KOSTENKO, M.V.; MIROLYUBOV, N.N.; ORLOV, V.N.

Effect of intersecting telecommunication line conductors on their asymmetry coefficient. Trudy LPI no.195:620-630 '58. (MIRA 11:10)
(Electric lines)

KOSTENKO, M.V.; SIDEL'NIKOV, V.V.; ORLOV, V.N.

Parameters of high-frequency communication channels using overhead and cable electric power transmission lines. Sbor. rab. po vop. elektromekh. no.5:240-251 '61. (MIRA 14:6)
(Telephones lines)
(Radio lines)
(Telegraph lines)

ORLOV, V.N., BYKOVSKIY, YA.L., MIKUTSKIY, G.V., SIDELNIKOV, V.V.

"Characteristics of carrier current channels for teletransmission over power lines."

Report to be submitted for the 19th Biennial Session, Intl. Conf. on Large Electric Systems(CIGRE), Paris France, 16-26 May '62.

BYKOVSKIY, Comm. Lab., All-Union Scientific Research Inst. Electro Power Engineering.
MIKUTSKIY, Central Scientific Research Elect. Engineering Lab. Min. of Elect. Power Stations, USSR.
ORLOV, Ural, Polytechinal Inst. im S.M. Kirov, Sverdlovsk
SIDELNIKOV, Chair Automatics and Telemechanics, Leningrad Polytechinal Inst. im M.I. Kalinin

ORLOV, V.N.; SIDEL'NIKOV, V.V.

Method for calculating the high-frequency parameters of overhead power transmission lines. Elektrosvias' 16 no.7:56-63 Jl '62. (MIRA 15:7)

(Electric power distribution) (Electric lines--Overhead)

L 38574-65
ACCESSION NR: AR5002962

0

the model is heated electrically to maintain constant density of the heat flux along its surface. Tests carried out on an enlarged model of a biangular channel with interchangeable sections made it possible to select more suitable configurations of localized channel expansions and, in turn, this facilitated a significant improvement in the ratio of emitted heat to hydraulic drag.

SUB CODE: PR, TD ENCL: 00

KADOMSKAYA, K.P.; LEVINSHTEYN, M.L.; MIKHAYLOV, Yu.A.; OKOROKOV, V.R.; ORLOV, V.N.; POLOVOY, I.F.; KOSTENKO, M.V., prof. red.

[Internal overvoltages of high-voltage a.c. networks, 1961-1963] Vnutrennie perenapriazheniia v elektricheskikh setiakh vysokogo napriazheniia peremennogo toka, 1961- 1963. Moskva, 1964. 241 p. (MIRA 18:4)

1. Akademiya nauk SSSR. Institut nauchnoy informatsii.
2. Chlen-korrespondent AN SSSR (for Kostenko).

MIKHAYLOV, Yu.A., inzh.; ORLOV, V.N., kand. tekhn.nauk; POLOVOY, I.F., kand.tekhn.nauk; CHERNYAYEV, I.V., kand.tekhn.nauk; VERSHKOV, V.A., inzh.; NAUMOVSKIY, L.D., inzh.; TOPOLYANSKIY, L.B., inzh.

Registration of internal overvoltages in 110 to 500 kv. operational power distribution networks. Elek. sta. 36 no.2:48-52 F '65. (MIRA 18:4)

ORLOV, V.M.

Real vertical gradient of the T intensity of a normal geomagnetic field. Geol. i geofiz. no.5:108-110 '65.

(MIRA 18:8)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln, Moskva.

L 6369-66 EWT(l)/EWA(h) 39

ACC NR: AP5026754 SOURCE CODE: UR/0286/65/000/017/0028/0028

INVENTOR: Belina, M. T.; Orlov, V. N.; Paranin, V. A.

TITLE: A diode switch. Class 21, No. 174234 [announced by the Enterprise of the State Committee on Radio Electronics SSSR (Predpriyatiye Gosudarstvennogo komiteta po radioelektronike SSSR)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 28

TOPIC TAGS: switching circuit, electronic commutator

ABSTRACT: This Author's Certificate introduces a diode switch which contains four commutating elements interconnected in a ring circuit. Connected to the switch unit are controlling voltage sources and the channels to be switched. The number of channels which can be switched is increased by connecting these channels to the common points between the arms of the ring circuit which contain the commutating elements. These elements are connected to independent controlling voltage sources and two isolation capacitors are connected in each of the arms.

UDC: 621.318.57

Card 1/2

0902 0156

L 6369-66

ACC NR: AP5026754

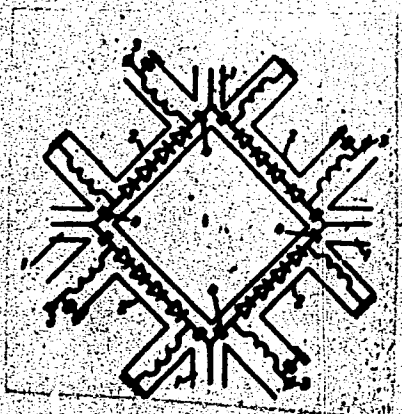

Fig. 1. 1--channels to be switched; 2--arms of the ring circuit; 3--terminals for connection of the controlling voltage sources; 4--isolation capacitors

SUB CODE: EC/ SUBM DATE: 10Aug64/ ORIG REF: 000/ OTH REF: 000

Card 2/2

GREBEN[illegible] [illegible]; [illegible]ALEV, N.A.; ORL[illegible], [illegible]

Experiences in operating automatic devices for registering internal overvoltages in power systems. Trudy LPI no.242:159-196 '65. (MIRA 18:8)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

ORLOV, V.N.

Electrokymographic symptoms of the cicatricial stage of myocardial infarction. Kardiologiia 5 no.1:42-46 Ja-F '65.

(MIRA 18:9)

1. 1-ya kafedra terapii (zav.- prof. A.Z. Chernov) i 1-ya kafedra rentgenologii i meditsinskoy radiologii (zav.- prof. S.A. Reynberg) Tsentral'nogo instituta usovershenstvovaniya vrachey, Moskva.

OCHKUR, A.P.;

[illegible]

L 11524-66 EWT(l)/EWT(m)/EWG(m)/EPF(n)-2/EWP(j)/T/ETC(m)-6 JD/AWW/DJ/RM

ACC NR AT6003075 SOURCE CODE: UR/3181/63/000/015/0106/0115

AUTHOR: Orlov, V.N.; Freydin, A.S.

ORG: None

TITLE: Experimental determination of the intensification of heat transfer in a two-angle channel with local expansion of the flow-through cross-section

SOURCE: Kuybyshev. Aviatsionnyy institut. Trudy, no. 15, pt. 2, 1963. Doklady kustovoy nauchno-tekhnicheskoy konferentsii po voprosam mekhaniki zhidkosti i gaza (Reports of the Joint scientific-technical conference on problems of the mechanics of liquid and gas). 106-115

TOPIC TAGS: convective heat transfer, hydraulic resistance, hydrodynamic theory, internal flow, gas flow

ABSTRACT: The experimental investigations were carried out in an enlarged model of a two-angle channel consisting of five half-meter textolite compartments, on the inner surface of which were fastened 10 longitudinal conducting constantan bands. The bands divided the transverse cross section of the two-angle channel into 5 characteristic zones (see Fig. 1).

Card 1/3

L 11524-66
ACC NR AT6003075

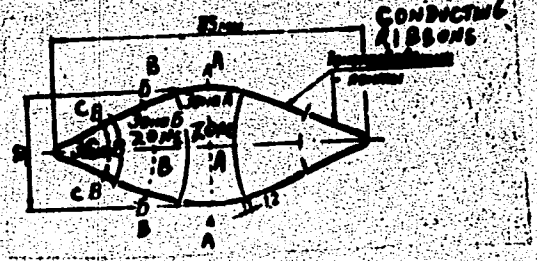

Fig. 1. Division of transverse cross section of channel into zones.

$F_A = 4.74\ cm^2$

$F_B = 3.52\ cm^2$

$F_C = 1.55\ cm^2$

Card 2/3

L 11524-66
ACC NR: AT6003075

The local expansion of the cross sections of the four different forms was carried out in the three-walled compartment. The results of the working up of the experimental data on resistance and heat transfer are presented in the form of relationships derived for each zone at three different velocities of the air current. Renunciation of the principle of "internal flowing around" in two-angle channels in a plate-type heat exchanger made it possible to increase the ratio of the heat given up to the hydraulic resistance from a level of 0.5-0.60 to a level of 0.7-1.0. With an increase in the Reynolds number from 40,000 to 100,000 there was a noticeable lowering in the increase of the heat transfer rate (by 5 to 10%). Orig. art. has: 4 formulas and 9 figures.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 003/ SOV REF: 000/ OTH REF: 000

Card 3/3

L 07449-67 EWT(1)
ACC NR: AP6035845 (N) SOURCE CODE: UR/0413/66/000/020/0055/0056

INVENTOR: Orlov, V. N.; Sokolinskiy, A. G.

32
B

ORG: none

TITLE: A temperature-compensated ultrasonic delay line. 25 Class 21, No. 187083

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 55-56

TOPIC TAGS: circuit delay line, ultrasonic effect, ultrasonic equipment, ultrasonic frequency

ABSTRACT: An Author Certificate has been issued for an ultrasonic delay line (see Fig. 1) with a rigid sound conductor and a distributed input and output. The

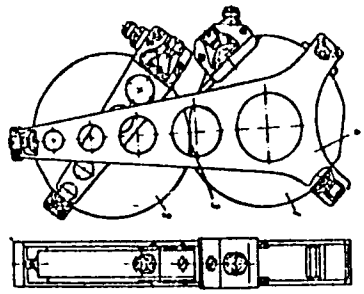

Fig. 1. Temperature stabilized ultrasonic delay line

1, 2 - Rigid sound conductor; 3 - transition layer; 4 - tightening bracket.

Card 1/2 UDC: 621.374.5

L 07419-67

ACC NR: AP6035845

O

rigid sound conductor is made from a quartz and a magnesium part to reduce the temperature coefficient. Both parts are located in the same plane and are polygon-shaped. The two parts, linked by a transition layer, are mechanically connected with a tightening bracket. Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 27Apr64/ ATD PRESS: 5104

Card 2/2 LS

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

L 32007-66 EWI(d)/FSS-2/EWT(1)

ACC NR: AP6005291 SOURCE CODE: UR/0413/66/000/001/0034/0034

INVENTOR: Sokolinskiy, A. G.; Orlov, V. N.

15
B

ORG: none

TITLE: Method of suppressing false signals. Class 21, No. 177458

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 34

TOPIC TAGS: signal reflection, acoustic line, false signal, signal suppression

ABSTRACT: An Author Certificate has been issued describing a method of false-signal suppression in ultrasonic delay lines with multiple signal reflection in a

25

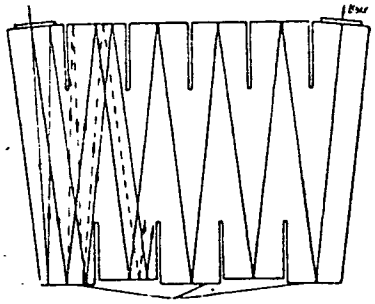

Fig. 1. False-signal suppression

1—3 - Offset reflecting platforms.

Card 1/2 UDC: 621.374.5

L 32007-66

ACC NR: AP6005291

rectangular acoustic line containing reflecting platforms. To equalize false signals at the output of lines, part of reflecting platforms is offset in parallel to the other in the plane of the beam direction (see Fig. 1). Orig. art. has: 1 figure. [NT]
[Translation of abstract]

SUB CODE: 17/ SUBM DATE: 27Aug64

Card 2/2

32976
S/641/61/000/000/003/033
B112/B138

26.2242
24.6500

AUTHORS: Marchuk, G. I., Orlov, V. N.

TITLE: Theory of adjoint functions

SOURCE: Krupchitskiy, P. A., ed. Neytronnaya fizika; sbornik statey. Moscow, 1961, 30-45

TEXT: The authors derive a number of perturbation theory relations for different functionals which occur in the theory of emittive transitions. To simplify the formulation of perturbation theory relations, adjoint functions are introduced, which have the physical meaning of particle "values". The concept of the value of a particle is defined as follows If the particle flux φ satisfies the equation $L\varphi = q$, and if φ_p^+ satisfies the adjoint equation $L^+\varphi_p^+$, where p is an arbitrary stream function, then φ_p^+ is said to be the particle value with respect to the functional $I_p[\varphi] = (\varphi, p)$. The formula $\delta I_p = -(\varphi_p^+, \delta L\varphi)$ is valid for the case of small perturbations. These general considerations are applied to the operator

Card 1/2

32976
S/641/61/000/000/003/033
B112/B138

Theory of adjoint functions

$L\varphi \equiv \frac{1}{v}\frac{\partial \varphi}{\partial t} + \vec{\Omega}\nabla\varphi + \Sigma(E)\varphi - \int d\vec{\Omega}' \int dE' \varphi(\vec{r}, E', \vec{\Omega}', t)\Sigma(\vec{\Omega}' \to \vec{\Omega}, E' \to E)$, where $\Sigma(E)$ is the interaction cross-section. Neutron values in a reactor are investigated in the final section of the article. D. I. Blokhintsev and A. S. Romanovich are mentioned. L. N. Usachev (Doklady sovetskoy delegatsii na Mezhdunarodniy konferentsii po mirnomu ispol'zovaniyu atomnoy energii, Reports of the Soviet delegation on the international conference for peaceful uses of atomic energy, Geneva, 1955, p.25 (1955)) and B. B. Kadomtsev (Dokl. AN SSSR, 113, No. 3 (1957)) are referred to. There are 6 references: 3 Soviet and 3 non-Soviet. The two references to English-language publications read as follows: Weinberg A. Amer. J Phys., 20, 7 (1952); Ehrlich R , Hurwitz H. Nucleonics, 12, 2 (1954).

Card 2/2

ORLOV, V.N.; YESIN, O.A.; SHURYGIN, P.M.

Investigating the direct reduction process of iron oxides from molten slag by the electromotive force method. Izv. vys. ucheb. zav.; chern. met. no. 11:12-19 '60. (MIRA 13:12)

1. Ural'skiy politekhnicheskiy institut.
(Iron oxide) (Electromotive force)

S/069/63/025/002/008/010
A057/A126

AUTHORS: Solyanek, Ye.G., Zaytseva, K.A., Orlov, V.N.

TITLE: Method for the preparation of a highly dispersed mist with a large water content

PERIODICAL: Kolloidnyy zhurnal, v. 25, no. 2, 1963, 234 - 237

TEXT: A method and an appropriate device for the preparation of a highly dispersed mist (mean radius of a droplet is 1.5 μ) with a high water content (about 200 g/m^3) was developed. This kind of supercooled mist allows a new approach to condensation and coagulation processes in aqueous aerosols. The principal features of the device are: a metallic, insulated 40 l container, with a heater for the water and a wire basket for the insertion of dry ice. The water is heated to 30°C and 1.5 kg dry ice put into the wire basket. The intensity of evaporation changes with the surface of evaporation thus changing the evolution of the mist, its water content, and dispersity. After a certain time the surface of evaporation stabilizes and herewith the properties of the evoluted mist. Further investigations on the effect of isothermic and non-isothermic conditions

respectively on the droplet size will be carried out by means of the described device. There are 6 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR, Kiyev (Institute of General and Inorganic Chemistry of the AS UkrSSR, Kiyev)

SUBMITTED: January 18, 1962

DUKHIN, S.S.; ORLOV, V.N.; PERERUPKA, I.A.; ZAYTSEVA, K.A.

Flow methods for the determination of sizes and charges of coarse aerosol particles. Koll.zhur. 26 no.1:133-138 Ja-F '64. (MIRA 17:4)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR, Kiyev.

ORLOV, V.N.

Special problems of changing spring wheat into winter wheat under conditions existing in Kuybyshev Province. Agrobiologiia no.1: 137-139 Ja-F '60. (MIRA 13:5)

1. Kinel'skaya gosudarstvennaya selektsionnaya stantsiya.
(Kuybyshev Province--Wheat)

ORLOV, V.N.; BYLINSKAYA, I.G., red.; YELAGIN, A.S., tekhn. red.

[Use advanced cultivation practices in growing buckwheat] Grechikhe - vysokuiu agrotekhniku. Moskva, Izd-vo "Sovetskaia Rossiia," 1961. 15 p. (MIRA 14:8)

1. Brigadir kompleksnoy brigady kolkhoza imeni Il'icha Aurgazinskogo rayona Bashkirskoy ASSR (for Orlov)
(Buckwheat)

ORLOV, V.N.

Age and evolutionary variation of moral teeth in the genus Equus.
Nauch.dokl.vys.shkoly: biol.nauki no.4:66-69 '60. (MIRA 13:11)

1. Rekomendovana kafedroy zoologii Pozvonochnykh Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.
(HORSES--ANATOMY)
(TEETH)

USSR / Farm Animals, Hogs

Q-4

Abs Jour: Ref Zhur-Biol., No 2, 1958, 7190.

Author : V. N. Orlov
Inst : Not given
Title : Breeding of Highly Productive Hogs on a Kolkhoz Farm

Orig Pub: S. kh. Povolzh'ya, 1957, No 6, 71-73

Abstract: No abstract.

Card 1/1

ORLOV, V.N.

Age-related variability of the skull in the wild ass (Equus hemionus Pall.) Zool. zhur. 40 no.4:592-601 Ap '61. (MIRA 14:3)

1. Department of Vertebrate Zoology, State University of Moscow.
(Asses and mules) (Skull) (Age)

ORLOV, V.N.; ZAYCHIKOV, [illegible].V., nauchnyy sotrudnik; SERGEYEVA, O.Ya., nauchnyy sotrudnik

Preceding crops and tillage for winter crops in Kursk Province. Zemledelie 25 no.8:42-46 Ag '63. (MIRA 16:10)

1. Direktor Kurskoy gosudarstvennoy sel'skokhozyaystvennoy opytnoy stantsii (for Orlov).
(Kursk Province--Rotation of crops)
(Kursk Province--Tillage)

ACCESSION NR: AR4046012 S/0058/64/000/007/E076/E076

SOURCE: Ref. zh. Fizika, Abs. 7E580

AUTHORS: Aleksandrov, L. N.; Orlov, V. N.

TITLE: On the connection between the recrystallization kinetics and the stress relaxation in metals

CITED SOURCE: Sb. Relaksats. yavleniya v met. i splavakh. M., Metallurgizdat, 1963, 294-299

TOPIC TAGS: recrystallization, stress relaxation, internal friction, activation energy, tungsten, molybdenum

TRANSLATION: The temperature and time dependences of internal friction (IF) were investigated in non-recrystallized and in recrystallized wires of tungsten and molybdenum. Two peaks were observed on the temperature curve of the IF. Recrystallization greatly reduces

Card 1/3

ACCESSION NR: AR4046012

the first peak and lowers the second; after selective recrystallization, the second peak in tungsten disappears almost completely. The temperatures and activation energies of the peaks amount to 1400C and 1115 kcal/g-atom and 1950C, 150 kcal/g-atom respectively for tungsten, and 1000C, 87 kcal/g-atom and 1450C, 118 kcal/g-atom respectively for molybdenum. The activation energies of the relaxation process corresponding to the first peak are close to the activation energy of the crystallization, and this peak is apparently due to relaxation over the grain boundaries. The relaxation process causing the second peak has an activation energy close to the activation energy of self diffusion or diffusion of impurities in the investigated metals. The contribution of vacancies (measurements at 100C after cooling from 2400C) and of dislocations (comparison with the dislocation density determined by the x-ray structural method) to IF are analyzed. Relaxation curves are plotted in the temperature interval 500--2700C. Opinions are advanced concerning the nature of the relaxation processes. L. Mirkin.

Card 2/3

ACCESSION NR: AR4046012

SUB CODE: MM, SS ENCL: 00

Card 3/3

L 6891-65 EWT(m)/EPF(n)-2/EWP(q)/EWP(b) Pu-4 SSD/ASD(m)-3/ASD(f)/AFWL/
AFETR/RAEM(t) JG/JD S/0137/64/000/006/I050/I050
ACCESSION NR: AR4044221 57

SOURCE: Ref. zh. Metallurgiya, Abs. 6I293

AUTHOR: Aleksandrov, L. N.; Orlov, V. N.

TITLE: The connection between the kinetics of recrystallization and the relaxation of stresses in metals 18

CITED SOURCE: Sb. Relaksats. yavleniya v met. i splavakh. M., Metallurgizdat, 1963, 294-299

TOPIC TAGS: metal, recrystallization, recrystallization kinetics, stress relaxation, stress, internal friction 18

TRANSLATION: Investigates the temperature dependence of internal friction in unrecrystallized and recrystallized W and Mo wires. Measurements of the temperature

the 3rd peak completely disappears. In Mo after annealing

Card 1/3

L 6891-65
ACCESSION NR: AR4044221

The temperatures and activation energies of the peaks for W are, respectively, 1400°, 115 kcal/g-atom and 1950°, 153 kcal/g-atom; for Mo they are 1000°, 87 kcal/g-atom and 1450°, 118 kcal/g-atom. The activation energy of the relaxation process corresponding to the 1st peak is close to the activation energy of recrystallization and, apparently, this peak is caused by relaxation along the grain boundaries. process causing the 2nd peak has an activation energy close to that in the investigated metals.

In the first stages

Card 2/3

L 6891-65
ACCESSION NR: AR4044221

migration of vacancies and shift of dislocations. With rising temperature the role of the process of a shift of dislocations increases, which increases the total activation energy of the process of relaxation. At temperatures of 500-900°, relaxation of stresses in the beginning is connected with a shift of two or more accumulations of vacancies, and then the shift of single vacancies and certain dislocations begins to play a part. In the interval 1100-1500° during relaxation

in the contribution of shifting dislocations.

SUB CODE: MM, AS ENCL: 00

Card 3/3

ORLOV, V.N.; ORLOV, O. Y.; PANOV, Ye.N.; CHAYKOVSKIY, Yu.V.; YABLOKOV, A.V.; GONCHARENKO, Ye.N.; GORBUNOVA, V.G.; KONOPLYANNIKOV, A.K.; KUDRYASHOV, Yu.B.; REUK, V.D.; SHUBNIKOVA, Ye.A.; TARUSOV, B.N.; PETRUSEVICH, Yu.M.; IVANOV, I.I.; GAPONENKO, V.I.; ANTONOV, V.A.; VOROB'YEV, L.N.; BURLAKOVA, Ye.V.; BURDIN, K.S.; PARKHOMENKO, I.M.; AGAVERDIYEV, A. Sh.; DOSKACH, Ya. Ye.; TARUSOV, B.N.

Brief news. Biul. MOIP. Otd. biol. 70 no.6:158-171 N-D '65.
(MIRA 19:1)

L 47062-65 EWT(1)/EEC-4/EED-2/EWA(h) Pn-4/Pac-4/Pi-4/Pl-4/Pab
ACCESSION NR: AP5010092 UR/0109/65/010/004/0618/0625 43
B

AUTHOR: Nikol'skiy, V. V.; Sukhov, V. G.; Korniyenko, D. I.; Orlov, V. P.

TITLE: Designing a rectangular waveguide containing a longitudinally-magnetized ferrite by the eigen-function method 15

21

SOURCE: Radiotekhnika i elektronika, v. 10, no. 4, 1965, 618-625

TOPIC TAGS: rectangular waveguide, waveguide, ferrite waveguide

ABSTRACT: This is a continuation of a previous authors' work (Rad. i elektronika, 1964, v. 9, no. 8, 1345); this article presents a physical interpretation of the theoretical results and some calculations of a waveguide containing one centrally located ferrite bar. The propagation constants are real for quasi-H_{10} and quasi-H_{01} modes; the propagation constants for these and other

circularly polarized with opposite directions of rotation; the ellipticity depends

Card 1/2

L 47062-65
ACCESSION NR: AP5010092

on the ferrite size and parameters and is not constant over the cross-section area. Similarity of physical processes in the rectangular-waveguide ferrite phase-shifter and the circular-waveguide Faraday polarization-plane rotator is indicated. Construction of the ferrite phase-shifter, its reciprocity characteristic, losses, and Q-factor are described. Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 09Mar64 ENCL: 00 SUB CODE: EC

NO REF SOV: 001 OTHER: 001

Card 2/2

ORLOV, Vladimir Osipovich; SALTYKOV, N.I., doktor tekhn. nauk, prof. otv. red.; BELOKRYLOV, I.D., red. izd-va; BRODSKAYA, A.G., red. izd-va; KYLINA, Yu.V., tekhn. red.

[Frost heaving of finely dispersed soils]Kriogennoe puchenie tonkodispersnykh gruntov. Moskva, Izd-vo Akad. nauk SSSR, 1962. 186 p. (MIRA 15:11)
(Frozen ground) (Foundations)

ORLOV, V.P.

Length of T and I variation periods according to paleomagnetic studies. Geomag. i aer. 5 no.3:590-591 My-Je '65.
(MIRA 18:5)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.

KUZNETSOV, Yevgeniy Semenovich. Prinimali uchastiye: RYTCHENKO, V.I.; ORLOV, V.P.; RUBETS, D.A.; ZAYATS, T.P.; KUROPTEV, V.T.; LEYDERMAN, S.R.; NOSOV, L.I.; SOKOLOV, O.V.; TULUKOV, G.A.; SHIBIN, P.V. LESNYAKOV, F.I., red.; DONSKAYA, G.D., tekhn.red.

[Efficient systems of maintenance and methods for their correction] Ratsional'nye rezhimy tekhnicheskogo obsluzhivaniia i metodika ikh korrektirovaniia. Moskva, Avtotransizdat. Pt.2. [Second stage of motor vehicle maintenance] Vtoroe tekhnicheskoe obsluzhivanie. 1960. 98 p. (MIRA 14:3)
(Motor vehicles--Maintenance and repair)

FAYNSHTEYN, Veniamin Fedorovich; BOGDANOV, Yuriy Vasil'yevich; ORLOV, Vyacheslav Prokhorovich; BUROV, Anatoliy Il'ich; KORABLEV, A.A., otv. red.; FROLOVA, Ye.I., red. izd-va; LOMILINA, L.N., tekhn. red.; MINSKER, L.I., tekhn. red.

[Sparkproof gauges and spark- and blastproof strain and their use in the coal industry] Iskrobezopasnye i iskrovzryvobezopasnye tenzometricheskie pribory i ikh primenenie v ugol'noi promyshlennosti. Moskva, Gosgortekhizdat, 1961. 86 p. (MIRA 15:8)

(Coal mines and mining--Electric equipment)
(Strain gauges)

ORLOV, V. F., Li, I. ., [illegible], F. I.,[1] [illegible]VA, L. ., and [illegible], . .,
(I Sci. Res. Inst, of Veterinary Medicine of the Acad. Agric. Sci. [illegible] . [illegible] State Sci. Control Inst. of Vet. Preparations, Min. of Agri., [illegible].

"Chemotherapeutic Properties of the New Azidin Preparation."
Veterinariya vol. 37, no. 11, November 1961., p. 73

SHMULEVICH, A.I.; POVAROVA, L.N.; TURSUNOV, P.T.; LI, P.N.; ORLOV, V.P.

Chemotherapeutic characteristics of the new preparation azidine.
Veterinariia 38 no.11&23-25 N '61 (MIRA 18:1)

1. Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov Ministerstva sel'skogo khozyaystva SSSR (for Shmulevich, Povarova) 2. Nauchno-issledovatel'skiy institut veterinarii Akademii sel'skokhozyaystvennykh nauk Uzbekskoy SSR (for Tursunov, Li, Orlov).

LI, P.N. (Candidate of Veterinary Sciences), NETSETSKIY, A.M., YENILEYEVA, N.Kh., and TURSUNOV, P.T. (Scientific Workers), ORLOV, V.P. (Laboratory Technician, Institute of Veterinary Medicine, Uzbek Academy of Agricultural Sciences).

"Use of Phenoformforte [Fenoform-forte] against tick-carriers of cattle Haemosporidia..."
Veterinariya, vol. 39, no. 3, March 1962 pp. 80

ORLOV, Vasiliy Pavlovich

[Sewage irrigation of agricultural crops; based on the example of collective and state farms in Moscow Province] Oroshenie sel'skokhoziaistvennykh kul'tur stochnymi vodami; na primere kolkhozov i sovkhozov Moskovskoi oblasti. Moskva, Gos. izd-vo selkhoz lit-ry, 1955. 101 p. (MIRA 9:10)

(Moscow Province--Sewage irrigation)

ORLOV, V.P., kandidat sel'skokhozyaystvennykh nauk

Errors in the sanitary protection of natural waters. Gig. i san. 22 no.3:60-68 Mr '57. (MLRA 10:6)
(WATER SUPPLY
sanitary protection of reservoirs in Russia)
(SANITATION
sanitary protection of water reservoirs in Russia)

ORLOV, Vasiliy Pavlovich

[Irrigation of vegetable crops by sewage; based on the example of the collective and state farms of Moscow Province]Oroshenie ovoshchnykh kul'tur stochnymi vodami; na primere kolkhozov i sovkhozov Moskovskoi oblasti. 2. izd. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1959. 127 p.
(MIRA 15:8)

(Moscow Province--Vegetable gardening)
(Sewage as fertilizer)

ORLOV, V.P., kand.sel'skokhoz.nauk. Prinimali uchastiye: AVROV, N.N.; BASENKO, P.V.; VARLAMOV, D.A.; VASIL'YEV, I.I.; VLASOV, V.N.; VYLEGZHANINA, V.A.; ZHIVET'YEV, V.G.; ZAVADSKIY, I.S.; ZALESSKIY, Ye.Ya.; ZAKORYUKIN, D.S.; ISHCHENKO, I.N.; KACHIBAYA, I.D.; KISE-LEV, Ye.S.; KOZHEVNIKOV, I.Z.; LISITSYN, V.I.; MESHCHERYAKOV, V.P.; NYURIN-VERTSBERG, R.L.; PERKFELITSA, V.M.; RYABKOV, A.D.; SKURIKHIN, I.P.; SOLOV'YEV, N.A.; YAS'KO, N.G.. GREBTSOV, P.P., red.; ZUBRILINA, Z.P., tekhn.red.

[Our farms in 1965] Nashi khoziaistva v 1965 godu. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1959. 230 p. (MIRA 13:2)
(Agriculture)

MITRYUSHKIN, Konstantin Petrovich, kand.sel'skokhoz.nauk; OKLOV, Vasiliy Pavlovich, kand.sel'skokhoz.nauk; PYLAYEVA, A.P., red.; [illegible] A.I., tekhn.red.

[In the struggle to increase agricultural production] V bor'be za pod"em sel'skogo khozyaistva. Moskva, Gos.izd-vo sel'khoz. lit-ry, 1959. 232 p. (MIRA 12:12)
(Agriculture)

ORLOV, Vasiliy Pavlovich; GRIGOR'YEVA, A.I., red.; GUREVICH, M.M., tekhn. red.

[Irrigated farm fields]Zemledel'cheskie polia orosheniia. 3., perer. i dop. izd. Moskva, Sel'khozizdat, 1961. 141 p. (MIRA 15:10)

(Sewage irrigation)

ORLOV, V.P.

Effectiveness of organic and phosphate fertilizer mixtures on leached Chernozems of Orlov Province. Zemledelie 23 no.6:42-46 Je '61. (MIRA 14:6)

1. Orlovskaya oblastnaya gosudarstvennaya sel'skokhozyaystvennaya opytnaya stantsiya.
(Orlov Province—Field crops—Fertilizers and manures)

ORLOV, V.P.

Fertilizing field crop on leached Chernozem soils.
Zemledelie 24 no.10:51-55 O '62. (MIRA 15:11)

1. Orlovskaya oblastnaya gosudarstvennaya sel'skokhozyaystennaya opytnaya stantsiya.
(Orel Province—Field crops—Fertilizers and manures)

KALININ, Yu.D., redaktor; MALININA, N.Ye., redaktor; ORLOV, V.P.; PENKEVICH, M.S.; PUSHKOV, N.V.; KONONOVA, L.B., tekhnicheskiy redaktor.

[Magnetic field of the U.S.S.R.; compound systematic catalog of magnetic determinations of the General Magnetic Survey of the U.S.S.R.; 1931-1942] Magnitnoe pole SSSR. Svodnyi sistematicheskii katalog magnitnykh opredelenii general'noi magnitnoi s"emki Soiuza SSR. 1931-1942 gg. Leningrad, Gidrometeoizdat. Vol.2, Pt.1. 1947. 328 p. [Photostat] (MLRA 8:2)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby.
(Magnetism, Terrestrial)

ORL[illegible], V. I.

"Pr[illegible]lem of the procedure of [illegible]ning In[illegible]ination with th[illegible] of [illegible] of [illegible] Steel by [illegible]n's [illegible]", [illegible], N[illegible], [illegible] ([illegible])

SO: U-303[illegible], 11 Ma[illegible]

SOV/49-58-10-9/15

AUTHOR: Orlov, V. P.

TITLE: Anomalies in the Secular Variation of the Magnetic Field in Central Asia (Magnitnyye anomalii vekovogo khoda v Srednev Azii)

PERIODICAL: Izvestiya Akademii Nauk SSSR, seriya geofizicheskaya, 1958, Nr 10, pp 1245-1247 (USSR)

ABSTRACT: The secular variation of the magnetic field is not the same at different places on the earth's surface and is a result of a superposition of a number of physical processes. In order to explain the physical nature of the secular variation one must be able to separate it into the respective components and explain each of these components separately. The main components of the secular variation may be the following: 1) periodic changes of planetary nature, 2) changes associated with physical processes which take place within the interior of the earth at a depth of the order of half its radius, 3) changes associated with physical processes in the earth's crust which are known as anomalies in the secular variation, 4) changes associated with physical processes in the upper layers of the atmosphere which are due to solar emissions. The present paper gives a very brief summary of an expedition organized by the Scientific Research Institute

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Anomalies in the Secular Variation of the Magnetic Field in Central Asia

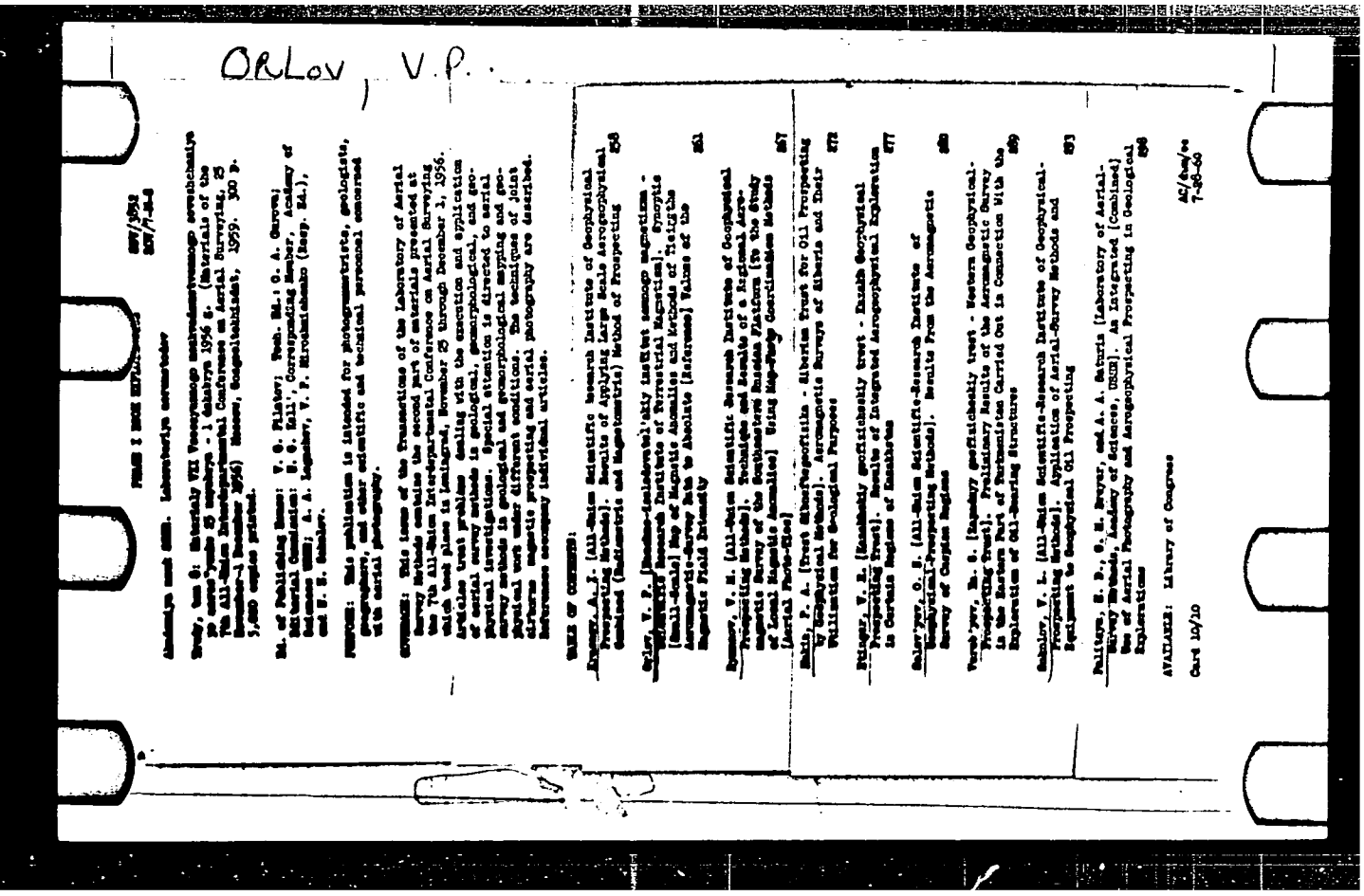
of Terrestial Magnetism, Ionosphere and Propagation of Radio Waves. The itinerary of the expedition is shown in Fig.1. It consisted of two rings: Stalinabad-Khorog-Murgab-Osh-Leninabad-Stalinabad and Stalinabad-Termez-Karshi-Bukhara-Samarkand-Stalinabad. Fig.2 shows the results obtained. Definite deviations have been observed (from the average) at a number of points and these cannot be explained by experimental errors. The deviations exceed the probable error by a factor of four. It is suggested that the probable reasons for these deviations are changes in the pressure experienced by crystalline rocks which is a result of tectonic processes

Anomalies in the Secular Variation of the Magnetic Field in Central Asia

which take place in the neighbourhood of deep fractures. I. Ye. Gubin is thanked for supplying geological data. There are 2 figures, no tables or references.

ASSOCIATION: Nauchno-issledovatel'skiy institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln (Scientific Research Institute of Terrestial Magnetism, Ionosphere and Propagation of Radio Waves)

SUBMITTED: August 15, 1957.



ORLov, V.P.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

S/049/59/000/12/020/027
E131/E391

AUTHOR: Orlov, V.P.

TITLE: On Errors in the Strength of the Geomagnetic Field T in the World Chart for the Southern Indian Ocean

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 12, pp 1870 - 1872 (USSR)

ABSTRACT: The results of two Japanese expeditions to the Antarctic described in Refs 1 and 2, are given. The data are illustrated in Figures 1 and 2, which give the corrected distribution of the geomagnetic field T in the Southern Indian Ocean.
There are 2 figures, 1 table and 2 English references.

ASSOCIATION: Akademiya nauk SSSR Institut zemnogo magnetizma ionosfery i rasprostraneniya radiovoln (Ac.Sc.USSR, Institute of the Earth's Magnetism, Ionosphere and Propagation of Radiowaves.

SUBMITTED: June 11, 1959

Card1/1

ORLOV, V.P.

Position of Z and T maximums in regions of magnetic anomalies.
Trudy NIZMIR no.16:67-71 '60. (MIRA 14:3)
(Tatar A. S. S.R.—Magnetic anomalies)

ZHILYAYEVA, V.; ORLOV, V.

Revived rocks. Tekh. mol. 28 no. 12:5-6, 31 '60. (MIRA 13:12)

(Magnetism, Terrestrial)

B/169/61/000/010/052/054
D228/D304

AUTHOR: Orlov, V. P.

TITLE: Secular variation of the geomagnetic field and a method of using it when compiling small-scale magnetic maps

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 10, 1961, 36, abstract 10G211 (Geomagnetizm i aeronomiya, 1, no. 2, 1961, 254-261)

TEXT: Secular changes of the geomagnetic field are the overall result of a number of causes. They consist of: (1) periodic changes having a planetary character; (2) changes induced by physical processes within the earth at a depth of about half its radius; (3) changes caused by crustal processes (tectonic, geochemical, geothermal, etc.); (4) changes caused by variations of the solar activity. The mean-annual, sliding, 11-year values of the magnetic elements were freed from part of the secular variation due to the solar activity. Their variation proceeds so regularly and

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S/169/61/000/010/052/053
D228/D304

Secular variation of...

smoothly that it is possible to forecast them for several years ahead with satisfactory precision. The part of the secular variation caused by the solar activity has in its turn a complex character: it consists of three superimposed waves with periods of a full, half, and quarter solar-cycle. [Abstracter's note: Complete translation.]

Card 2/2

ADAM, N.V.; ORLOV, V.P.

Annual variations of the magnetic field in the U.S.S.R. during the period 1948-1959. Geomag. i aer. 1 no.4:572-582 Jl-Ag '61. (MIRA 14:12)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.

(Magnetism, Terrestrial)

ADAM, N.V.; ORLOV, V.P.

Annual variations H,D, and Z and the determination of mean annual values of magnetic elements from observations during a month's period in high latitudes. Geomag. i aer. 1 no.4: 583-587 Jl-Ag '61. (MIRA 14:12)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.
(Magnetism, Terrestrial)

ORLOV, V.P.

Ground support of aeromagnetic surveys. Geofiz. razved. no.3:72-81 '61.

Unusually large changes in the size of secular variations of the geomagnetic pole. Ibid.:81-85 (MIRA 17:2)

ÖRLOV, V.P.

Concerning I.M.Pudovkin's note "A few words on the criticism of V.I. Pochtarev's work." Izv.AN SSSR.Ser.geofiz. no.6:924-925 Je '61. (MIRA 14:5)

(Magnetism, Terrestrial) (Pudovkin, I.M.)

S/035/62/000/007/045/083
A001/A101

31800

AUTHORS: Adam, N. V., Orlov, V. P.

TITLE: On the complicated form of the part of secular variation caused by solar activity

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 7, 1962, 67, abstract 7A463 ("Tr. In-ta zemn. magn., ionosfery i rasprostr. radiovoln. AN SSSR", 1961, no. 18 (28), 3 - 13)

TEXT: Secular variations of geomagnetic field consist of two parts: the depth one, δF_e, due to physical processes occurring within the Earth, and the external one, δF_a, due to changes in the level of magnetic activity. Distribution of δF_a reveals a 11-year cyclicity. The authors hold that variations of other more periods contribute to changes of δF_a. To test this conjecture, horizontal and vertical components, δH_a and δZ_a, of δF_a were investigated using the data of 13 magnetic observatories during the time from 1920 - 1924 to the end of fifties. Deviations of values of these quantities observed at individual observatories from the averaged values reveal a geographical distribution; the pattern for δH_a is simpler and more regular than for δZ_a. The correlation with varia-

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S/035/62/000/007/045/083
A001/A101

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tions of Wolf numbers is by far simpler and more pronounced with δH_a than with δZ_a. This implies that the δZ_a-curve is not due only to 11-year period. Waves with periods of ~ 2 and ~ 5 years can be detected in this component of δF_a. The presence of a 5-year wave is observed, although with a lesser amplitude than in δZ_a, in δH_a, too. A more detailed analysis brought the authors to the conclusion that actually these are components corresponding to 1, 1/2 and 1/4 of the solar cycle, rather than 2-, 5- and 11-year waves. The authors hold that the δZ_a component should be excluded in works on magnetic cartography.

B. Rubashev

[Abstracter's note: Complete translation]

Card 2/2

31657
S/570/61/000/018/001/004
B116/B108

3.9110

AUTHORS: Adam, N V., Orlov, V. P.

TITLE: World charts of isopores for the period 1954-1959

SOURCE: Akademiya nauk SSSR. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln. Trudy, no. 18(28), 1961, 14-26

TEXT: The charts of the secular variations of the D, H and Z elements of the Earths' magnetic field are given in this study in azimuthal projection for the Northern and Southern Hemispheres, as well as in Mercator's projection for the zone 70° northern latitude to 50° southern latitude. The difficulties in drawing them up are pointed out In the USSR, isopore charts were compiled only for the area of the USSR. For other areas, the charts by E. H. Vestine (Ref. 1, see below) were used which were corrected for the time after 1947. δF-values could be obtained only from 90 of the 150 existing observatories. Longer continuous data of the annual averages for the years from 1954 to 1959 were obtained from only a few observatories. The main difficulty is that 50 % of all the observatories are situated in Eurasia, the network in America is fairly

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World charts of isopores for the...

regular, while the possibilities in the remaining continents are very small and almost no δF-data are available of the oceans. The activity of the Soviet schooner "Zarya" will improve the situation on the oceans The δF-values were calculated in the observatories either from the annual averages, if available for 1954-1959, or extrapolated until 1957 Auxiliary charts of the δY- and δT-isopores were compiled in order to reduce subjective interpretation The values were not recorded north of 80° latitude and of the magnetic pole, since the δD-values strongly increase where H is very small, and reach ± 180° on the magnetic pole Since the magnetic and geographic poles are no singular points for δZ, nor the geographic pole for δH, the δH and δZ course was interpolated For the high latitudes of the Southern Hemisphere, only the δF data from Mirnyy, Vostok and Siova (the latter reported by Doctor T Nagata in a letter) could be used, which point to an unusually complex δF-distribution in this sector of the Antarctic. The isopores were, therefore, recorded only up to 60° latitude, and more to the south from there on only the δF-values from the three stations mentioned. δZ- and δD diagrams of some observatories in the USSR are given as examples The following main changes are pointed out: (1) The Caspian center of secular variation is

World charts of isopores for the ..

less intensive and has shifted north. This led to the reduction of the δZ- and δT-values around Tbilisi (<50γ), to the reduction of the absolute values of the focus of the negative δH in the Diksen region, and to the decrease of the δH-values to almost zero in the European part of the USSR and in Western Siberia The zero-isopore north of the Kaspiyskoye Sea has shifted west, and the absolute positive δD-values in the European part of the USSR and in Western Siberia became much smaller (2) In Japan, NE China, and SE Siberia, a focus of the negative δZ-values developed which is connected with the appearance of the focus of positive δH-changes in the Yakutsk region. (3) The focus of the negative δZ-value is at present in the area of the Antilles, and that of the negative δH-values south of the δZ-focus. (4) The eastern part of this focus is connected with the δZ-focus, the center of which is apparently south of the Siova station. In the Antarctic a focus of the positive δH-values is assumed to exist, which is related to the δZ-focus and which lies farther south. There are 11 figures and 4 references: 2 Soviet and 2 non-Soviet The two references to English-language publications read as follows:
Ref. 1: E. H. Vestine, L. Lange, L. Laporte, C. Cooper, W C Hendrix Description of the Earth's Main Magnetic Field and its Secular Change

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S/570/61/000/018/001/004
B116/B108

World charts of isopores for the..

1905-1945. Washington, 1947. Ref. 2: T Nagata. Report of Special Committee of Secular Variation and Paleomagnetism. Toronto, Assembly, 1957.

Card 4/4

S/570/61/000/018/004/004
B116/B108

3.9110

AUTHOR: Orlov, V. P.

TITLE: Secular variation of the geomagnetic field and its abnormally great variations

SOURCE: Akademiya nauk SSSR. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln. Trudy, no. 18(28), 1961, 77 - 86

TEXT: This paper gives a survey of the complex character of secular variation of the geomagnetic field and the reasons therefore. The author assumes that the secular variation of the geomagnetic field consists of the following components: (1) planetary periodic variations; the author assumes that these variations become effective in the so-called western drift of the geomagnetic field. (2) variations caused by physical processes in the "centers" of secular variation in the earth's interior. These variations furnish the main component of secular variation for short periods of 5 - 10 - 20 years. The focus of maximum variation of Z almost coincides with the center. The focus pairs of the

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Secular variation of the ...

δF_a values measured at the one observatory differ, however, essentially from one another for different cycles. The δF_a variations are, on the whole, very complex; the author will study them in a special paper. Abrupt variations for δ Z values were observed at the Irkutsk, Sverdlovsk, and Tashkent observatories, and for δD values at the observatory on the isle of Dikson. On the basis of data from observatories and some additional points, the author compiled schematic maps for the differences in the annual averages of secular variation from 1954 - 1959 and from 1949 - 1954. These maps show that the variation of annual averages of δF_a is considerable for different 5-year periods, a fact which has not been observed in the USSR since 1875, and apparently also since 1825. The author assumes that the variations contain besides δF_a, also an important part of δF_c. Finally, it is stated that abnormally great irregularities of the secular variations take place all over Eurasia, and possibly on the whole globe. There are 11 figures and 1 Soviet reference.

Card 3/3

ORLOV, V.P.

Secular variation of geomagnetic elements in the Arctic for the period 1954-1959. Geomagn.i aer. 2 no.1:167-171 Ja-F '62.
(MIRA 15:11)

(Arctic regions--Magnetism, Terrestrial--Secular variation)

ORLOV, V.P.

H, Z, and T maps for the territory of the U.S.S.R.
Geomag. i aer. 2 no.3:579 My-Je '62. (MIRA 15:11)
(Magnetism, Terrestrial—Maps)

ORLOV, V.P.

Sharp changes in the secular variation of the geomagnetic field to the east of Lake Baikal. Geomag. i aer. 2 no.4:763-766 Jl-Ag '62. (MIRA 15:10)

1. Institut zemnogo magnetizma ionosfery i rasprostraneniya radiovoln AN SSSR.
(Baikal Lake region—Magnetism, Terrestrial—Secular variation)

ADAM, N.V.; BEN'KOVA, N.P.; ORLOV, V.P.; OSIPOV, N.K.; TYURMINA, L.O.

Spherical analysis of the constant magnetic field for the epochs 1955 and 1958. Geomag. i aer. 2 no.5:949-962 S-O '62.
(MIRA 15:10)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln Sibirskogo otdeleniya AN SSSR i Institut matematiki s vychislitel'nym tsentrom Sibirskogo otdeleniya AN SSSR.
(Magnetism, Terrestrial)

ORLOV, V.P.

Secular variation of elements in the magnetic field in Antarctica.
Geomag. i aer. 2 no.5:972-975 S-O '62. (MIRA 15:10)

1. Institut zemnogo magentizma, ionosfery i rasprostraneniya radiovoln AN SSSR.
(Antarctic regions--Magnetism, Terrestrial--Secular variations)

ORLOV, V. P.

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ADAM, N.V., BENKOVA, N.P., ORLOV, V.P., OSIPOV, N.K., TYURMINA, L.O.

Calculated magnetic field of the Earth, (USSR)

report submitted for the 4th International Space Science Symposium (COSPAR) Warsaw, 2-12 June 63

ADAM, N.V.; BEN'KOVA, N.P.; ORLOV, V.P.; OSIPOV, N.K.; TYURMINA, L.O.

Spherical analysis of the constant geomagnetic field for the period 1955 through 1958. Pt. 2. Geomag. i aer. 3 no.1:121-126 Ja-F '63. (MIRA 16:4)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR i Institut matematiki s vychislitel'nym tsentrom Sibirskogo otdeleniya AN SSSR.

(Magnetism, Terrestrial)

ADAM, N.V.; BEN'KOVA, N.P.; ORLOV, V.P.; OSIPOV, N.K.; TYURMINA, L.O.

Spherical analysis of the permanent geomagnetic field and secular variation. Geomag. i aer. 3 no.2:336-353 Mr-Ap '63. (MIRA 17:2)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR i Institut matematiki s vychislitel'nym tsentrom Sibirskogo otdeleniya AN SSSR.

FAYNSHTEYN, V.F., inzh.; ORLOV, V.P., inzh.

Universal explosionproof tensometer. Sbor. KuzNIUI no.10: 222-230 '64. (MIRA 18:9)

ADAM, N.V.; BEN'KOVA, N.P.; ORLOV, V.P.; OSIPOV, N.K.; TYURMINA, L.O.

Synthesis of the geomagnetic field according to the coefficients of spherical analysis. Geomag. i aer. 4 no.1:151-160 Ja-F'64. (MIRA 17:2)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR i Institut matematiki s vychislitel'nym tsentrom Sibirskogo otdeleniya AN SSSR.

ACCESSION NR: AP4043254 S/0203/64/004/004/0748/0752

AUTHOR: Adam, N. V., Ben'kova, N. P., Orlov, V. P., Osipov, N. K., Tyurmina, L. O.

TITLE: Analytical representation of secular variation

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 4, 1964, 748-752

TOPIC TAGS: geomagnetism, geomagnetic field, geomagnetic field secular variation, secular variation

ABSTRACT: A study has been made showing that an analytical representation of the secular variation (SV) of the geomagnetic field based on six harmonics is adequate for representation of world SV with the same degree of accurary as world maps of SV compiled directly from observations at magnetic observatories; it is also shown that the analytical method can be used for compiling maps of SV. The synthesis of SV maps was accomplished using a grid with grid lines spaced 5° apart in longitude. The grid was somewhat more open to the south of 60°S and to the north of 70°N. The values δX and δY were derived using the mean coefficients δg_n^m and δh_n^m, computed from δX and δY in order to exclude the potential-free part. In accordance with the assumption of the existence of an outer part the values δZ were computed using δj_m^n and δK_m^n. The quality of the analytical maps was judged by compiling maps of the differences Δ between the initial values δX, δY

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ACCESSION NR: AP4043254

and δZ used for analysis and the values obtained as a result of the synthesis. Figures 1 and 2 of the Enclosure show the IZMIRAN (Institute of Terrestrial Magnetism, the Ionosphere and Radio Wave Propagation) maps of $\Delta \delta X$ and $\Delta \delta Y$. The Δ values are given in gammas; positive values are represented by solid and negative values by dashed isolines. The maximum discrepancies between the initial and new maps, $\pm 30\gamma$, was in the southern hemisphere; in the northern hemisphere they did not exceed $\pm 10\gamma$. The discrepancies in δX, δY and δZ on the IZMIRAN SV world maps do not have a regular pattern, except that in the southern hemisphere $\Delta \delta Y$ is generally negative. The values $\Delta \delta X$ and $\Delta \delta Y$ are of the order of $\pm 5\gamma$ and only in the south polar cap do they attain 40γ for δX and 20γ for δY. For $\Delta \delta Z$ there is an increase to $\pm 15\gamma$ in the Atlantic and a sharp increase to 60γ in the high latitudes of the southern hemisphere. The IZMIRAN maps also were compared with the values δX, δY and δZ directly at 53 magnetic observatories; the mean discrepancy for the three elements was $\pm 9\gamma$. The analytical method is thus as accurate as graphic methods, but does not involve the subjectivism involved in use of the latter. However, graphic and analytical methods could be combined; the first is best for areas for which little data is available and the second is best for characterizing regions of rapid secular variations. Orig. art. has: 3 figures and 2 tables.

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ACCESSION NR: AP4043254

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere and Radio Wave Propagation, AN SSSR); Institut matematiki s vy*chislitel'nym tsentrom, SO AN SSSR (Institute of Mathematics and the Computation Center, SO AN SSSR)

SUBMITTED: 04Feb64 ENCL: 04

SUB CODE: ES NO REF SOV: 004 OTHER: 001

Card 3/3

L 7051-65 EWT(1)/FCG/EEC(t) Po-4/Pi-4 BSD/ASD(a)-5/RAEM(c)/ESD(t) GW

ACCESSION NR: AP4043255 S/0203/64/004/004/0753/0761

AUTHOR: Adam, N. V.; Ben'kova, N. P.; Orlov, V. P.; Osipov, N. K.; Tyurmina, L. O.

TITLE: Height distribution of the geomagnetic field

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 4, 1964, 753-761

TOPIC TAGS: geomagnetism, geomagnetic field, aeromagnetic prospecting, differential vertical gradient, dipole gradient

ABSTRACT: The results of magnetic-field computations for various height levels are discussed. The computations were performed by the method of spherical harmonic analysis for heights of 0, 50, 200, 300, 400, 600, 1000, 2000, 3000, 5000, 10,000, and 15,000 km, with an accuracy to a few tens of gammas. Maps of the magnetic fields for the heights (h) studied are presented. A map of magnetic intensity T for the earth's surface (h = 0) clearly shows the longitudinal asymmetry of the field; maximum values of T are found in the belt from 100 to

Field changes with height (the vertical gradients of the field) are

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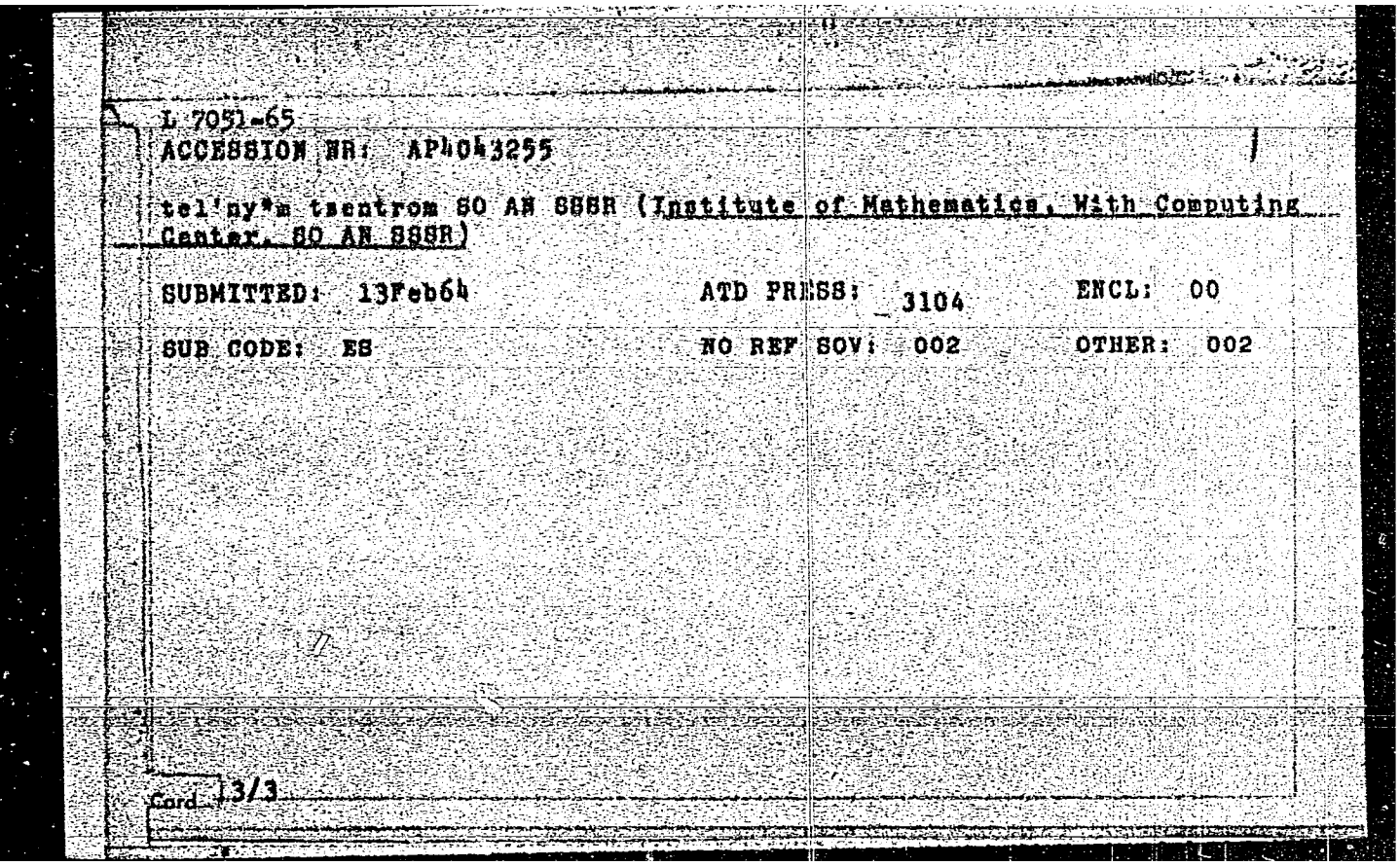
also analyzed. It is demonstrated by means of figures and formulas that 1) the value of the gradient of each element depends on the value of the element itself, 2) gradients which are the sum of six harmonics differ considerably from gradients of the dipole field, and 3) the rate of decrease with height of the nondipole part of the gradient is greater than the rate of decrease of the corresponding part of the absolute values of the field. In evaluating the gradients on the basis of the results of measurements (for instance, in the case of an aeromagnetic survey or data from artificial earth satellites), it is advisable to determine the mean gradient between heights h_1 and h_2 on the basis of the difference of field values at the corresponding heights. On the basis of the difference between the T values at the corresponding heights, it is possible to calculate the mean values with an accuracy close to that considered sufficient. In the case of dipole distribution, the north and the south should show equal maximum values, exceeding by two times the minimum values in the zone of the geomagnetic equator. Orig. art. has: 8 figures, 3 tables, and 10 formulas.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery* i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere, Propagation AN SSSR); Institut matematiki s vychisli-



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tel'ny*m tsentrom SO AN SSSR (Institute of Mathematics, With Computing Center, SO AN SSSR)

SUBMITTED: 13Feb64 ATD PRESS: 3104 ENCL: 00

SUB CODE: ES NO REF SOV: 002 OTHER: 002

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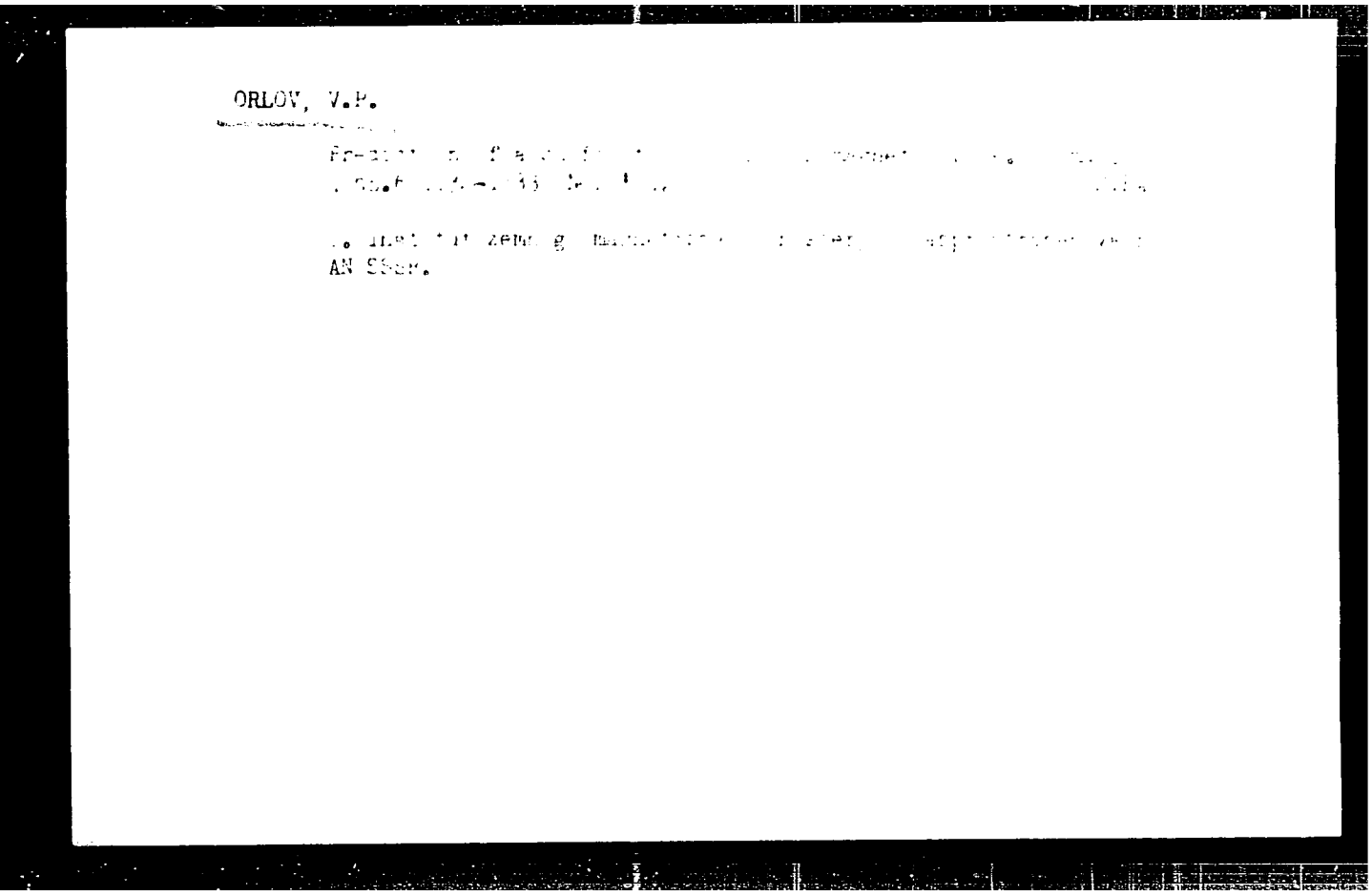

ORLOV, V.P.

TRANSLATION: The results of calculations of the geomagnetic fields at various altitudes are given in tabular form. The calculation was made by the spherical harmonic analysis method. Maps of the geomagnetic field are given for 9 altitudes (up to 15000 km). The character of the altitude variation of the field over the anomalies and over the normal field is presented graphically. Some characteristics of the vertical gradients are given. (Authors' summary).

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BURLATSKAYA, Serafima P rovna; ORLOV, V.P., doktor fiz.-matem. nauk, otv. red.

[Archaeomagnetism; a study of the earth's magnetic field in past epochs] Arkheomagnetizm; issledovanie magnitnogo polia Zemli v proshlye epokhi. Moskva, Nauka, 1965. 126p. (MIRA 18:6)

L 07491-67 EWT(1)/FCC GW/GD
ACC NR: AT6021012 (A,N) SOURCE CODE: UR/0000/65/000/000/0033/0041

AUTHOR: Adam, N. V.; Ben'kova, N. P.; Orlov, V. P.; Tyurmina, L. O. 33

ORG: none

TITLE: Calculation of the geomagnetic field strength based on the coefficients of spherical analysis

SOURCE: AN SSSR. Institut fiziki Zemli. Nastoyashcheye i proshloye magnitnogo polya Zemli (The present and past of the earth's magnetic field). Moscow, Izd-vo Nauka, 1965, 33-41

TOPIC TAGS: geomagnetic field, geomagnetic measurement, magnetic field intensity, cartography

ABSTRACT: This article is devoted to a calculation of the geomagnetic field strength based on the coefficients of spherical analysis in order to obtain information on the distribution and character of the change of the geomagnetic field at various distances from the earth's surface. The first step in this work was to determine the coefficients of a spherical harmonic series in order to calculate the geomagnetic field in circumterrestrial space. The starting data were the magnetic charts of the IZMIRAN and the British Admiralty for the 1955 epoch and the values of the magnetic elements at unevenly distributed discrete points. A subsequent synthesis of the field on the earth's surface and its comparison with the starting data showed that the best repre-

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sentation of the field is given by the coefficients calculated with respect to world charts. The elements X, Y, Z were calculated by the sum of the first six harmonics for a network of points 5° with respect to latitude and 15° with respect to longitude. The coefficients obtained from the IZMIRAN charts were used for further calculations. It was found that spherical analysis carried out for world magnetic charts gives an analytical representation of the distribution of the field on the earth's surface with the same degree of flatness and with the same errors as the world magnetic charts on which the analysis was based. Spherical analysis offers a sufficiently simple and easy method of calculating the magnetic field and its gradients for large heights. The absolute errors of calculation decrease with height in proportion to $(R/r)^3$ or even more quickly, but the relative errors remain constant or decrease slightly. Taking this into account, as well as the rapid decrease of old harmonics with height, the authors assert that at large heights the series of spherical harmonics provide a high accuracy of approximating the magnetic field sufficient for various problems of investigating a constant field and for interpreting satellite observations. An analysis of the 1955 IZMIRAN charts confirmed the systematic shift of the earth's magnetic center. The theories of the origin of the geomagnetic field scarcely touched upon the problem of the eccentricity of the field and the authors wish to call the very fact of eccentricity and the systematic shift of the magnetic center to the attention of theoreticians. The representation of smoothed world charts by series of spherical harmonics up to the sixth order is not, in the opinion of the authors, the limit of what spherical analysis can give. With a sufficiently large number of observations pertaining to one epoch, a spherical harmonic series can provide a more detailed picture of the

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field and with fewer errors. Orig. art. has: 11 formulas, 3 tables, and 4 figures.

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