"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

L 09462-67 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/GG
ACC NR: AP5024667 SOURCE CODE: UR/0070/66/011/004/0610/0613

AUTHOR: Zheludov, I. S.; Romanyuk, N. A.

ORIG: L'vov State University (L'vovskiy gosudarstvennyy universitet); Institute of Crystallography AN SSSR (Institut kristallografii AN SSSR)

TITLE: Dielectric properties of clamped Rochelle-salt crystals

SOURCE: Kristallografiya, v. 11, no. 4, 1966, 610-613

TOPIC TAGS: ferroelectric crystal, piezoelectric crystal, electric hysteresis, dielectric constant, pressure effect, Curie point, electric polarization

ABSTRACT: The authors report an investigation of the domain structure, the hysteresis loop, and the initial dielectric constant of Rochelle-salt crystals in the region of the upper Curie temperature for different degrees of compression of the samples. The tests were made on square polished plates with 45° X-cut, measuring 10 x 10 x (0.4 -- 0.7) mm. The samples were measured on a microscope stage in a thermostat equipped with a device for simultaneous or successive compression of the crystals in two mutually perpendicular directions. This apparatus was described in an earlier paper (Kristallografiya v. 4, no. 5, 710 -- 717, 1959). The

UDC: 548.0:537.226

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ACC NR: AP6024667

dielectric constant was measured with a bridge and a hysterosis loop was by means of a Sawyer-Tower circuit. The domain structure was observed visually and photographed when necessary. The results showed that the dielectric constant decreased with increasing compression, the upper Curie point increased in the case of unilateral compression and decreased in the case of bilateral compression, and the hysterosis loops gradually contracted to lines with increasing compression. The results agree with modern theoretical notions concerning the laws governing polarization of ferroelectrics and explain the radiative changes occurring in the dielectric properties of ferroelectric materials. The results also serve as a confirmation of the frequently used "internal field" model for the explanation of the polarization of the ferroelectric. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 15Jul65/ ORIG REF: 003/ OTH REF: 006

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ZHELUDEV, I.S.; FILIMONOV, A.A.; YURIN, V.A.; ROMANYUK, N.A.

Observation of the domain structure of ferroelectric crystals by means of electroluminescent substances. Kristallografiia 6 no.5:676-680 S-O '61. (MIRA 14:10)

1. Institut kristallografii AN SSSR.
(Metal crystals--Electric properties) (Luminescent substances)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

87806

S/070/60/005/006/005/009
E032/E314

9.2180 (3203,1144,1162)

AUTHORS: Romanyuk, N.A. and Zheludev, I.S.

TITLE: Polarization of Rochelle Salt by Single-Shaped Electric Pulses

PERIODICAL: Kristallografiya, 1960, Vol. 5, No. 6, pp. 904 - 911

TEXT: Abe (Ref. 1) has described an improved method for recording the polarization of Rochelle salt and has studied processes occurring in time intervals of between 10 and 12 sec. The present authors have extended the method so that it can be used to study polarization processes in Rochelle salt over time intervals of between a few tens of seconds and fractions of milliseconds. The modified method is described as follows. Consider a fully polarized specimen of an X-section of a Rochelle salt crystal placed in the extinguished position on the microscope stage. If the mutual disposition of the specimen and of the crossed Nicol prisms remains unaltered, then the intensity of

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E032/E314

Polarization of Rochelle Salt by Single-shaped Electric Pulses

light leaving this system will depend on the direction of polarization in the specimen. In the case of partial polarization reversal, the amount of light transmitted will be a function of the degree of reversal. The light beam incident on the specimen was kept constant and both the current supplying the microscope lamp and the intensity leaving the microscope eyepiece for a given polarization state were stabilized. The light beam leaving the eyepiece was intercepted by the photocathode of a photomultiplier ФЭУ-18 (FEU-18) and the resulting signal was recorded on the screen of an oscillograph (ЭНО-1 (ENO-1)). Single rr-shaped electrical pulses 0.03-3 sec long were applied to the specimen from a pulse generator incorporating polarized relay (РП-5 (RP-5)). Longer pulses were applied directly to the specimen by switching on and off a battery. X-sections of Rochelle salt were investigated

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E032/E314

Polarization of Rochelle Salt by Single-shaped Electric Pulses

(area 10 x 20 mm^2, thicknesses 0.5 - 1.0 mm). Silver electrodes were deposited on the specimens and had circular apertures at the centre. The diameter of these apertures was 4 mm and defined the region in the crystal which was investigated. The apertures in the electrodes were filled by drops of glycerin and were then covered with glass slides. The temperature of the specimen was kept constant to within $\pm$ 0.1 °C and was measured by copper-constantan thermocouples. The photocurrent was measured as a function of time by photographing the oscillograph traces. The change in the photocurrent corresponding to complete polarization of the specimen from one mono-domain structure to another was taken as equal to 100 units. The photocurrents were taken as the direct measure of the polarization. It was found that the polarization

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Polarization of Rochelle Salt by Single-shaped Electric Pulses

reversal time as a function of the pulse amplitude, and the temperature dependence of this function, are in good qualitative agreement with analogous curves obtained by Pulvari and Kuebler in Refs. 9 and 10 and by Wieder in Ref. 8, who used ordinary electrical methods. Well-defined nonlinear and linear parts of these curves are observed and the slope of the latter is a function of temperature. Fig. 2 shows the dependence of the polarization (photo-current) on the amplitude of the applied pulses (V/cm) for different pulse lengths (1 - 2 sec, 2 - 1 sec, 3 - 0.4 sec, 4 - 0.15 sec, 5 - 0.07 sec and 6 - 0.03 sec; temperature = 15 °C). Fig. 3 shows the reciprocal of the polarization reversal time $1/\tau$ as a function of the pulse amplitude (1 - 8.8 °C, 2 - 10.7 °C, 3 - 15.5 °C, 4 - 14.7 °C,

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Polarization of Rochelle Salt by Single-shaped Electric Pulses

5 - 20.4 °C and 6 - 23.4 °C). A study was also made of the spontaneous depolarization of Rochelle salt specimens. The results obtained are in good general agreement with previous results obtained by the present authors in. Refs. 5 and 6. There are 9 figures and 10 references: 4 Soviet and 6 non-Soviet.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography of the AS USSR)

SUBMITTED: May 31, 1960

Card 5/6

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

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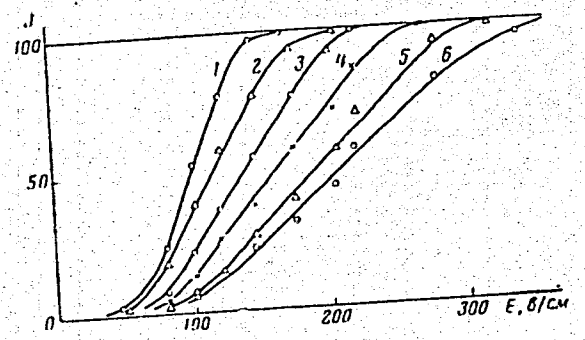
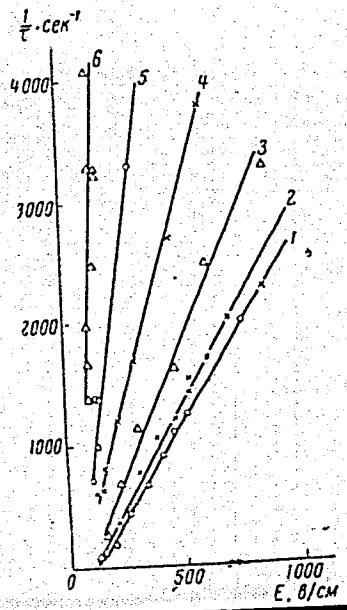
E032/E314

Polarization of Rochelle Salt by Single-shaped Electric Pulses

Fig. 2





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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, N. A.

Dissertation defended for the degree of Candidate of Physicomathematical Sciences at the Institute of Crystallography in 1962:

"Study of Electrical and Piezoelectrical Polarization of Rochelle Salt Crystals from Changes in Domain Structure."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, N.A.; ZHELUDEV, I.S.

Polarization of Rochelle salt under the influence of single П-shaped electric impulses. Kristallografiia 5 no. 6:904-911 N-D '60. (MIRA 13:12)

1. Institut kristallografii AN SSSR.
(Rochelle salt--Electric properties)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

24.2800

SOV/70-4-5-14/36

AUTHORS: Zheludev, I. S., Romanyuk, K. A.

TITLE: Study of the Piezoelectric Polarization of the Rochelle Salt Crystals According to the Domain Structure Observations

PERIODICAL: Kristallografiya, 1959, Vol 4, No 5, pp 710-717 (USSR)

ABSTRACT: Shul'vas-Sorokina, R. D. [Ref 2] Journal of Technical Physics, 1, 8, 750-760 (1931), achieved the maximum polarization of the Rochelle Salt crystals in 4-5 minutes applying 0.5 kg/cm² pressure under 45° to the polar axis. The authors cut the Rochelle Salt crystals into 10 x 10 x 0.6 to 1.4 mm plates, inclined under 45° to the X axis. Then, the plates were polished, covered with glycerin and glass, and those plates that had large c-domains or b- and c-domains were tested at 8 ± 0.1° C by the device shown in Fig. 1, which has two lever + piston sets transverse to each other and enables the compression of a plate simultaneously or alternately along the bisectors between the Y and Z

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

Study of the Piezoelectric Polarization of the Rochelle Salt Crystals According to the Domain Structure Observations

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axes. Placed in a thermostat on the stage of a microscope, the device permits one to observe the domain alterations in the course of compression, to control and measure temperature changes by a thermocouple, and periodically to take microphotos. Thus, domain areas were measured on microphotos with an accuracy of ±2 to 5%. The deformations can also be expressed in terms of stress instead of strain due to which the orthorhombic crystals turn into monoclinic. Compressing alternately in two directions, the plates were turned into monodomain, then into polydomain, and again into monodomain states. The experiments disclosed that loads below the coercive stress of about 200 g/cm^2 do not change the domain structure even applied for 2 to 5 hours. Near the coercive stress change of the area of a growing domain is described by $S(t) \sim \exp(-a/t)$, where a for a 0.94-mm-thick plate at 180 g/cm^2 stress and 10° C was 6.2 min; and t, the duration in minutes. The same equation is valid if the coercive field of about 40 v/cm is con-

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

Study of the Piezoelectric Polarization of the Rochelle Salt Crystals According to the Domain Structure Observations

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sidered instead of the coercive stress. The application of electric fields or stresses (see Fig. 5) produced nearly rectangular hysteresis loops. The relationship between the applied stress, Y_z or Y_y, and the equivalent electric field, E_x, parallel to the X axis is described by $Y_z = Y_y = e_{14}E_x$, where e_{14} is the piezoelectric constant. There are 10 figures; 1 table; and 13 references, 8 Soviet, 2 U.S., 2 Japanese, 1 German. The U.S. references are: H. H. Wieder, J. Appl. Phys., 27, 4, 413-416 (1957); F. C. Isely, Phys. Rev., 24, 5, 569-574 (1924).

ASSOCIATION: Crystallographical Institute of the Academy of Sciences of the USSR (Institut kristallografii AN SSSR).

SUBMITTED: May 9, 1959

Card 3/4

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

Study of the Piezoelectric Polarization of the Rochelle Salt Crystals According to the Domain Structure Observations

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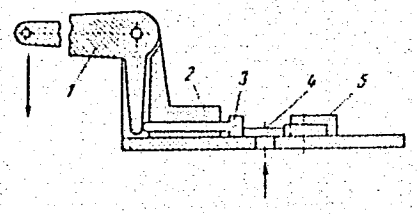

Fig. 1. (1) lever; (2) support; (3) piston; (4) specimen; (5) compensator; arrows show the load and light directions.

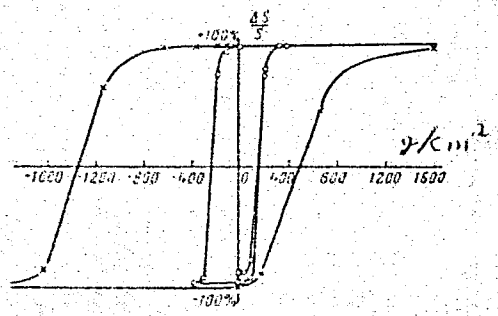

Fig. 5. Cyclic repolarization of Rochelle salt by stress (stress hysteresis loop): o, original state of specimens; x, after 10 hr under 1.1 kg/cm^2 stress.

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L 16069-65 EWT(1)/EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/[illegible] Pt-4/Pt-10/
ACCESSION NR: AP5000291 Pt-4/P1-4 S/0070/64/009/006/0870/0875
IJP(c)/AFTCA GG

AUTHOR: Romanyuk, N. A.; Pidzy*raylo, N. S.

TITLE: Changes in some optical and dielectric properties of Rochelle salt crystals affected by hard radiation

SOURCE: Kristallografiya, v. 9, no. 6, 1964, 870-875

TOPIC TAGS: Rochelle salt crystal, crystal irradiation, x ray irradiation, ultraviolet irradiation, Rochelle salt

ABSTRACT: The effects of ultraviolet and x-ray radiation on the absorption spectra, the dependence of the initial dielectric constant on the temperature, and the shape of the hysteresis loop of Rochelle salt crystals were investigated in specimens cut from a single crystal. Dielectric and optical measurements were carried out on specimens of 0.5—1 mm and 0.3—10 mm thick respectively. In the case of x-ray irradiation, the investigation proved some already known rules of variation for the initial dielectric constant, the hysteresis loop, and some other features of Rochelle salt. In the case of ultraviolet irradiation, both the initial dielectric constant and the form of the

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hysteresis loop vary qualitatively in the same manner. A comparison of the changes caused by ultraviolet and x-ray irradiation of the crystal showed that the displacement of the Curie point due to the same relative changes in ε_{max} is considerably smaller for ultraviolet radiation, not exceeding several tenths of a degree. An investigation of the variation in the specimen's properties with the time showed that the ε_{max} changes during some definite time interval after irradiation, first departing from the initial state, then approaching the initial state. An investigation of the absorption spectra showed that definite changes in the absorption spectrum due to x-ray irradiation were observed only during a longer isothermal rest of crystals after irradiation. They resulted in a slow decrease of absorption in the investigated spectral range during four months of "rest", and the optical density decreased at most by 15% of the value reached immediately after irradiation of the specimen. Ultraviolet irradiation appeared to cause no substantial changes in the absorption spectra of Rochelle salt crystals, even when the changes in ε_{max} were considerable. "The authors thank I. S. Zheludev for the suggested topics and discussing the results, and L. A. Shuvalov for some useful remarks." Orig. art. has: 3 figures and 2 formulas.

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ACCESSION NR: AP5000291

ASSOCIATION: L'vovskiy gosudarstveny*y universitet (L'vov State University); Institut kristallografii AN SSSR (Institute of Crystallography, AN SSSR)

SUBMITTED: 10Mar64 ENCL: 00 SUB CODE: SS, EC

NO REF SOV: 012 OTHER: 004 ATD PRESS: 3145

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

RUDNAYA, A.I., inzh.; GAYDUCHENKO, N.I., inzh.; ROMANYUK, N.A., inzh.

Measuring the temperature of magnesium alloys during the melting in induction furnaces. Mashinostroenie no. 2:48-50 Mr-Ap '64. (MIRA 17:5)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

TAROVERDOV, L.N., kand.veterin.nauk; TAROVERDOVA, A.A., nauchnyy sotrudnik; ROMANYUK, N.A., nauchnyy sotrudnik

Copper sulfate, an agent for the pathogenetic treatment of intestinal disorders in calves. Trudy NIVI 1:226-231 '60. (MIRA 15:10)

(Copper sulfate) (Calves—Diseases and pests)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

26645
S/070/61/006/005/003/011
E132/E560

24.7800 (1137, 1136)

AUTHORS: Zheludev, I.S., Filimonov, A.A., Yurin, V.A. and Romanyuk, N.A.

TITLE: The observation of the domain structure of ferroelectric crystals by means of electroluminescent materials

PERIODICAL: Kristallografiya, 1961, Vol.6, No.5, pp.676-680 + 1 plate

TEXT: A basically new method of showing up the domain structure of a ferroelectric has been tried out. It consists in using a paste of ZnS in a silicone oil spread on one surface of a plate of the crystal cut perpendicular to the ferroelectric axis. An electrode is applied to the opposite surface and a transparent electrode is firmly pressed down on to the luminescent paste. A glass plate coated with SnO_2 will serve as the latter. When an alternating voltage is applied across the assembly the field divides itself between the two layers inversely as the dielectric constants. A frequency below 1 kc/s was used, higher frequencies giving too much heating. A constant field can be applied to hold the domain structure fixed. The polarization of the domains then

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ROMANYUK, N.A.; ZHELUDEV, I.S.

Study of the slow processes of electric polarization of Rochelle salt by means of observations on the structure of the domains. Kristallografiia 5 no.3:403-408 My-Je '60. (MIRA 13:8)

1. Institut kristallografii AN SSSR.
(Rochelle salt--Electric properties)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

VISHNEVSKIY, V.N.; ROMANYUK, N.A.

Monochromator with an ammonium dihydrophosphate prism. Opt. i spektr. 8 no.5:736-738 My '60. (MIRA 13:9)

(Ammonium phosphate crystals) (Monochromators)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

85091

9,2180

S/070/60/005/003/015/024/XX
E132/E460

AUTHORS: Romanyuk, N.A. and Zheludev, I.S.

TITLE: A Study of the Slow Electrical Polarization Processes in Rochelle Salt by Observations of the Domain Structure

PERIODICAL: Kristallografiya, 1960, Vol.5, No.3, pp.403-408

TEXT: Plates of X-cut Rochelle salt about 10 x 20 x 1 mm were silvered, except for an observation hole in each, and were examined with a polarizing microscope normal to their largest surfaces. An electric field of some 400 v/cm could be applied parallel to the direction of observation. Measurements were made at about 8°C. It was found that the single domain state produced by the field was rather unstable when the field was removed. The stability is less the smaller the initial domains; in these cases fields an order of magnitude greater than the coercive field are needed to produce a single domain structure. The single domain state is most stable if the majority of the initial domains were in the direction chosen for polarization. The observation that the crystal sooner or later returns to its original domain configuration indicates the exceptional stability of the latter. The change of area S with time of a growing component of a twin under the action

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S/070/60/005/003/015/024/XX
E132/E460

A Study of the Slow Electrical Polarization Processes in Rochelle Salt by Observations of the Domain Structure

of a field which is near to coercive field strength is approximately described by $S = k \exp(-\alpha/t)$ where t is the time since the application of the field and α depends on the field and the history of the specimen. This law seems to be applicable over a wide range of field strengths. There is no threshold field. The smallest field observed to produce a change is 20 v/cm. A crystal of Rochelle salt has a certain characteristic of "remembering" earlier states of domain structure. With the growth of the field strength the stability of the polarized state increases and this leads to the growth of the coercivity. The observed decrease in the coercivity on repetition of the hysteresis cycle indicates that the first cycle in some measure produces conditions facilitating repolarization of the domains in succeeding cycles. There are 3 figures and 9 references: 3 Soviet, 3 Japanese and 3 English.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography AS USSR)

SUBMITTED: December 19, 1959

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, N.A., nauchnyy sotrudnik; TAROVERDOV, L.N., kand.vet.nauk; YUPATOV, L.N., vetvrach

Can poultry be given feed infested with grain weevils? Ptitsevodstvo 8 no.11:38-39 N '58. (MIRA 11:11)
(Poultry--Feeding and feeding stuffs)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

PROCESSES AND PROPERTIES INDEX

Proteases and proteolytic processes in the tissue of muscles. III. Activity of muscle proteases in avitaminoses B and C. S. V. Fomin and N. M. Ramanyuk. *Ukrain. Biokhem. Zhur.* 9, 355-66 (in German 367-8) (1936).—An investigation of the activity of muscle proteases on casein substrate at const. p_H under conditions close to those of the muscle tissue showed that the activity of tissue protease decreases in avitaminosis B and C.

E. E. Stefanowsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

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1ST AND 2ND ORDERS — 3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

CA

11I

The ascorbic acid contents of the tissues of various fish.
S. V. Fomin, N. M. Romanyuk and M. Khvojnitskaya.

Ukrain. Biokhem. Zhur. 10, 365-73 (in Russian 373-5, in English 376-8) (1937).—Salmon, sea trout, herring, plaice, cod and whitefish were investigated. The quantity of ascorbic acid (I) in the neutral tissue depends on the age of the fish. The content of I of the brain is nearly equal in all fish except in plaice where it was three times greater than in the other fish. In the muscle tissues, the lowest I content is found in herring and cod and the largest in salmon, sea trout and whitefish (2.5 times as great). In the muscle tissue of cod and herring I is the same as that of mammals and in salmon, sea trout, whitefish and plaice I is very close to that of reptiles and amphibians. The content in the liver was the lowest (26.7 mg. %), approximating that of mammals. Cod oil contains no I. The content in the renal tissue of sea trout and whitefish is second to the content in brain tissue. A very high content (120-160 mg.%) was found in cod and salmon roe. A similar relation between age and I content was found in fresh water and marine fish. Fresh-water fish contain less I. In winter the I is less than in summer in the liver, brain and renal tissues. The following decreasing order of I content in different tissues is established: brain, liver, kidney, muscles; the order is the same for reptiles. E. E. Stefunowsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

BC

Effect of strychnine, cocaine, and chloral hydrate poisoning on dehydrogenase activity of nerve tissue. M. A. CHVOJNITZKAJA and N. M. ROMANIUK (Ukrain. Biochem. J., 1939, 13, 97—104).—Dehydrogenase activity falls in the order brain, spinal cord, sciatic nerve (rabbit). The activity of these tissues was not changed in strychnine or cocaine poisoning; chloral hydrate lowered the activity of brain and spinal cord, but not that of sciatic nerve. R. T.

METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

BC

A4

Activity of brain- and muscle-cathepsin in avitaminosis-C. N. M. ROMANIUK (Ukrain. Biochem. J., 1939, 14, 341—355).—The cathepsin activity of guinea-pig muscle, liver, and kidney rises after 10—11 days on a diet deficient in vitamin-C; that of the brain does not vary. R. T.

COMMON ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR INDEX

1ST AND 2ND LETTER

3RD LETTER

3RD AND 4TH ORDERS

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, N. M.

Chemical Abstracts
May 25, 1954
Biological Chemistry

(2)

The influence of the antibiotics of garlic on the activity of proteolytic enzymes of malignant tumors of humans and experimental animals. N. M. Romanyuk (Röntgeno-Radio-Oncol. Inst., Kiev). *Ukrain. Biokhim. Zhur.* 24, 53-60(in Russian, 61)(1952).—The action of the antibiotics (I) of garlic are investigated, with cathepsin (II) from human tumors (postoperative material) and animal tumors (subcutaneous tumors of white mice). II causes an increase of the free carboxyl groups of the tumor tissue, thus the increase or decrease of the activity of II under the influence of I can be easily checked titrimetrically. II from livers of white mice and plain mice was also compared. The following results were obtained: The activity of the liver II increases in a malignant growth. The I of garlic retard the activity of liver II of animals suffering from malignant growths and retard it a little in healthy animals. The garlic I inhibit somewhat the II of malignant tumors of humans and animals. In expts. in which the tumor ext. was finely dispersed with garlic, tumor development was retarded. Werner Jacobson

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, N.M.

MV D

Oxidative processes in the animal organism with [an experimental] tumor following stimulation and retardation of the central nervous system and x-ray irradiation. N. M. Romanyuk. *Med. Zhur., Akad. Nauk Ukrain. S.S.R.* 24, No. 1, 40-5(1954); *Referat. Zhur., Khim.* 1954, No. 36154. —The study involves the dctn. of the ratio of C/N in the urine of rats which at the 3rd day after the transplanting of a tumor [cancer] of the SPB-stem have daily received in their diet different doses of Br (I), nembutal (II), caffeine (III), and phenamine (IV). Part of the animals, when the tumor reached 2.0 × 2.5 cm. size, were subjected to x-ray irradiation at the location of the tumor with a daily dose of 200 r.; total irradiation 5000 r. The control animals were those with the tumor but not receiving the drugs, or those receiving the drugs but not subject to the irradiation. The C/N ratio was detd. before the transplanting of the tumor, before the irradiation, after the first 4 irradiations, and at the end of the irradiation. The results confirmed the fact that the C/N ratio in the urine of the rats suffering from the tumor increases. Small doses (I 5, II 2, III 2, and IV 0.002 mg.) of the drugs decrease the C/N ratio, and the middle (I 7.5, II 10, III 3, and IV 0.15 mg.) and large doses (I 10, II 20, III 5 and 20, and IV 0.3 mg./day/animal, resp.) do not change or only slightly increase the ratio. X-ray irradiation in all instances increased the C/N ratio. E. Wierbicki

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, N. M.

The effect of the Gordeev solution on the activity of cathepsin and dehydrogenase of tumors. N. M. Romanyuk (Roentgeno-Radiol. and Oncol. Inst., Kiev). *Ukrain. Biokhim. Zhur.* 26, 31-6(in Russian, 36-7)(1954).—The Gordeev soln. inhibits the activity of cathepsin and dehydrogenase of tumors in man and of tumors implanted into mice. Such inhibition is proportional to the amt. of the soln. used. Cf. Orekhovich, *C.A.* 33, 726[2]; 35, 4837[2].

B. S. Levine

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, N.M.

Oxygen "tent" for small animals making possible and simultaneous study of metabolic processes. Lab.delo 4 no.2:57-59 Mr-Ap '58. (MIRA 11:4)

1. Iz biokhimicheskoy laboratorii Kiyevskogo nauchno-issledovatel'-skogo rentgeno-radiologicheskogo instituta (dir. - prof. I.T. Shevchenko)
(LABORATORIES--EQUIPMENT AND SUPPLIES)
(OXYGEN--PHYSIOLOGICAL EFFECT)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, N.M.; ISHCHENKO, M.I.

Content of sulfhydryl groups in the blood serum of animals following administration of the preparations A_1 (ethymidine) and lymphin. Uch. zap. KRROI 7:198-200'61. (MIRA 16:8)
(CYTOTOXIC DRUGS) (MERCAPTO GROUP)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, O.I.

For a high capacity of the "Khersonets'-3" combine. Mekh. sil'. hosp. 13 no.7:5-6 Jl '62. (MIRA 17:3)

1. Kombayner kolkhoza "Nove zhittya", Skadkovskogo rayona, Khersonskoy oblasti.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, P.; ZOTIKOV, V.

At the Moscow Flour Mill No.3. Muk.-elev. prom. 29 no.5:15-16 My '63. (MIRA 16:7)

1. Direktor Moskovskogo mel'nichnogo kombinata No.3 (for Romanyuk).
2. Glavnyy tekhnolog Moskovskogo mel'nichnogo Kombinata No.3 (for Zotikov).

(Moscow--Flour mills)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, R.S.

Clinical study of preparation KSR-5. Akt.vop.perel.krovi no.7:363-365 '59. (MIRA 13:1)

1. Odesskaya oblastnaya stantsiya perelivaniya krovi.
(SEA WATER--THERAPEUTIC USE) (BLOOD PLASMA SUBSTITUTES)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

24.7800

78116
SOV/70-5-1-25/30

AUTHORS: Sil'vestrova, I. M., Romanyuk, N. A.

TITLE: Effect of the Exposure of Triglycine Sulfate Crystals to Ultraviolet Radiation on Their Ferroelectric Properties. Brief Communications

PERIODICAL: Kristallografiya, 1960, Vol 5, Nr 1, pp 147-150 (USSR)

ABSTRACT: Radiation damage effect in Rochelle salt and triglycine sulfate has been known. The authors furthered the studies. Triglycine sulfate plates, 0.5 to 3.5 mm thick, parallel to the cleavage running normal to the polar axis, became dull and yellow after 20- to 30-hr exposure to ultraviolet radiation emitted from quartz-mercury lamps DRSh-100 and SVDSh-250. The hysteresis loops became distorted as shown in Fig. 1. The experiments revealed that absorption in 2-mm-thick plates decreases from nearly complete for short-wave ultraviolet rays to 57% at $\lambda = 250$ mμ and to 40% for violet rays with

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Effect of the Exposure of Triglycine Sulfate Crystals to Ultraviolet Radiation on Their Ferroelectric Properties. Brief Communications

78116
SOV/70-5-1-25/30

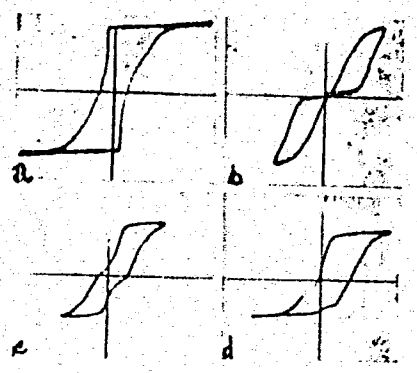

Fig. 1. Distortion of hysteresis loop in triglycine sulfate due to exposure to ultraviolet radiation: (a) unexposed specimen; (b, c, d) exposed specimens: (b) hysteresis loop on weak fields, (c, d) on a saturated fields.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

Effect of the Exposure of Triglycine Sulfate Crystals to Ultraviolet Radiation on Their Ferroelectric Properties. Brief Communications

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SOV/70-5-1-25/30

λ = 400 mμ. Short-wave rays with λ = 250 mμ proved to affect the ferroelectric properties of triglycine sulfate to a greater extent. The radiation effect was not confined to a surface layer as two different experiments verified. Ultraviolet radiation begun to alter the hysteresis loop in about 45 seconds; further radiation did not affect spontaneous polarization but increased the coercive field and moved the hysteresis loop along X axis until a new stable state was achieved after 4 months of radiation. The new state remained stable even after annealing above the Curie point for 4 to 5 hr, or after keeping the specimen in a strong electric field. The exposure to ultraviolet radiation proved to decrease the dielectric susceptibility of triglycine sulfate from 47 to 30 at 25° C. $1/\varepsilon$ vs temperature curves (Fig. 5) point to the applicability of the Curie-Weiss Law to both exposed and unexposed specimens

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

Effect of the Exposure of Triglycine Sulfate Crystals to Ultraviolet Radiation on Their Ferroelectric Properties. Brief Communications

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of triglycine sulfate. Exposure to radiation changes the slope of the ε vs temperature curve and makes the plates less elastic. For instance, s_{33} decreases from 87.16×10^{-13} to 84.95×10^{-13} $cm^2/dyne$. Piezoelectric modulus d_{23} decreases from 62.5×10^{-8} to 46.7×10^{-8} and 39.2×10^{-8} CGSE units after exposure to radiation for 12 and 24 hr respectively. The piezolelectric modulus of an exposed specimen increased, however, to $95.5 \times$ $\times 10^{-8}$ CGSE units again after application of direct electric field. I. S. Zheludev is acknowledged for advice, I. V. Gavrilova for specimens, and V. N. Varfolomeyeva for assistance. There are 5 figures; and 7 references, 5 Soviet, 1 Indian, 1 U.S. The U.S. reference is: A. G. Chynoweth, Phys. Rev., 113, 159-166 (1959).

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

Effect of the Exposure of Triglycine Sulfate Crystals to Ultraviolet Radiation on Their Ferroelectric Properties. Brief Communications

78116
SOV/70-5-1-25/30

ASSOCIATION: Crystallographical Institute of the Academy of Sciences of the USSR (Institut kristallografii AN SSSR)

SUBMITTED: October 21, 1959

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

Effect of the Exposure of Triglycine Sulfate Crystals to Ultraviolet Radiation on Their Ferroelectric Properties. Brief Communications

78116
SOV/70-5-1-25/30

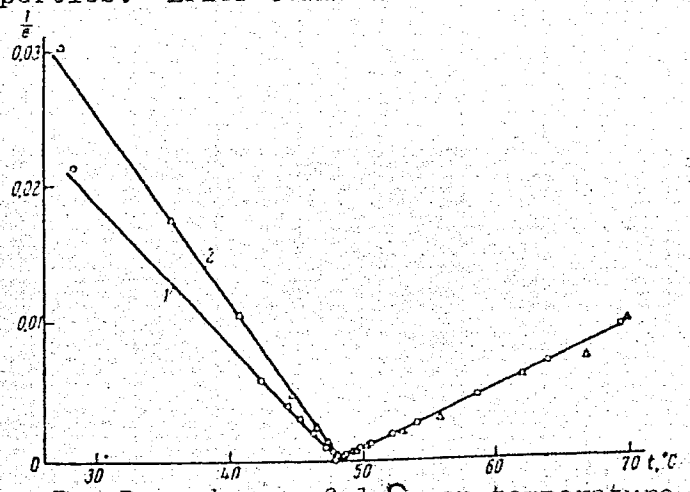

Fig. 5. Dependence of $1/\varepsilon$ on temperature for triglycine sulfate crystals: (1) unexposed specimen; (2) exposed specimen.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

LERNER, KH.S.; ROMANYUK, R.S.; LISNEVSKAYA, T.L.; FOYGEL', G.A.

Use of A.N.Filatov's serum in diseases of the nervous system. Trudy Kiev. nauch.-issl. inst. perel. krovi i neotlozh. khir. 3:27-29 '61. (MIRA 17:10)

1. Odesskaya oblastnaya stantsiya perelivaniya krovi i kafedra nervnykh bolezney Odesskogo meditsinskogo instituta.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, R.S.

Development of the service of blood transfusion in Odessa Province. Trudy Kiev. nauch.-issl. inst. perel. krovi i neotlozh. khir. 3:61-66 '61. (MIRA 17:10)

1. Odesskaya oblastnaya stantsiya perelivaniya krovi.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

BABSKIY, A.A.; ROMANYUK, R.S.; LERNER, L.S.; KOROPOTNITSKAYA, O.L.; MIL'SHTEYN, M.A.

Seromarin, a colloid-salt blood substitute. Trudy Kiev. nauch.-issl. inst. perel. krovi i neotlozh. khir. 3:103-106 '61. (MIRA 17:10)

1. Odesskaya oblastnaya stantsiya pereliyaniya krovi.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

DUBOVYY Ye.D., professor, kandidat meditsinskikh nauk; SHVARTSMAN, Ye.L.; FOYGEL', G.A., ROMANYUK, R.S.

Result of using a leukocyte suspension in controlling X-ray leukopenia. Vest.rent. i rad. 31 no.2:25-28 Mr-Ap '56. (MLRA 9:8)

1. Iz kafedry rentgenologii i radiologii (zav. prof. Ye.D.Dubovyy) Odesskogo meditsinskogo instituta imeni N.I.Pirogova (dir. prof. I.Ya.Deyneka) i Odesskoy oblastnoy stantsii perelivaniya krovi (zav. R.S.Romanyuk)

(LEUCOCYTE COUNT,
leukopenia induced with x-rays, eff. of leukocyte suspension (Rus))
(BLOOD TRANSFUSION, in various diseases,
leukocyte suspension in leukopenia caused by x-rays (Rus))
(ROENTGEN RAYS, injurious effects,
leukopenia, eff. of transfusion of leukocyte suspension (Rus))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, R. S., DUBOVYY, Ye. D., FOYGEL, G. A., and SHVARTSMAN, Ye. L.

"Experience of Using Leukocyte Suspension in Preventing Roentgenological Leukopenia," by Prof Ye. D. Dubovyy; Ye. L. Shvartsman, Candidate of Medical Sciences; G. A. Foygel' and R. S. Romanyuk, Chair of Roentgenology and Radiology (head, Prof Ye. D. Dubovyy*), Odessa Medical Institute imeni N. I. Pirogov (director, Prof I. Ya. Deyneka), and Odesskaya Oblast Station for Blood Transfusion (head, R. S. Romanyuk), Vestnik Rentgenologii i Radiologii, Vol 31, No 2, Mar/Apr 56, pp 25-28

This article discusses the special importance of administering leukocyte suspension in treating patients under X-ray therapy for malignant neoplasms. The leukocyte suspension was prepared from preserved blood by drawing off the plasma and then removing the whitish layer of leukocytes. At first leukocyte suspension was administered intravenously in 10-20 ml quantities, but later intramuscular injections also proved beneficial.

Thirty-seven patients were treated with 1-10 such transfusions. Preliminary positive results indicate the advisability of additional research for the use of leukocyte suspension in preventing roentgenological leukopenia.

Sum 1258

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

DUBOVYI, Ye.D.; SHVARTSMAN, Ye.L.; FOYGEL', G.A.; ROMANYUK, R.S.

Use of leukocyte suspensions in radiotherapy for malignant tumors. Vop. onk. 7 no.1:19-25 '61. (MIRA 14:2)
(RADIATION PROTECTION) (CANCER)
(LEUKOCYTES) (BLOOD—TRANSFUSION)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, S.L.

Treatment of pulmonary tuberculosis with pneumothorax in Bereza District, Brest Province. Zdrav. Belor. 6 no. 7:56-57 Je '60. (MIRA 13:8)

1. Glavnyy vrach protivotuberkuleznogo dispansera Berezovskogo rayona, Brestskoy oblasti.
(BEREZA DISTRICT—PNEUMOTHORAX)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, Ustin'ya

Collective Farms

In the village of Stepashka. Krest'ianka 31 No. 9, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V. zasluzhennyy master sporta; SAVIN, A., master sporta

Group delayed jumps from the stratosphere. Kryl. rod. 9 no.6:17-19 Je '58. (MIRA 11:6)

(Parachutists)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.

85-58-6-21/43

AUTHOR: Romanyuk, V., Honorary Master of Sports, and Savin, A., Master of Sports

TITLE: Delayed Group Jumping from the Stratosphere (Gruppovyye zatyazhnyye pryzhki iz stratosfery)

PERIODICAL: Kryl'ya rodiny, 1958, Nr 6, pp 17-19 (USSR)

ABSTRACT: The authors, both parachutists, discuss delayed group jumping from high altitudes, a quasi-military type of sport, which acquired particular importance after Czech parachutists surpassed the Soviet record in the spring of 1957. Intensified preparations for the next international contest included the choice of the Sokol multi-seater turbojet plane, capable of reaching an altitude of 15,000 to 16,000 meters. Several test flights were made and particular attention was given to clothing outfits and special equipment. The customary jump helmet was discarded in favor of the "germoshlem" (hermetic helmet). Clothing included thin wool or silk jersey underwear worn under a pressure suit, over which the usual flying outfit was worn. Special equipment included a battery to heat the glass of the hermetic helmet during the free fall, a kit attached to the parachutist harness containing the

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instrument for recording the jump, and an oxygen outfit. The total weight of parachute, clothing and special equipment was 50 kg. per person, of which the most important items were the close-fitting pressure suit and the hermetic helmet. Five test flights were made in all from 5,000 m. to 16,000 m. The first 5,000 m. flight was made without an oxygen outfit to adapt the organism to higher altitudes; 30 minutes were spent at 5,000 m. and the descent made at a speed of 55 to 65 m./sec. The second flight at 12,000 m. was made in pressure clothing and full equipment, except for spare parachutes. Instead of the hermetic helmet the parachutists used ordinary oxygen masks, which some claimed relieved pressure on the ear drums during the free fall by making it possible to hold the nose, and also permitted parachutists to wipe sweat off the face, etc. Altitudes were gradually increased to 16,000 m. The first jumps were made from an altitude of 1,500 m., the free fall lasting 20 seconds. In subsequent flights parachutists bailed out in full equipment at 4,000 m., with a free fall of 700 m. These flights established that the hermetic helmet required some modification. The modified equipment was then accepted since it made breathing easier and would protect the face from cold air currents in free falls. The entire group participated in the third training jump; the plane climbed to its maximum altitude, then dropped to 2,000 m., where jumps were made. Hermetic helmets were worn, and the glass in these did not fog over. Control

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of the body in the pressure suit was much more difficult; movements were impeded and the parachutist's hands almost immobilized. This appeared to be due to the asymmetry of the clothing outfit. The third jump confirmed the advantages of the hermetic helmet, leaving open the problem as to whether it should be kept on until landing or removed once the parachute was opened. Some of the parachutists maintained that the helmet prevented proper gaging of distance to the ground. It was finally decided to remove the glass immediately upon opening the parachute, since if the parachutist landed on his side, the air hose might become blocked and stop the oxygen flow. Hermetic helmets were worn on all subsequent flights. On 20 August 1957, a record delayed jump was made from an altitude of 15,383 m. by honorary Master of Sports N. Nikitin; on 21 August, the group, consisting of N. P. Zhukov, A. Vanyarkho, V. Petrenko, Ye. Andreyev, P. Ishchenko, and V. Romanyuk jumped from an altitude of 14,811 m., with a free fall of 14,045 m., setting a new All-Union and world record. Parachutes remained unopened for 4 minutes. The entire group landed within a radius of 600 to 700 m. from the designated area marked by a white cross measuring 5 x 80 m. The jump reaffirmed that maintenance of body control was much more difficult in a pressure outfit and that when parachutists succeeded in attaining the proper balance after bailing out,

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

Delayed Group Jumping from the Stratosphere 85-58-6-21/43

they were not always able to maintain it. It further established that the helmet made the parachutist underestimate the distance from the ground, because the sensation of speed in falling was felt only at 1,500 to 2,000 m. A special sound signaling device, timed for an altitude of 1,500 m., was therefore used to indicate the approach to the ground. The first group delayed night jump was made from an altitude of 14,382 m., on 27 August [1957] by N. Nikitin, G. Nikolayev, Ye. Andreyev, P. Ishchenko, and the 2 authors. Orientation was complicated in the dark; two signal lights and a red, green and white flashlight were used to signal the place of landing. The night jump established that stronger flashlights were needed with directional lights. The free fall lasted about 4 minutes and covered 13,543 m. The group landed within a radius of 300 to 400 m. from the target, in one case within 100 m. Other personalities mentioned included B. Bobrikov, N. Fedorov, A. Shishkov, V. Zhitnik. There are 2 photographs showing parachutists P. Ishchenko and N. P. Zhukov in pressure outfits.

1. Parachute jumping-USSR

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V., Geroy Sovetskogo Soyuza, zasluzhennyy master sporta

From the stratosphere. Kryl. rod. 14 no.2:12-13 F '63.
(MIRA 16:4)

(Parachuting)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

SOV/85-58-10-10/34

AUTHOR: Romanyuk, V., Honorary Master of Sports, Hero of the Soviet Union

TITLE: 2700 Parachute Jumps (2700 pryzhkov s parashyutom)

PERIODICAL: Kryl'ya rodiny, 1958, Nr 10, p 7 (USSR)

ABSTRACT: The author, a member of the Communist Party, tells how the Komsomol launched him on a military career, sending him first to an infantry school and next to the Orenburgskaya shkola letchikov i letchikov-nablyudateley (Orenburg School of Pilots and Pilot-observers). An accomplished parachutist, he has 2700 parachute jumps to his credit. There is 1 photograph of the author.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V., zasluzhennyy master sporta.

High-level jump. Kryl.rod. 7 no.2:9-11 F '56. (MLRA 9:6)
(Parachutists)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V. A.

"Determination of the Force of Gravity on the Sea by Means of the Pendulum Method."

dissertation defended for the degree of Candidate of Physical-Mathematical Sciences at the Inst. for Earth Physics,

Defense of Dissertations (Jan-Jul 1957)
Section of Physical Math. Sci.
Vest. Ak Nauk SSSR , v. 27, No. 12, 1957, pp. 108-9
AN SSSR

RL 23 57, 195

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ROMANYUK.

49-12-15/16

Dissertations Defended in the Scientific Council of the Institute of Physics of the Earth, Institute of Physics of the Atmosphere and Institute of Applied Geophysics, Ac. Sc. USSR during the First Semester of 1957. Izv. Akad. Nauk, SSSR, Ser. Geofiz, 12, 1957, p 1532-1536

V.A. Romanyuk - Determination of the Gravity Forces on the Sea by the Pendulum Method (Opredeleniye tyazhesti na more mayatnikovym sposobom) - Candidate dissertation. Opponents: Doctor of Physico-Mathematical Sciences I.D. Zhongolovich, Doctor of Physico-Mathematical Sciences V.V. Fedynskiy, Candidate of Physico-Mathematical Sciences N.N. Pariyskiy. May 31, 1957.

The author attempted to make a more exact analysis of the movement of a pendulum on a mobile support with the aim of deriving more accurate formulae and developing methods for the calculation of the action of acceleration and inclination of the base of the pendulum. The calculation of this action is precisely the most important and least clear problem in the theory of the measurement of gravity forces on sea.

The author obtained a formula for the correction of the inclination and acceleration of the support in the observed value of gravity force which is valid for accelerations below 50 gl. The main terms of this relation correspond to the corrections of Brown, but there is some divergence in the terms

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49-12-15/16

Dissertations Defended in the Scientific Council of the Institute of Physics of the Earth, Institute of Physics of the Atmosphere and Institute of Applied Geophysics, Ac.Sc. USSR during the First Semester of 1957.

which depend on the periods of oscillations of the pendulum and the accelerations. In many cases, these terms can be disregarded. The problem was formulated and solved of determining the accelerations and the inclinations of the mounting by means of inclination-meters and accelero-meters. Attention is drawn to the erroneous nature of the view relating to the compensation of the term $\ddot{z}_o$ during the observation time ($\ddot{z}_o$ - vertical acceleration component of the mounting in an absolute system of co-ordinates). Under certain unfavourable conditions, particularly during observations in submarines, $\ddot{z}_o$ can be considerably larger than the value of other correction factors of the second order. For reducing the influence of the term $\ddot{z}_o$, the author proposed to increase the number of measurements at various sections of the film during determination of the average period of the pendulum; for this purpose, it is necessary to carry out recordings at the beginning and at the end of observations at high-speed of movement of the film for durations

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49-12-15/16

Dissertations Defended in the Scientific Council of the Institute of Physics of the Earth, Institute of Physics of the Atmosphere and Institute of Applied Geophysics, Ac.Sc. during the First Semester of 1957.

of 4 - 6 minutes. The advantage was emphasised of constructing pendulum instruments in a cardan suspension with a minimum natural frequency. It is not advisable to apply a damping device of the cardan suspension, which is linked with the ship. Methods were developed and investigated of evaluating the recordings of inclination-meters and accelero-meters for obtaining correction for the inclination and the acceleration and appropriate calculations were made based on materials collected by marine gravimetric expeditions. It is concluded that it is in principle possible to effect pendulum measurements on surface ships provided that the acceleration of the ship is below 20 gl; at larger accelerations, considerable difficulties occur associated with the determination of the accelerations and inclinations.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

49-3-6/16

AUTHOR: Romanyuk, V. A.

TITLE: Pendulum method of gravity measurements at sea, I. (Opredeleniye sily tyazhesti na more mayatnikovym sposobom.I.)

PERIODICAL: "Izvestiya Akademii Nauk, Seriya Geofizicheskaya" (Bulletin of the Ac.Sc., Geophysics Series), 1957, No.3, pp.341-350 (U.S.S.R.)

ABSTRACT: The author derives, from the general theorems of theoretical mechanics, the exact differential equation of the movement of a pendulum, on a base with six degrees of freedom. In para.1 the differential equations are derived of the movement of a pendulum on a base which moves arbitrarily, eqs.(13), p.344; it is thereby assumed that a physical pendulum rotates about a mobile axis OA in such a way that its rotation axis always coincides with the base, Fig.1,p.342. In para. 2 the orientation of the base in space is discussed and the coefficients b_{ik}, occurring in eq.(13), are determined on the basis of simple geometrical considerations. In para.3 the exact differential equation of the pendulum movement is transformed into an approximate equation by expanding into a series and retaining the terms up to and including the fourth degree. The differential equations of the movement of a horizontal elastic pendulum are also given.

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49-3-6/16

Pendulum method of gravity measurements at sea, I. (Cont.)

In para.4 the differential equations of the movement of a fictitious pendulum are derived, eqs.(22), p.349; these are examined in detail in Part II of the paper (same journal, No.4, pp.458-470). The period of the first real pendulum can be determined from evaluating the photo-recording of the fictitious pendulum. The eqs.(22) are written in such a way that the left part represents the equations of the first real pendulum without disturbance and the right part takes into consideration the disturbing influence of the accelerations and inclinations of the base. Acknowledgments are expressed to M. S. Molodenskiy, N. N. Pariyskiy and Yu. D. Bulanzhe.
There are 2 figures and 4 references, 2 of which are Slavic.

SUBMITTED: November 15, 1956.

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

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

49-3-15/16

AUTHOR: Kirillov, F.A.

TITLE: Conference of junior research workers, engineers and aspirants of the Institute of the Physics of the Earth, Ac.Sc., U.S.S.R. (Konferentsiya mladshikh nauchnykh sotrudnikov, inzhenerov i aspirantov Instituta Fiziki Zemli AN SSSR).

PERIODICAL: "Izvestiya Akademii Nauk, Seriya Geofizicheskaya" (Bulletin of the Ac.Sc., Geophysics Series), 1957, No.3, pp.411-415 (U.S.S.R.)

ABSTRACT: The conference was held on December 24-26, 1956. 21 papers were read relating to work completed in 1955 and 1956. In this report the contents of the individual papers are briefly summarised.

V. A. Romanyuk read a paper on determining the force of gravity of the sea; it is stated that other authors did not take into consideration the rotation of the base when formulating the differential equations of the pendulum movements and, therefore, he derived formulae in which this rotation is taken into consideration and which are convenient for practical utilisation.

A. V. Rykov read a paper on measuring the energy flow of seismic waves. He obtained several recordings of the

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Conference of junior research workers, engineers and aspirants of the Institute of the Physics of the Earth, Ac.Sc., U.S.S.R. (Cont.)

energy of seismic waves and evaluated the energy of earthquakes comparing the results with values calculated by means of a formula which is in use.

V. A. Smirnov discussed his investigations with optical instruments for measuring the seismic inclination proposed by G. A. Gamburtsev.

G. I. Reysner read a paper on "New movement of the Alay depression and the mountains surrounding it".

N. N. Leonov read a paper on the present structure of the Pamir-Alay region and comparison of its structure with the seismicity.

S. V. Vinogradov read a paper on acoustical observations in (coal) mine workings and he concluded that such acoustical observations are of interest from the point of view of investigating physical processes taking place in earthquake foci.

Card 2/4 V. I. Myachkin read the paper "Study of the stress state of a massive under mine working conditions by means of ultrasonics."

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

49-3-15/16

Conference of junior research workers, engineers and aspirants of the Institute of the Physics of the Earth, Ac.Sc., U.S.S.R. (Cont.)

I. S. Tomashevskaya read the paper "On the problem of investigation of the shear modulus of rock specimens under conditions of high pressures from all sides".
O. I. Silayeva read a paper on investigating the propagation of elastic waves in rods and plates.
The paper of V. S. Isayev was devoted to the study of distortions of the wave pattern in the case of grouping of seismographs (explosions) in seismic prospecting.
S. A. Fedotov read a paper on the kinematic and dynamic features of waves refracted at curvilinear boundaries.
Ye. V. Rybakova read a paper on dipole electromagnetic sounding.
O. M. Barsukov read the paper "Certain problems of the method of measurement in an elliptical polarised electromagnetic field".
B. P. D'yakonov read the paper "Diffraction of electromagnetic waves on spherical inclusions in a two-layer medium".
I. I. Rokityanskiy read a paper on the study of the induced polarisation in ion conducting rocks.
A. S. Bol'shakov read the paper "Magnetic stability of rocks".
R. S. Taychinov read the paper "Magnetic properties of sedimentary rocks in strong magnetic fields".

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49-3-15/16

Conference of junior research workers, engineers and aspirants of the Institute of the Physics of the Earth, Ac.Sc., U.S.S.R. (Cont.)

S. P. Burlatskaya read a paper on the technique of measuring the magnetic properties of rocks.
S. Yu. Brodskaya read a paper on investigating the magnetic properties of anisotropic rocks.
Ye. N. Mokhova read the paper "Magnetization of a rectangular prism".
N. F. Mal'tseva and K. Ya. Koz'yakova read a paper on the technique of evaluation of recordings of micro-variations of the magnetic field of the Earth.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V A

AUTHOR: Romanyuk, V. A. 49-4-5/23

TITLE: Determination of the gravity force on the sea by the pendulum method. Part II. (Opredeleniye sily tyazhesti na more mayatnikovym sposobom. II.)

PERIODICAL: Izvestiya Akademii Nauk, Seriya Geofizicheskaya, 1957, No.4, pp.458-470 (USSR)

ABSTRACT: In Part I of this paper (Ref.4) the differential equation was derived of the movement of a fictitious pendulum, Eq.(1), p.458. It was assumed that in this equation the orientation angles of the base (α, β, γ and φ) are small values of the first order and all the terms, including that of the fourth order, were maintained. In this paper an evaluation is made of the influence of the disturbing terms of the differential equation of the movement of a fictitious pendulum on its average period. For the observed values of the gravity force the second order corrections, due to the influence of inclinations and the accelerations of the base are determined as well as corrections for the non-isochronous nature of the pendulum and amplitude corrections. The results obtained by the author of this paper are then compared with the

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.A.

Pendulum determination of gravity at sea. Izv. AN SSSR. Ser. geofiz. no.1:54-64 Ja '58. (MIRA 11:3)

1. Akademiya nauk SSSR Institut fiziki Zemli.
(Gravity)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

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AUTHOR: Romanyuk, V. A.

TITLE: On Perturbations of the Force of Gravity by the Atmosphere (O Vozmushcheniyakh sily tyazhesti atmosferoy)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 2, p 320 (USSR)

ABSTRACT: Precision of measurements of variations of the force of gravity at a given point has been considerably increased in recent years. The number of observations of such variations has also increased. To use the data obtained by observation, it is necessary to be able to exclude a large number of perturbating factors in order to obtain the correct value of the gravity. One of such perturbating factors, which is not allowed for at present, is the attraction of the atmosphere. Simple calculations show that variations of this attraction may reach values comparable with the magnitude of attraction by the moon and the sun. Because of the smallness of the attraction due to atmosphere and to simplify further discussion, the author assumes the earth to be a sphere of radius

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On Perturbations of the Force of Gravity by the Atmosphere

R . Effect of attraction due to the atmosphere on the gravity was considered at a point A , which is at a height H above sea level. Attraction of the whole terrestrial atmosphere at point A can be divided into two parts: 1) attraction due to the layer between the earth's surface and a sphere of radius R + H whose centre coincides with the earth's centre; 2) attraction due to the atmospheric layer outside the sphere of radius R + H . Attraction of the former layer may be regarded, with sufficient accuracy, as being constant and directed towards the earth's centre. This attraction can be added to the attraction by the earth as a whole and need not be considered any further. Attraction of the latter (external) part of the atmosphere at the point A will be equal to zero only when the atmosphere is not perturbed, i.e. when the density of the atmosphere is constant. Conversely, if the atmosphere is perturbed, then its attraction is not equal to zero. The author discusses the following simple case of a perturbed state of the atmosphere, which is of practical interest, and calculates the atmospheric attraction at the point A . The author assumes the atmospheric pressure in a region bounded by a circle of radius r with its centre at the point A at a height of

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On Perturbations of the Force of Gravity by the Atmosphere

H above sea level, to be constant and equal to p_A. The atmospheric pressure at all other points on the earth's surface is also assumed to be constant and equal to p_o. Since the area of the former region is considerably smaller than the area of the latter region, then the change in pressure near the point A does not in practice affect the value p_o. The author assumes, therefore, that p_o can be equated to the normal atmospheric pressure at the height H above sea level. Using a formula for attraction by a unit spherical layer and a unit plane layer, the author finds attraction at the point A due to condensed atmosphere to be equal to:

$$\Delta g = 2\pi f \rho (p_o - p_A) = -0.000568(p_A - p_o) \text{milligals} \qquad (1)$$

where ρ is the density of mercury, f is the attraction constant and p is pressure in mm Hg. If $r \gg 10$ h, where h is the height of the perturbed atmospheric layer, then the

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On Perturbations of the Force of Gravity by the Atmosphere

error in determination of Δg from Eq (1) does not exceed 5% (Ref 1), which is quite sufficient for practical applications. Correction to the observed value of the force of gravity is then equal to:

$$\Delta g = +0.000568(p_A - p_0) \text{milligals} \quad . \qquad (2)$$

Assuming 760 mm Hg to be the normal pressure, the author calculated a set of corrections given in the table below:

p_A	Δg milligals	p_A	Δg, milligals
700	-0.034	760	0
710	-0.028	770	+0.006
720	-0.023	780	+0.011
730	-0.017	790	+0.017
740	-0.011	800	+0.023
750	-0.006		

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On Perturbations of the Force of Gravity by the Atmosphere

If the barometric coefficient of an instrument used for measurement of the force of gravity was determined from observations at various atmospheric pressures, then the barometric correction will also allow for the effect discussed in the present paper. When the barometric coefficient is determined in a "barometric chamber", the barometric correction will not include the effect discussed, and a correction is necessary for attraction by the atmosphere. This is a complete translation. There is 1 table and 1 Soviet reference.

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

SUBMITTED: August 15, 1957.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.A.

Effect of the swaying of a pendulum stand on the vibration period. Trudy Inst. fiz. zem. no.8:61-67 '59 (MIRA 13:3)
(Pendulum)

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PHASE I BOOK EXPLOITATION SOV/3681

Akademiya nauk SSSR. Institut fiziki zemli

Voprosy instrumental'noy gravimetrii; [sbornik] (Problems of Instrument Gravimetry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 76 p. (Series: Its: Trudy, No. 8/175/) Errata slip inserted. 1,500 copies printed.

Ed.: Yu. D. Bulanzhe, Doctor of Physical and Mathematical Sciences; Ed. of Publishing House: V.G. Berkgaut; Tech. Ed.: Yu.V. Rylina.

PURPOSE: This publication is intended for geophysicists, physicists, hydrographers, geodesists, and navigators.

COVERAGE: This is a collection of eight articles dealing with gravimetric instruments used in oceanographic investigations. Descriptions of the instruments and data on test results are given. No personalities are mentioned. References appear at the end of some of the articles.

Popov, Ye.I. Quartz Gravimeter for Observations on the Ocean. 32
A description is given of a quartz gravimeter of new design with photographic recording of the readings. Strong damping of its elastic systems makes observations possible while moving if the instrument is installed in a gimbal.

Sukhodol'skiy, V.V. Instrument RNU for Recording Incline and Acceleration in Gravimetric Determinations on the Ocean 42
In addition to the recording of incline and acceleration, the instrument makes galvanometric recording of vibrations which are converted into electrical oscillations by means of suitable transmitters. Data obtained during expeditions to determine the nature of vibrations, inclines and accelerations acting on the decks of a diesel-electric ship and the expedition vessel "Mikhail Lomonosov" are presented.

Bulanzhe, Yu. D. Vibration of the Support of Quartz Gravimeters with Horizontal Torsion Wire 54

Rozanyuk, V.A. Effect of Support Vibrations on the Pendulum Oscillation Period 61

Kuzivanov, V.A. Gravity Determination by Means of a Gravimeter on a Moving Base 68

Berezin, E.M., and V.A. Kuzivanov. Nomograms for the Determination of Corrections for Amplitude, Temperature, Depth of Submersion and Eötvös Effect and for the Determination of the Coefficient of Vibration of the Support in Pendulum Observations on the Ocean 72

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

S/006/60/000/008/001/001
B012/B051

AUTHOR: None given

TITLE: Chronicle

PERIODICAL: Geodeziya i kartografiya, 1960, No. 8, pp. 72-77

TEXT: From May 10-14, 1960 the shestoye Mezhduvedomstvennoye soveshchaniye po gravimetrii (Sixth Interdepartmental Conference on Gravimetry) was held in Moscow. It was convened by the geodezicheskaya sektsiya Komiteta geodezii i geofiziki Akademii nauk SSSR (Section for Geodesy of the Committee of Geodesy and Geophysics of the Academy of Sciences USSR) and the Aerogravimetricheskaya laboratoriya Instituta fiziki Zemli AN SSSR (Laboratory for Aerogravimetry of the Institute of Physics of the Earth of the AS USSR). 216 representatives of 64 organizations took part in this conference: production organizations, research centers, testing and construction organizations, educational institutions, and organizations of the Akademiya nauk SSSR (Academy of Sciences USSR), Sibirskoye otdeleniye AN SSSR (Siberian Department of the

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AS USSR), Akademii nauk Ukrainskoy, Gruzinskoy, Litovskoy i Azerbaydzhanskoy SSR (Academies of Sciences of the Ukrainskaya, Gruzinskaya, Litovskaya, and Azerbaydzhanskaya SSR), Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya SSSR (Ministry of Higher and Secondary Special Education of the USSR), Ministerstvo geologii i okhrany nedr SSSR (Ministry of Geology and Preservation of Mineral Resources), Komitet standartov, mer i izmeritel'nykh priborov pri Soveta Ministrov SSSR (Committee on Standards, Measures, and Measuring Instruments of the Council of Ministers USSR), NII VTS, Gosudarstvennyy Komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee on Automation and Machine Construction of the Council of Ministers USSR), as well as representatives of the factories of the Moskovskiy sovnarkhoz (Moscow Sovnarkhoz) and the Leningradskiy sovnarkhoz (Leningrad Sovnarkhoz) that produce gravimetric apparatus. 70 lectures were held. I. D. Zhongolovich (Institut teoreticheskoy astronomii AN SSSR (Institute of Theoretical Astronomy of the AS USSR) spoke about the "Experience with Determining Some Parameters of the Gravitational Field of the Earth From Observations of the Second and

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Third Artificial Satellites". B. M. Yanovskiy (VNIIM) spoke about "The Determination of the Absolute Value of Gravitational Acceleration of the Point of VNIIM in Leningrad". M. Ye. Kheyfets spoke about the "High-precision Pendulum Apparatus of the TsNIIGAiK", V. A. Tulin about "Portable Quartz Clocks", [illegible] about "Questions of Time Recording in Pendulum Measurements", [illegible], T. V. [illegible], and M. S. Davydov about the "Portable Gravimeter-altimeter [illegible] (GVP-1)", K. Ye. Veselov about the "Design of a High-precision Gravimeter", [illegible] (IFZ AN SSSR (IFZ AS USSR)) about "The Main Working Directions in the Field of Determining Gravitational Acceleration on the Sea", [illegible] about "The Theory of Determining Gravitational Acceleration on the Sea by Means of Gravimeters", [illegible] about "String Sea Gravimeters". [illegible] (TsNIIGAiK) investigated in his lecture tolerable errors already published in reports or submitted for publication by some authors. Among these are papers by [illegible] (L'vovskiy politekhnicheskiy institut (L'vov Polytechnic Institute)), A. K. [illegible] (Permskiy Gosudarstvennyy universitet (Perm' State University)), and S. V. [illegible] (Leningradskiy Gosudarstvennyy universitet

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Romanyuk V.A.

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Chronicle

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B012/B051

(Leningrad State University)). L. A. Govorova spoke about "The Errors of Interpolation of Gravity Anomalies and the Accuracy of Determining Gravimetric Deflections of the Vertical", R. [illegible] Bryusov ([illegible]) about "Errors of the Representation and Interpolation of Gravitational Anomalies". S. N. Shcherlov reported on "Preliminary Results of Geodetic and Gravimetric Work in the Antarctica", Yu. N. Avruk on the "Structure of the Earth Crust in the Antarctica According to Gravitational Data", S. A. Tchakov on "The Structure of the Earth Crust in the Antarctica According to Gravimetric Data". [illegible] (MIIGAIK) spoke about the "Preparation and Use of Gravimetric Experts". The recommendations given by the Conference are mentioned. From April 19 to 22, 1960 a Scientific and Technical Conference of the Workers of the Topographic-geodetic and the Surveying Service of the Glavnoye Upravleniye geologii i okhrany nedr pri Sovete Ministrov Ukrainskoy SSR (Main Administration of Geology and Preservation of Mineral Resources of the Council of Ministers Ukrainskaya SSR) was held in Artemovsk. There, the state of the topographic-geodetic and surveying work in the organizations of the Glavgeologiya USSR (Glavgeologiya UkrSSR) and the introduction of new

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techniques and technology in production were discussed. At the Conference it was stated that the extent of the work mentioned will be considerably increased within the next seven years. Furthermore, the following drawbacks were pointed out: The methods applied are too extensive and expensive, the geological organizations are insufficiently equipped with new apparatus; in geological observations the aero-photographs and topographic plans available on a large scale are not sufficiently used. This state is explained by inefficient technical direction, inefficient technical and material supply, by a lack of suitable direction in the Glavgeologiya UkrSSR and the Ministerstvo geologii i okhrany nedr SSSR (Ministry of Geology and Preservation of Mineral Resources of the USSR). Recommendations are given to improve this situation. For improving the qualifications of the workers the Conference suggested to convene scientific and technical conferences at regular intervals. For improving information and for the exchange of experience the editorial board of the present periodical was asked to furnish a section for topographic and geodetic work in geological observations. The participants in the Conference appealed to the workers

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of the topomarkshcyderskaya sluzhba Glavgeologii USSR (Topographic and Surveying Service of the Glavgeologiya UkrSSR) to do everything possible in order to carry out the resolutions of the 21st Party Congress of the CPSU and the Plenum of the Central Committee of the CPSU in June.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.A.

Determining the acceleration of gravity with a gravimeter mounted on a mobile foundation. Trudy Inst. fiz. Zem. no.18:3-97 '61. (MIRA 15:2)

(Gravimetry)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

S/169/62/000/007/013/149
D228/D307

AUTHORS: Romanyuk, V. A. and Mikisha, A. M.

TITLE: Influence of the geometric shape of a pendulum's knife edge on its movement

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 17, abstract 7A111 (Tr. In-ta fiz. Zemli, AN SSSR, no. 18 (185), 1961, 98-124)

TEXT: A differential equation is compiled for a pendulum's movement, with allowance for the influence of the curvature of a cylindrically shaped knife edge. The edge's curvature is taken into account by means of the magnitudes of ε and δ, which depend on the pendulum's angle of inclination φ, and their time derivatives. No allowance is made for the deformation of the knife edge of the pendulum and the pedestal under the effect of their own weight. The problem is solved completely for the case when the equation of the curve of the pendulum's knife edge is given in a parametric form as the graded series:

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$$\varepsilon = \sum_{i=0}^{\infty} \varepsilon_i \varphi^i; \quad \delta = \sum_{i=0}^{\infty} \delta_i \varphi^i$$

The case, when the equation of the knife edge surface is given in a cylindrical system of coordinates ($r = r[\theta]$), is considered in addition. Here θ is the angle between the polar axis and the radius vector of point A -- the knife edge's point of contact with the pedestal in the deflected state. Formulas, allowing the problem to be reduced to what was previously considered and solved, are compiled for this case. Formulas are derived to determine the correction for the influence of the geometric shape of the pendulum's knife edge on its period. The comparison of formulas, formerly applied for the correction to the pendulum's period (for a circular cylindrical knife) with the deduced formulas shows that errors of up to 10×10^{-7} sec can be tolerated when using the classical formula. The correction to the period of the pendulum's oscillation,

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which is specified by the influence of the parameter of δ_4, has a systematic character and structure of amplitude correction. The influence of the amplitude correction and the influence of the parameter of δ_4 mutually compensate each other in separate cases. The period of the pendulum's oscillations does not thereby depend on its amplitude. The influence of the knife edge's geometric shape on the period of the pendulum's oscillations results in the fact that the amplitude correction does not always fully take into account the dependence of the period of the pendulum's oscillation on its amplitude. [Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.A.

Determining the attenuation coefficient of a gravimeter with a high degree of damping. Trudy Inst. fiz. Zem. no.18:125-131 '61. (MIRA 15:2)

(Gravimeter (Geophysical instrument))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.A.

Observations with pendulums on a gyrostabilized platform. Trudy Inst. fiz. Zem. no.18:132-137 '61. (MIRA 15:2)
(Pendulum)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

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S/035/62/000/008/078/090
A001/A101

9.6160

AUTHOR: Romanyuk, V. A.

TITLE: The effect of errors in adjustment, measuring opening angle and superposition of blinks in gravimeters ГАЭ (GAE) or С Н-3 (SN-3) on the accuracy of gravity acceleration measurement and calibration by the inclination method

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 8, 1962, 25, abstract 8G216 ("Tr. In-ta fiz. Zemli AN SSSR", 1962, no. 24, 3 - 16)

TEXT: The author starts from the differential equation, derived earlier (RZhAstr, 1962, 6G188) for the motion of the pendulum of SN-3 type gravimeters on a mobile base. He derives now the equation of equilibrium on a fixed base taking into account the error in adjusting the frame of the gravimeter elastic system with respect to its body, errors in measuring the opening angle of the quartz system, and errors in leveling the instrument. Limiting the errors by some admissible magnitudes, the equation obtained retains terms exceeding 0.002 mgal; the effect of each term has been investigated in both measuring the values of

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The effect of errors in adjustment...

Δg and in calibration by the inclination method. It is shown that it is possible to increase the accuracy of measurements with SN-3 and GAE gravimeters up to a few hundredths of milligal by observing the following necessary (but not sufficient) conditions: 1) The error in superposing the mobile and fixed blinks should not exceed a few hundredths of arc second; 2) the error in measuring the opening angle of the quartz system should not exceed 0".1 (at $\Delta g \leq 1{,}000$ mgal); 3) the error in leveling of the gravimeter should not be over 30". In calibration of gravimeters SN-3 and GAE by the inclination method the demands on the accuracy of measuring the opening angle, blink superposition and gravimeter adjustment remain the same as in measurements of Δg.

P. Shokin

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.A.

Relative measurements of gravity acceleration by means of a pendulum with steady vibrations. Trudy Inst.fiz.Zem. no.24:17-27 '62. (MIRA 15:7)

(Gravimetry)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.A.

Effect of the way of attachment of the upper part of the elastic plane suspension of a pendulum on its period. Trudy Inst. fiz. Zem. no. 29:67-73 '63.

Precision of the adjustment and leveling of gravimeters with horizontal elastic suspensions. Ibid.:74-84 (MIRA 17:6)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.A.

Relative determinations of the acceleration of gravity by an elastically suspended pendulum. Trudy Inst. fiz. Zem. no. 29: 53-66 '63. (MIRA 17:6)

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L 35897-66 EWT(1) GW/GD

ACC NR: AT6006260 (N) SOURCE CODE: UR/0000/65/000/000/0026/0071 51 B+1

AUTHOR: Romanyuk, V. A.

ORG: None

TITLE: The determination of the cooscillation of the stand of a pendulum device

SOURCE: AN SSSR. Institut fiziki Zemli. Apparatura i metody morskikh gravimetricheskikh nablyudeniy (Apparatus and methods of marine gravimetric observations). Moscow, Izd-vo Nauka, 1965, 26-71

TOPIC TAGS: gravimeter, pendulum mechanics, mechanical vibration, vibration analysis, gravitation effect, friction

ABSTRACT: For the relative determination of gravitational forces in modern pendulum devices the co-oscillation of the stand is usually determined using the resonance method. Of the two pendulums used, the amplitude of one is assumed absolute zero, a requirement which may not always be easy to satisfy. The present article develops a more accurate solution of the cooscillation problem which takes into account the friction forces acting on the two pendulums used in the resonance approach. The general relationships are derived and the arbitrary constants of integration are determined. The determination of the oscillation of the stand from the relationships of amplitudes of the two pendulums is described and the simplest case of co-oscillation determination is discussed. A detailed discussion is given of some other special cases. This comprehensive paper concludes with a description of the

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ACC NR: AT6006260

determination of stand cooscillation by measuring the periods of a pair of pendulums used in the resonance method determination. Orig. art. has: 210 formulas and 3 tables.

SUB CODE: 20 / SUBM DATE: 29Oct65 / ORIG REF: 004 / OTH REF: 007

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.A.

Effect of friction on the period of vibration of a difference pendulum. Izv. AN SSSR. Fiz. zem. no.4:83-84 '65. (MIRA 18:8)

1. Institut fiziki Zemli AN SSSR.

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L 63398-65 EWT(1)/EWG(v) GS/GW

ACCESSION NR: AT5022966 UR/0000/65/000/000/0039/0058

21
B+1

AUTHOR: Romanyuk, V. A.
55

TITLE: Dependence of the oscillation of an elastically suspended pendulum on the tilts of its base in the plane of oscillation

SOURCE: AN SSSR. Institut fiziki Zemli. Apparatura i metody eksperimental'nykh issledovaniy po gravimetrii (Instruments and methods of experimental gravimetric research). Moscow. Izd-vo "Nauka", 1965, 39-58

TOPIC TAGS: vibration, pendulum, pendulum motion

55,12

ABSTRACT: Mathematical formulas are derived and solved to demonstrate the dependence of the oscillation period of an elastically suspended pendulum on the tilts of its base in the plane of oscillation. In this problem, the pendulum oscillations are assumed to occur in only one plane (no torsion in the suspension system). Orig. art. has 2 figures, 109 formulas, and 4 graphs.

ASSOCIATION: none

SUBMITTED: 19Jan65 ENCL: 00 SUB CODE: ME

NO REF SOV: 005 OTHER: 000 FSB v. 1, no. 8

Card 1/1 dm

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L 63397-65 EWT(1)/EWG(v) GS/GW

UR/0000/65/000/000/0059/0068

ACCESSION NR: AT5022967

23

B+1

AUTHOR: Romanyuk, V. A.

55

TITLE: Measurement of the period of oscillation of a gravimetric pendulum with counters

55,12

SOURCE: AN SSSR. Institut fiziki Zemli. Apparatura i metody eksperimental'nykh issledovaniy po gravimetrii (Instruments and methods of experimental gravimetric research). Moscow, Izd-vo "Nauka", 1965, 59-68

TOPIC TAGS: geophysic instrument, vibration, pendulum, pendulum motion gravimetry, electronic measurement

ABSTRACT: Various schemes are presented for the use of photoelectrical counters to make more accurate and rapid measurements of the oscillation periods of gravimetric pendulums. Orig. art. has 8 figures, 27 formulas, and 4 tables.

ASSOCIATION: none

SUBMITTED: 19Jan65

ENCL: 00

SUB CODE: ES, ME

OTHER: 000

FSB v. 1, no. 8

NO REF SOV: 000

Card 1/1dm

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L 63063-65 EWG(v)/EWT(1) Pe-5/Pg-4/Po-4/Pq-4 GW UR/0387/65/000/004/0083/0084
ACCESSION NR: AP5017042 528.561

AUTHOR: Romanyuk, V. A.

TITLE: The friction effect on the oscillation period of a double pendulum

SOURCE: AN SSSR. Izvestiya. Fizika zemli, no. 4, 1965, 83-84

TOPIC TAGS: pendulum, friction, oscillation, phase characteristic, damping factor

ABSTRACT: It is shown that a correction for friction must be introduced in approximating gravitational acceleration by means of a double pendulum. Two pendulums with different damping coefficients are assumed to be set up with parallel planes of oscillation. Starting with differential equations expressing the movements of each pendulum and of the double pendulum, an equation is derived to express the time correction in dependence on the coefficient of friction. This is expressed by $\delta T = -\frac{(\mu_1 - \mu_2)T^2}{\pi}\left[\frac{a_2}{a}\sin\delta\right]$, the terms of which are taken from V. A. Romanyuk (Vliyaniye sokachaniya shtativa na period kolebaniy mayatnika. Tr. In-ta fiz. Zemli, No. 8 (175), 61, 1959). When observations are made on a moving base, the effect of friction cannot be made sufficiently small merely by a single diminution in phase

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ACCESSION NR: AP5017042

difference or time difference. When conditions are especially unfavorable (such as when a_2:a > 0.5 and sin δ 0.5), the correction factor may become very large. Orig. art. has: 10 formulas.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of Sciences SSSR, Institute of Terrestrial Physics)

SUBMITTED: 10Mar64 ENCL: 00 SUB CODE: ES, ME

NO REF SOV: 002 OTHER: 001

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445310019-3

ROMANYUK, V.A.

Ways to recondition fitting and packing beads on 6DR 30/50 diesel engines. Biul. tekh.-ekon. inform. Tekh. upr. Min. mor. flota 7 no.8:77-84 '62. (MIRA 16:5)

1. Gruppovoy inzh. montazhno-stroitel'noy stantsii Dal'nevostochnogo parokhodstva.
(Marine diesel engines--Maintenance and repair)

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