHECHERNIKOV, V. I., and GOFMAN, U. (Moscow Univ.)

"Results of Studies of Certain Magnetic and Magneto-Optical Properties of Ferro-Magnetics:"

I "Saturatior Magnetization of CuNi Alloys at Low Temperatures."
II "Magnetic Properties of MnB System."
III "Temperature Dependence of Paramagnetic Susceptibility of Ferrites."
IV "Magneto-optical Resonance in Ferromagnetics." (Krinchik)

Report presented at Colloquim on Magnetism, Grenoble, France, 2-5 Jul 58.

Eval: B - 3,111,755. 3 Sep 58.

24(3)

AUTHORS: Kondorskiy, Ye.I., and Bekeshko, N.A. SOV/155-58-2-43/47

TITLE: Overhauser-Effect in Metallic Lithium (Effekt Overkhauzera v metallicheskom litii)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1958, Nr 2, pp 204-207 (USSR)

ABSTRACT: The arrangement of the experiment and the method described by the authors in [Ref 5,6] are used for the experimental investigation of metallic lithium. The authors investigated the dependence of the nuclear polarization on the achievement of a high-frequency magnetic field (by measuring the amplitude of the magnetic nuclear resonance) and the dependence of the nuclear polarization on the frequency of the electronic resonance. The results are represented in five figures and in essential they agree with the theory. The strong dispersion considered under otherwise equal conditions for the different investigated pieces of lithium seems to be very interesting.

There are 5 figures and 7 references, 2 of which are Soviet, 3 American, and 2 Italian.

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KONDORSKIY, Ye. I.

24(3)

Author: D'yakov, G.P., Candidate of Physical-Mathematical Sciences SOV/55-58-2-34/35

TITLE: Survey of Papers Read by Scientists of Moscow University at the All-Union Congress on the Physics of Magnetic Materials (Obzor dokladov uchenykh moskovskogo universiteta na vsesoyuznom soveshchanii po fizike magnitnykh materialov)

PERIODICAL: Vestnik Moskovskogo Universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1958, Nr 2, pp 247-250 (USSR)

ABSTRACT: From December 6 - 11, 1957 there took place the fourth Union Congress on physics of magnetic materials in Leningrad. (The first two meetings took place 1946 and 1951 in Sverdlovsk, the third meeting 1956 in Moscow). The congress was o[illegible]nized by : Academy of Sciences of the USSR, Department of Phy[illegible]al-Mathematical Sciences, Scientific Council on Fundamental Problems of Magnetism, Institute for Semiconductors of the Academy of Sciences, USSR and Committee for Magnetism. There were more than 300 participators, 59 lectures were given, among them the following lectures of the representatives of the Moscow State University :

1. Professor R.V. Telesnin, Ye.F. Kuritsyna, Lecturer "On the Velocity of Magnetic Reversal of the Ferromagnetics".
2. Professor R.V. Telesnin, Ye.V. Karchagina, Assistant "On Magnetic Viscosity of Ferrites".
3. Professor R.V. Telesnin I.G. Shishkov, Aspirant "Effect of Magnetic Viscosity on the Frequency Characteristics of Ferrites".
4. M.V. Degtyar, Lecturer "Variations of Structure and Antiferromagnetic Properties of Ni_3Fe".
5. M.A. Grabovskiy, Lecturer, S.Yu. Brodskaya, Junior Scientific Assistant "Magnetic Properties of Anisotropic Stones".
6. G.P. D'yakov, Lecturer "Magnetostriction Properties of Binary Alloys".
7. Professor Ye.I. Kondorskiy, L.V. Sobolev, Assistant "Electric Properties of Ni-Zn-Ferrites".
8. N.Z. Miryasov, Senior Scientific Assistant, A.P. Parsanov, Aspirant "Magnetic Properties and Structure of Manganese - Boron - Alloys".
9. N.A. Smol'kov, Senior Scientific Assistant, B.P. Belov "Some Properties of Ferrites".
10. N.A. Smol'kov, Senior Scientific Assistant, Yu.P. Simanov, Lecturer "Properties of $Ni Fe_2 O_4$ - $Mg Fe_2 O_4$".
11. N.A. Smol'kov and Ye.I. Fomenko, Engineer "Properties of Ferrites in the High-Frequency Range".
12. Professor K.P. Belov, K.M. Bol'shova, Lecturer, T.A. Yelkina, Lecturer, and M.A. Zaytseva, Junior Scientific Assistant "Ferrites With Compensation Point".
13. K.P. Belov, Ye.P. Svirina, Assistant "Electric and Galvanomagnetic Properties of the Manganese Ferrites".
14. T.A. Timofeyeva, Junior Scientific Assistant, A.V. Zalesskiy "Production of Monocrystals of Ferrites".
15. Professor K.P. Belov, A.V. Ped'ko, Junior Scientific Assistant "On Galvanomagnetic Properties of Ferromagnetic Alloys Near the Absolute Zero of Temperature".

The participators of the meeting visited a laboratory of the Institute of Semiconductors of the Academy of Sciences of the USSR (Professor G.A. Smolenskiy).
The meeting was concluded by Professor S.V. Vonsovskiy, Corresponding Member, Academy of Sciences, USSR with the indication to the following Third Congress planned for 1958.
1. Magnetic Resonance and Galvanomagnetic Effects in Kazan".
2. Ferromagnetic Semiconductors (Ferrites) - in Minsk.
3. Block-Domain Structure of the Ferromagnetics and Paramagnetic Effects - in Krasnoyarsk.