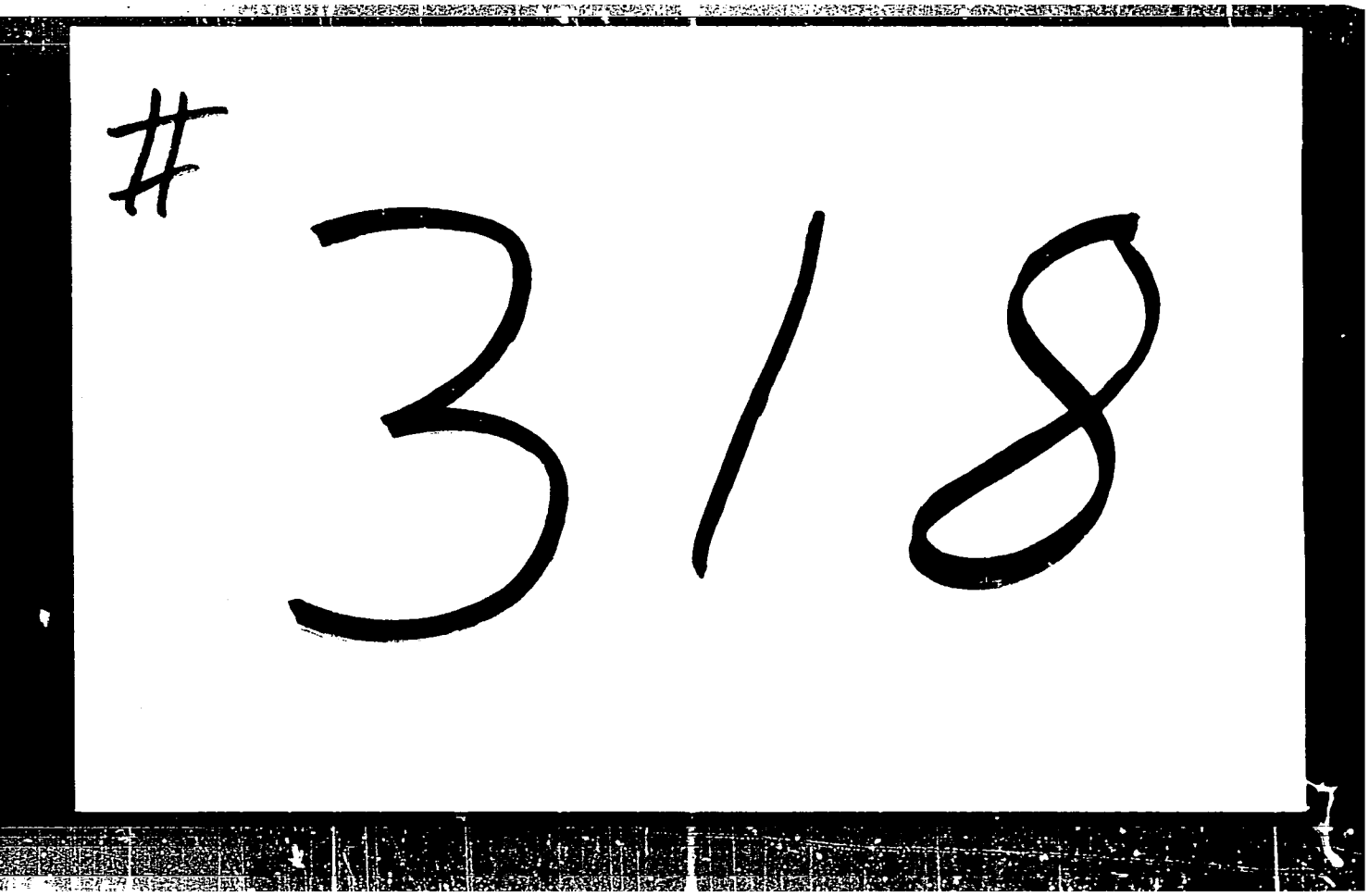


Z/037/62/000/003/004/007
E024/E435

AUTHOR: Litomiský, M.

TITLE: An 80 kW water-cooled solenoid, intended for experiments at temperatures below 1°K

PERIODICAL: Československý časopis pro fysiku, no.3, 1962, 244-251

TEXT: The winding of the coreless solenoid is made from 18 x 1 mm electrolytic copper strip insulated by silon fibres 0.3 mm thick wound on the bare copper with a pitch of 3 mm. The beginning of the strip is brazed onto a brass ring of 66 mm diameter. The insulated copper strip is wound onto the ring to form an outside diameter of 210 mm. The complete solenoid consists of 8 such coils connected in series as shown in Fig.2. Insulating plates, 3 mm thick, with large openings are placed between the coils. The coils are mounted on a central brass tube of 57 mm i.d. An arrangement similar to Helmholtz coils is formed. The openings in the insulating plates are used as an inlet for cooling water through a number of radial holes. The solenoid is surrounded by an outer vessel. The demineralized cooling water (5 atm, 180 litres/min) runs into the outer vessel,
Card 1/3

An 80 kW water-cooled ...

from it through the radial holes into the centre of the solenoid and then parallel with the axis of the solenoid in both directions, half the quantity up and half down. It leaves the solenoid via both lids of the surrounding vessel and is cooled with mains water in a heat exchanger. The current is supplied from an 80 kW generator. The magnetic field is homogeneous to within 1% in a volume of 350 cm^3. The intensity of the magnetic field is H = 13.0 kOe, with U = 125.2 V and I = 635 A. The cooling proved efficient and, with certain modifications, it should be possible to increase the field to 38 kOe. This will require 350 kW of power. There are 4 figures.

ASSOCIATION: Ústav jaderného výzkumu ČSAV, Řež
(Institute for Nuclear Research, ČSAV, Řež)

SUBMITTED: October 18, 1961

Card 2/2

Z/037/62/000/003/007/007
E024/E435

AUTHOR: Litomiský, M.

TITLE: Probe with a swivelling search coil for the measurement of magnetic fields

PERIODICAL: Ceskoslovensky casopis pro fysiku, no.3, 1962, 302-303

TEXT: Usually, magnetic fields are measured by rapidly transferring a small coil from the magnetic field into a position of zero-flux. It is more convenient, however, to leave the coil in position and rotate it by 180°. The induced charge is measured with a ballistic galvanometer. The axis of rotation of the coil is perpendicular to the tube in which the coil is located. The coil can be turned from one equilibrium position to the other with the aid of a rubber cord. The sensitivity can be reduced by rotating the coil by 90° only instead of the full 180° and by using several tappings on the coil. The field strengths were measured with an accuracy better than ± 1%. There is 1 figure.

ASSOCIATION: Ústav jaderného výzkumu ČSAV, Řež
(Institute for Nuclear Research ČSAV, Řež)

SUBMITTED: October 20, 1961
Card 1/1

LITOMISKY, Miroslav

Apparatus for the creation of powerful magnetic fields. Vestnik
GSAV 72 no.5:594-595 '63

L 59565-65 EWT(l)/EWG(k)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(c) Pu-4 IJP(c) JD/
WW/JW/GG

ACCESSION NR: AT5009436 CZ/0000/64/000/000/0053/0059

AUTHOR: Evchkov, J. F.; Goncharov, I. N.; Kuzmin, V. L.; Litovsky, M.; Khukhareva, I. S. 21 51 51

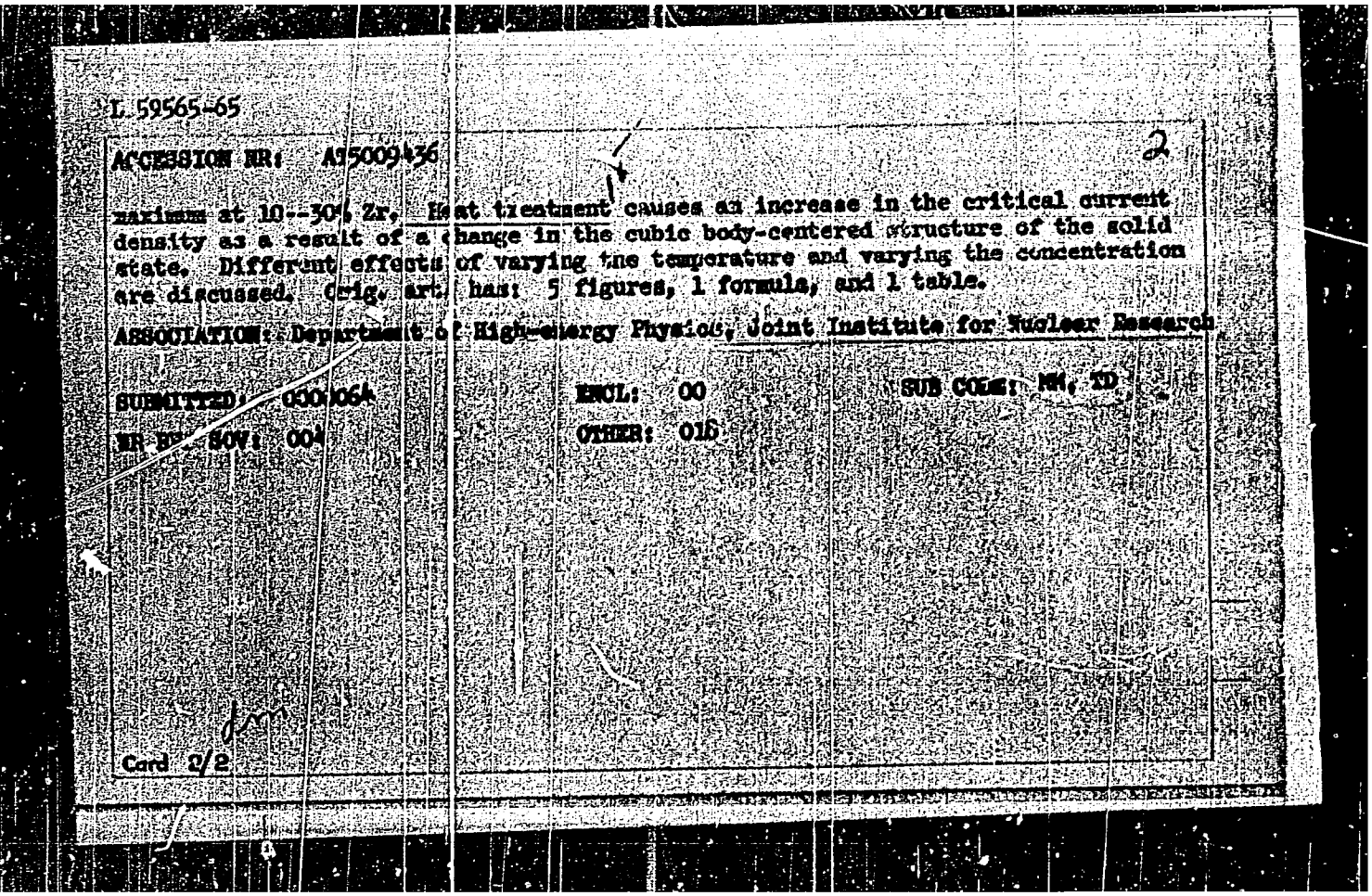
TITLE: Superconducting properties of Nb-Zr alloys

SOURCE: Conference on Low Temperature Physics and Techniques. 3d, Prague, 1963. Physics and techniques of low temperatures; proceedings of the conference. Prague, Publ. House of Czechosl. Academy of Sciences, 1964, 53-59

TOPIC TAGS: niobium alloy, zirconium alloy, superconductivity, heat treatment effect, composition effect

ABSTRACT: The authors report the results of studies of Nb-Zr alloys with Zr content from 0 to 80%. Particular attention was paid to alloys with Zr as the basic material (from 65% Zr up). These alloys were studied, before and after various treatments, in the β state of solid solution, which was produced in alloys with less than 75% by quick cooling of the samples on a copper substrate. To obtain the β structure for higher Zr content, the samples had to be quenched in water. The heat treatment and the measurement procedure are described. The results show that when the alloy is not heat treated, both the critical current density and the temperature of the superconducting transition exhibit a similar variation, with a

Card 1/2



L 59565-65

ACCESSION NR: AP5009436

2

maximum at 10--30% Zr. Heat treatment causes an increase in the critical current density as a result of a change in the cubic body-centered structure of the solid state. Different effects of varying the temperature and varying the concentration are discussed. Orig. art. has: 5 figures, 1 formula, and 1 table.

ASSOCIATION: Department of High-Energy Physics, Joint Institute for Nuclear Research

SUBMITTED: 00Dec64 ENCL: 00 SUB CODE: MM, ID

NR REF SOV: 004 OTHER: 015

Card 2/2

L 61677-65

ACCESSION NR: AT5009465 Z/0000/64/000/000/0222/0225

AUTHOR: Litvinsky, M.

TITLE: Solenoids for strong magnetic fields

SOURCE: Conference on Low Temperature Physics and Techniques. 3d, Prague, 1963. Physics and techniques of low temperatures; proceedings of the conference. Prague, Publ. House of the Czechosl. Academy of Sciences, 1964, 222-225

TOPIC TAGS: solenoid, cryogenic device, magnetic field measurement, demagnetization, paramagnetic cooling

ABSTRACT: The article describes a solenoid first described by F. Bitter (Rev. Sci. Instr. v. 10 (1939) 333 and v. 33 (1962) 244) and now in operation at the Nuclear Research Institute of the Czechoslovak Academy of Sciences in Rez. It was designed by K. Malek and produced in the CKD Praha factory. It is rated 48 kG at an output of 649 kW and is expected to deliver at least 52 kG for permanent operation and 57 kG for short-term operation. The specifications, the measurements of the magnetic field, and the power-supply circuit and the cooling circuit of the solenoid are described. Mention is also made of one more solenoid in operation at the same institute, rated 13 G and drawing 80 kW, a detailed description of which was

Card 1/2

L 61677-65

ACCESSION NR: AT5009465

published earlier (Cs. cas. fys. 12 (1962) 244). Both solenoids are intended primarily to obtain very low temperatures by adiabatic demagnetization of paramagnetic salts, for experiments with polarized nuclei, and for investigation of the properties of superconductors. Later experience showed that the Fitter type solenoids work without difficulty at 52.5 kG (740 kW) for several hours and 62 kG (932 kW) for several (about 6) minutes. Orig. art. has: 4 figures.

ASSOCIATION: Nuclear Research Institute, Czechoslovak Academy of Sciences, Rez

SUBMITTED: 00 ENCL: 00 SUB CODE: EM, NP

NR REF SOV: 000 OTHER: 005

Card 2/2

L 18516-66 EWT(1)/EWP(t) IFP(c) JD/WW/GG

ACC NR: AP6010223 SOURCE CODE: CZ/0038/65/000/004/0142/0143

AUTHOR: Litomisky, Miroslav --Litomiski, M.; Ruzicka, Jiri--Ruzhichka, I. 69 B

ORG: Institute of Nuclear Research, CSAV, Rez (Ustav jaderneho vyzkuma CSAV)

TITLE: Equipment for measurement of the superconducting properties of superconductors in strong magnetic fields 21,44,55 21,14,55

SOURCE: Jaderna energie, no. 4, 1965, 142-143

TOPIC TAGS: superconductivity, strong magnetic field, current density, magnetic field, liquid helium, solenoid, ferromagnetism

ABSTRACT: INR Report No. 1144/1964, published in Jaderna Energie only as Czech and Russian summaries (modified): The article gives a description of equipment used to measure the critical current density of superconductors in a magnetic field at a temperature of 4.2°K. The samples of superconducting materials (wires or strips) can be measured by using two different holders. The first has a current reverser working in a helium bath, so that ten samples in a constant field of up to 60 kg (force) can be measured in a single experiment. When the other holder is used, three samples can be measured simultaneously in a magnetic field of up to 83 kg (force), obtained by concentration of the field of a solenoid by means of ferromagnetic extensions placed in a liquid helium bath. The results of certa measurements are given. [JPRS]

27

SUB CODE: 20 / SUBM DATE: none

UDC: 537.312.62

2

Card 1/1

L 23651-66 EPF(n)-2/T/EWP(t) IJP(c) JD/WW/JG

ACC NR: AP6013187 SOURCE CODE: CZ/0055/66/016/004/0338/0341

AUTHOR: Ruzicka, J.; Litomisky, M.; Malinsky, I.

ORG: Nuclear Research Institute, Czechoslovakian Academy of Sciences, Rez; State Research Institute of Materials, Prague

TITLE: Some superconducting properties of 25% Nb-75% Zr alloy

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 16, no. 4, 1966, 338-341

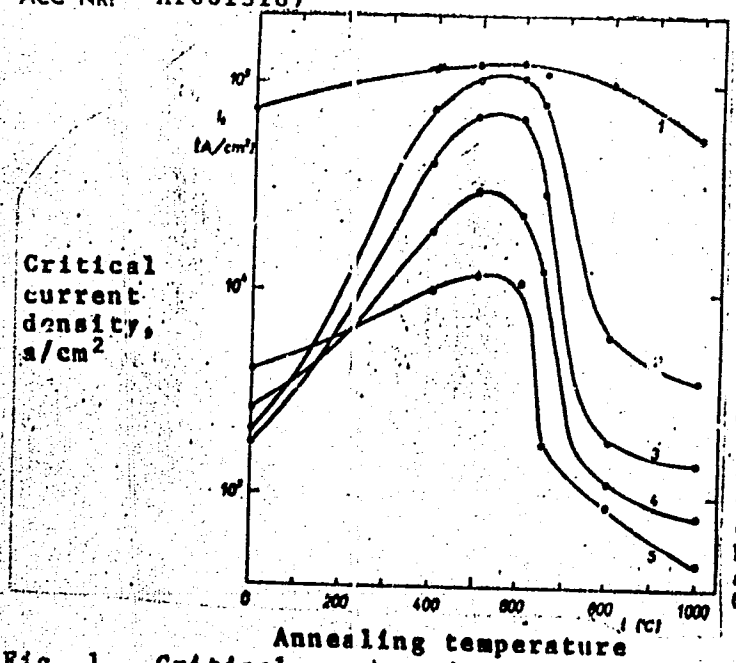
TOPIC TAGS: zirconium alloy, niobium containing alloy, superconducting alloy, alloy property, alloy superconductivity

ABSTRACT: Zirconium-base alloy containing 25% niobium was melted from 99.8%-pure zirconium and 99.31%-pure niobium. The ingots were vacuum homogenized, conditioned by machining, and preforged into rods which were then cold drawn with reductions of up to 99.96% into wires 0.26, 0.36, and 0.5 mm in diameter. The wires were vacuum annealed at 400—1000C for 1 hr and tested for the effect of annealing temperature on critical current density at various magnetic field intensities. The critical current density of "as-cold drawn" alloy increased somewhat with increasing reduction, especially at high magnetic field intensities (70 kgs). The critical current density of annealed wire in-

Card 1/2

L 23651-66

ACC NR: AP6013187



Annealing temperature

Fig. 1. Critical current density for Zr-25% Nb alloy wire versus annealing temperature at a magnetic field intensity of 0 (1), 29 (2), 40 (3), 56 (4), and 72 kgs (5).

creases sharply with increasing annealing temperature, reaches a maximum with annealing at about 600C, and drops again with a further increase in annealing temperature (see Fig. 1). A specific "training" effect was observed in these experiments, i.e., a considerable, sometimes 100% increase of critical current density when current was repeatedly turned off and on. At all, and especially at high, magnetic field intensities, the critical current densities of the tested alloy annealed at 400—650C were generally higher than those of niobium alloy with 25% zirconium. Orig. art. has: 3 figures. [DV]

SUB CODE: 11, 20/ SUBM DATE: 21Apr65
ORIG REF: 002/ OTH REF: 004
ATD PRESS: 4246

Card 2/2

L 33991-66 IJP(c) CG

ACC NR: AP6025480 SOURCE CODE: CZ/0037/66/000/001/0027/0033

AUTHOR: Litomisky, Miroslav; Ruzicka, Jiri

ORG: Nuclear Research Institute, CSAV, Rez (Ustav jaderneho vyzkumu CSAV)

TITLE: Equipment for measuring superconducting properties of superconductors for strong magnetic fields

SOURCE: Ceskoslovensky casopis pro fysiku, no. 1, 1966, 27-33

TOPIC TAGS: strong magnetic field, conductor, superconductivity, measuring apparatus, electronic measurement, current density

ABSTRACT: The article describes equipment used for measurement of the critical current density of superconductors in a magnetic field at 4.2°K. Samples (wires or strips) can be measured on two different holders. The first is supplied with a current switch working in a helium bath so that during one experiment ten samples can be measured in constant fields up to 62 kG. In the second holder, three samples can be measured simultaneously in magnetic fields up to 83 kG. The results of some measurements are given. Orig. art. has: 7 figures. [Based on authors' Eng. abst.] [JPRS: 35,386]

SUB CODE: 14, 20 / SUBM DATE: 12Feb65 / ORIG REF: 001 / OTH REF: 002

Card 1/1

0477 0457

L 3(037-66 IJP(c)

ACC NR: AP6027364 SOURCE CODE: CZ/0037/65/000/004/0387/0388

AUTHOR: Litomisky, Miroslav; Ruzicka, Jiri

60
B

ORG: UJV CSAV, Rez

TITLE: Increase of field strength in a steadily operated solenoid

SOURCE: Ceskoslovensky casopis pro fysiku, no. 4, 1965, 387-388

TOPIC TAGS: solenoid, magnetic field intensity, superconducting alloy, nickel containing alloy, zinc containing alloy

ABSTRACT: This brief report describes equipment which permits obtaining a considerable increase in the intensity of the magnetic field, required in studying the superconductive properties of Ni-Zr alloys. [Orig. art. has: 3 figures. [JPRS: 32,945]

SUB CODE: 09, 20, 11 / SUBM DATE: 08Aug64 / ORIG REF: 001 / OTH REF: 001

Card 1/1 mlp

LITONSKI, A. SZCZYPA, W.

Organizacja produkcji w kopalni węgla kamiennego (Production organization in a pit coal mine), by A. Litonski, W. Szczypa. Reported in New Books, (Kowe Ksiazki), No. 6, March 15, 1956.

LITONSKI, Antoni; SKOLARSKI, Andrzej

Perspectives of technological progress in the Polich rock-salt mining. Przem chem 39 no.6:301-303 Je '60.

LITOWSKI, B.

Vapors from metallurgic works are a plague of the industrial region of Silesia. p. 111. (Hutnik, Vol. 24, No. 3, Mar 1957, Katowice, Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

KLEPACZKO, Janusz; LITONSKI, Jacek

The properties of materials under the conditions of cylindrical bending. Rozpr inz PAN 9 no.4:757-767 '61.

1. Zaklad Mechaniki Osrodkow Ciaglych, Instytut Podstawowych Problemow Techniki, Polska Akademia Nauk, Warszawa.

KLEPACZKO, J.; LITONSKI, J.; MARCINIAK, Z.

Cylindrical bending of sheet metal. Bul Ac Pol tech 12 no. 3: 157-163 '64.

1. Department of Mechanics of Continuous Media, Institute of Technical Problems, Polish Academy of Sciences, Warsaw. Presented by W. Olszak.

LITONSKI, Jacek; KLEPACZKO, Janusz

Influence of initial plastic extension on the young modulus of brass and low-carbon steel. Rozpr inz PAN 12 no.2:251-266 '64.

1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw.

LITOS, F.

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their Application. Food Processing Industry. H-28

Abs Jour : Ref Zhur - Khimiya, No 17, 1958, 59184

Author : Litos F Kozisek R, Fortova J

Inst :

Title : Concerning the Rapid Determination of Moisture, Fat and Salt in Meat Stuffs, Semi-Finished and Finished Products

Orig Pub : Prumysl potravin. 1957, 8, No 1, 46-49

Abstract : A comparative study was conducted of the methods of determining moisture in meat, sausage, and sausage products, in comparison with the method of drying at 106° with sand to a constant weight. Satisfactory results were provided by drying with infra red rays at 170-175° in a pan with a diameter of 6-6.5 cm.

Card 1/1

F. 4 1705

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application, Part 3. - Food Industry. H

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72372.

Author : F. Litos, R. Kosizek, J. Fortova.
Inst :
Title : Upon the Rapid Determination of Moisture, Fat and Salt in Meat Raw Materials, Semifinished and Finished Products.

Orig Pub: Prumysl potravin, 1957, 8, No 2, 89-92.

Abstract: The ground sample (about 10 g) is put into a Petri cup, which has been weighed in advance, dried 30 min. at 170 to 175°, and weighed with an accuracy to 0.01 g. The fat content is determined by extraction and weighing either fat, or the residue, or by the method based on the pre-

Card : 1/2

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application, Part 3. - Food Industry. H

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72372.

liminary decomposition of proteins by acids. In order to determine the salt content, a weighed sample (1 to 2 g) is drowned in 100 ml of water free of salt and stirred 30 min. with a glass rod, after which 1 to 2 ml of 5%-ual K_2CrO_4 solution is added and the mixture is titrated (at a temperature not above 40°) with 0.1 n. $AgNO_3$ solution until a reddish color, which does not vanish for half a minute, appears. See the foregoing report in RZhKHim, 1958, 59184.

Card : 2/2

LITOSH, A.I.

Resection of necrosed intestine through a pararectal incision in strangulated inguinal hernia. Khirurgiia no.2:69-70 F '55. (MLRA 8:5)

1. Likhoslavl'skaya raionnaya bol'nitsa Kalinskoy oblasti.
(HERNIA, INGUINAL, complications, strangulation, surg., pararectal resection of necrosed intestine)

LITOSH, A.I.

Surgical therapy of a hydrocele. Khirurgiia no.9:71 S '53.
(MLRA 6:11)

1. Iz Likhoslavl'skiy rayonnoy bol'nitsy. (Hydrocele)

LITOSH, KOZHISHEK

CZECHOSLOVAKIA / Chemical Technology. Food Industry. H

Abs Jour: Ref Zhur-Khimiya, No 22, 1958, 75635.

Author : ~~Litosh,~~ Kozhishek.
Inst : Not given.
Title : The Determination of Nitrites on Brines and Salting Mixtures.

Orig Pub: Prumysl potravin, 1958, 9, No 3, 141-142.

Abstract: Modern methods for determination of nitrites in brines and in mixtures for salting meat were examined. A simple method of titration with diazotization was suggested which gave accurate results even in the presence of large amounts of reducing sugars or nitrates. The method requires additional verification under the conditions of production.

Card 1/1

69

LITOSHENKO, A. K., TOLUBINSKIY, V. I., ORNATSKIY, A. P., and KICHIGAN, A. M. (All of Kiev polytechnical institute)

"Crises of heat exchange during boiling of water in very narrow annular channels".

Report presented at the Section on Heat Exchange During Change of Aggregate State, Scientific Session, Council of Acad. Sci. Ukr SSR on High Temperature Physics, Kiev, 2-4 April 1963.

Reported in Teplofizika Vysokikh temperatur, No. 2, Sep-Oct 1963, p. 321, JPRS 24,651. 19 May 1964.

L 27881-65

ACCESSION NR: AP5004213 S/0000/64/000/000/0010/0013

AUTHOR: Tolubinskiy, V. I. (Corresponding member AN UkrSSR); Ornatskiy, A. P. (Candidate of technical sciences); Kichigin, A. M.; Litoshenko, A. K. 14

TITLE: Heat exchange crisis for boiling in narrow annular channels B+1

SOURCE: AN UkrSSR. Institut tekhnicheskoy teplofiziki. Teplofizika i teplotekhnika (Thermophysics and heat engineering). Kiev, Naukova dumka, 1964, 10-13

TOPIC TAGS: boiling, heat exchange, heat exchange crisis, critical thermal load, heat transfer

ABSTRACT: The purpose of the investigation, performed at the Problem Laboratory of Kiyevskiy politekhnicheskiy institut (Kiev Polytechnik Institute) was to ascertain the dependence of the critical thermal load on the width of the annular gap, the weight velocity, the underheat, and the pressure. The tests were made in a closed loop made up of coaxial 1Kh18N9T steel tubes, each fed from a separate generator and cooled with distilled and degassed water. The parameters were: gap width -- 0.4, 0.6, and 1.0 mm; weight velocity -- 1960 to 7840 N/m^{2}sec; under-

Card 1/2

L 27881-65

ACCESSION NR: AT5004213

heat -- + 420 to - 420 kJ/kg; pressure -- 4.9, 9.8, and 14.7 MN/m^2. Unilateral and bilateral heating was used. The load was maintained constant on the inner tube at either 0.63 or 2.1 MW/m^2, while the heat load on the outer tube was varied smoothly until the heat-exchange crisis set in. This was assumed to occur when the tube turned red. The tests have shown that the critical heat load is practically independent of the underheat or the pressure if the weight velocity and gap width are constant. The critical heat load increases with increasing weight velocity. Other conditions being equal, the values of the critical heat load for unilateral and bilateral heating are practically the same. The critical heat load increases with increasing width of the annular gap. Orig. art. has: 3 figures and 4 formulas.

ASSOCIATION: Kiyevskiy ordena Lenina politekhnicheskiy institut (Kiev "Order of Lenin" Polytechnic Institute)

SUBMITTED: 10Aug64 ENCL: 00 SUB CODE: TD

NR REF SOV: 000 OTHER: 000

Card 2/2

LITOSHENKO, B.S.

Monospermous sugar beet. Sakh. prom. 32 no.2:60-61 F '58.
(MIRA 11:3)

1. Sovkhoz "Kollektivist."
(Sugar beets)

LITOSHENKO, B.S.

Monospermous sugar beet in Kursk Province. Sakh. prom. 33 no.4:57-58 Ap '59. (MIRA 12:6)

1. Sakhkombinat "Kollektivist."
(Kursk Province--Sugar beets)

LITOSHENKO, D.L.

Using a set of universal cams for lateral carriages of automatic turret lathes. Stan.i instr. 33 no.12:33-34 D '62. (MIRA 16:1)
(Cams) (Lathes)

3(2)
AUTHOR: Litoshko, N. N. SOV/6-59-10-11/21

TITLE: Representation of the Elements of Hydrography on Topographical Maps

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 10, pp 35-39 (USSR)

ABSTRACT: To give an exact representation of river sources on maps, topographer and editor must form a clear idea of the characteristic features of the river development. The feed is one of these features, according to which rivers may be divided into three principal groups: groups with permanent sources, with sources temporarily seeping away, and with sources of uncertain origin (as, for example, glaciers, swamps, etc.). The author gives some recommendations for the designation of these sources and the river courses themselves. River bends are to be exactly represented, and the width is to be determined at all places where the river is easily crossed. In addition, also the depth and the velocity of flow at these places should be entered. It is then recommended to show the condition of the river at the lowest height of the water

Card 1/2

level. The author finally presents some variations of reducing the water level to the lowest height and gives corresponding recommendations.

KOROTKOV, M.M., inzh.; LITOV, V.A., inzh.

Sport motorboat made of duraluminum. Sudostroenie 27 no.12:38-41 D '61. (MIRA 15:1)

(Motorboats) (Duralumin)

LITOV, Yu.N., student; KALYUZHNYUK, M.M., student

Electroosmosis in soil mixtures with varying content of clay particles. Sbor. trud. LIIZHT no.196:95-98 '62. (MIRA 16:9)

LITOV, Yu.N. (Leningrad)

Using polymers to accelerate the sinking of piles. Osn., fund. i mekh. grun. 7 no. 5 [illegible] 6 '65. (MIRA 18:10)

LITOVA, Ye.I.

KANEVSKIY, L. O.; LITOVA, Ye.I.

In memory of Z. P. Solov'ev; 75th anniversary of birth.
Med. sestra, Moskva no. 12:3-6 Dec. 1951 (CLML 21:3)

1. Biographical sketch.

BERG, S.L., polkovnik; VOROB'YEV, V.I., kapitan pervogo ranga; GIL'BO, G.M., kapitan pervogo ranga; ANANCHENKO, A.A.; BALAKSHINA, M.M.; BANNIKOV, B.S., kapitan vtorogo ranga; BAKHTINA, G.F.; BERENSHTAM, N.V.; BUTYRINA, N.Ya.; VOROB'YEV, V.I., kapitan pervogo ranga; GASS, I.P.; GINZBYSH, N.S.; GLADIN, D.F., polkovnik; GOLOVANOVA, L.G., kand. ist. nauk; GOLUBEVA, Z.D., kand. filol. nauk; GONCHAROVA, A.I.; ZANADVOROVA, R.N.; IVANOVA, N.G.; KARAMZIN, G.B.; KOVAL'CHUK, A.S.; KROMIDOVA, V.A.; LITOVA, Ye.I.; MOLCHANOVA, T.I.; OKUN', L.S.; POCHEBUT, A.N.; RAYTSES, V.I.; SAVINOVA, G.N.; SENICHKINA, T.I.; SKRYNNIKOV, R.G., kand. ist. nauk; FURAYEVA, I.I.; CHIZHOVA, N.N.; YASINSKAYA, L.F.; GLADIN, D.F., polkovnik; LABETSKIY, Ye.F., podpolkovnik; LEBEDEV, S.M., kapitan pervogo ranga; ORDYNSKIY, N.I., kapitan pervogo ranga; NADVODSKIY, V.Ye., podpolkovnik; DEMIN, L.A., inzh.-kontr-admiral, glav. red.; FRUMKIN, N.S., polkovnik, zam. otv. red.; LEVCHENKO, G.I., admiral, red.; BAKHTINA, G.F., tekhn. red.

[Naval atlas] Morskoi atlas. n.p. Izd. Glavnogo Shtaba Voenno-Morskogo Flota. Vol.3. [Naval history] Voenno-istoricheskii. Pt.1. [Text for the maps] Opisaniia k kartam. 1959. xxii, 1942 p. (MIRA 15:5)

1. Russia (1923- U.S.S.R.) Ministerstvo oborony. (Naval history)

LITOVAL'TSEV, Petr Fedorovich

ALEKSANDROV, Mikhail Tikhonovich; BLINOV, Aleksandr Aleksandrovich; LITOVAL'TSEV, Petr Fedorovich; YANISON, Tamara Aleksandrovna[deceased]; BORISHCHEVA, M.M., red.; CHICHERIN, A.N., tekhn.red.

[Preparatory operations and printing on four-page rotation machines] Podgotovitel'nye operatsii i pechatanie na chetyrekhlistnoi rotatsionnoi mashine. Moskva, Gos.izd-vo "Iskusstvo," 1957. 30 p. (MIRA 10:12)
(Printing)

LITOVCHENKO, A.A.

Wheat

Mixed winter-spring wheat in the Ukraine. Sel. i sem. 19, No. 6, 1952.

MONTHLY LIST OF RUSSIAN ACCESSIONS. Library of Congress, September 1952. UNCLASSIFIED.

LITOVCHENKO, A.F.

Source of rivers in the Trans-Ili Alatau. Trudy KazNIGMI no.18: 120-128 '63. (MIRA 17:4)

LITOVCHENKO, A. F.

Catastrophic mudflow inundation on the Issyk River. Meteor. i gidrol. no. 4:39-42 Ap '64. (MIRA 17:5)

1. Alma-Atinskaya selestokovaya stantsiya Upravleniya gidrometeorologicheskoy sluzhby KazSSSR.

LITOVCHENKO, A. G.

"Role of Tricotyledons in the Socialist Plant Industry,"

Dok. AN, 27, No.8, 1940; Dept. Plant Ind. Kharkov Agrie.

Inst., -1940-.

LITOVCHENKO, A.G.

PA 58165

USSR/Agriculture - Wheat
Medicine - Nutrition

Jan 1947

"The Critical Nutrition Period in Winter Wheat Crops," A. G. Litovchenko, 2½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1

Describes research which shows that in order to avoid destructive action during critical nutrition period, crop must be sown with large and carefully selected grain; and regulated nutrition system is necessary for biological requirements of plant. Submitted by Academician A. A. Rikhter, 3 Aug 1946.

58165

LITOVCHENKO, A. G.

"Importance of Large Size of Kernals in the Formation of Reserve Mode of Tillering and Overwintering of Plants," Dok. AN, 55, No. 2, 1947.

LITOVCHENKO, A.G.

Aquatic Plants

Cultivating Jesuit's nut (Trava natans L.) in bodies of water. Les. i step' 4, no. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, NOVEMBER 1952 ~~1953~~, Uncl.

24(7) SOV/48-23-9-49/57

AUTHORS: Litovchenko, G. D., Shipitsyn, S. A.

TITLE: The Spectrographic Determination of the Ratio of the Contents of Strontium and Calcium in Biological Objects

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 9, pp 1156 - 1157 (USSR)

ABSTRACT: In the introduction the frequent occurrence of Sr and Ca is pointed out and their similar distribution is explained by their approximately equal ionic radius, in consequence of which they are easily substituteable in crystal lattices. In the transition from the soil to the plants and from the plants to animal nature the Sr-content usually decreases compared to the Ca-content. The possibility of calculating the Sr-concentration in animal organs is then investigated, which is carried out with four coefficients characterizing the respective transition: K_1 - soil $\longrightarrow$ plant, K_2 - plant $\longrightarrow$ nourishment, K_3 - nourishment $\longrightarrow$ blood and K_4 - blood $\longrightarrow$ bones. By means of these four coefficients the Sr^{90}-content in bone is cal-

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culated according to the content in the soil. By means of spectral analysis samples of individual biological ranges were investigated with respect to the concentrations of Sr and Ca, in which connection, for the purpose of reducing the influence exercised by the principal components of the sample and increasing the reproducibility of results, a new spark-excitation of the spectrum of the pulverized samples was used, in which case the upper part of the electrode is of copper. This spark excitation is dealt with in detail and is supplemented by figure 2. In the same manner the discharge circuit and the recording of spectrograms is described. In the first part the absolute concentration of Sr and Ca are determined. The wave lengths of the investigated spectral lines are given together with the composition of the standards, the base material of which was common salt. The method employed in this case proved to be very sensitive. A calibration curve was constructed, from which the concentrations of the elements and their ratio was calculated. In the second part of this paper the coefficients were determined. Thus, a value of 0.35 to 0.95 was determined for K_1 for various kinds of soil

The Spectrographic Determination of the Ratio of the Contents of Strontium and Calcium in Biological Objects

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and plants, and the coefficients were found to depend on the absolute concentration of Sr and Ca and probably on a number of other causes. There are 1 figure and 2 Soviet references.

ASSOCIATION: Spektral'naya laboratoriya Irkutskogo gos. universiteta im. A. A. Zhdanova (Spectroscopic Laboratory of Irkutsk State University imeni A. A. Zhdanov)

Card 3/3

LITOVCHENKO, G.D.; SHIPITSYN, S.A.

Studying the transition of strontium and calcium in the biological cycle from soils into plants and animals. Zhur. ob. biol. 21 no.4: 297-300 Jl-Ag '60. (MIRA 13:7)

1. Spektral'naya laboratoriya Irkutskogo gosudarstvennogo universiteta.
(MINERALS IN SOIL) (PLANTS--CHEMICAL COMPOSITION)
(WATER--COMPOSITION)

IOGANSEN, A.V.; LITOVCHENKO, G.D.

Conjugation effect in the infrared spectra of nitro compounds. Dokl. AN SSSR 153 no.6:1367-1369 D '63.
(MIRA 17:1)

1. Gosudarstvennyy institut azotnoy promyshlennosti i produktov organicheskogo sinteza. Predstavleno akademikom A.N. Tereninym.

IOGANSEN, A.V.; LITOVCHENKO, G.D.

Effect of intermolecular and vibrational interactions on infrared absorption bands in nitrogoups. Opt. i spektr. 16 no. 4:700-702 Ap '64. (MIRA 17:5)

IOGANSEN, A.V.; LITOVCHENKO, G.D.

Characteristic bands of valence vibrations in infrared absorption spectra of the nitrogroup. Part 1: Experimental data and assignment of bands. Zhur. prikl. spekt. 2 no.3:243-260 Mr '65. (MIRA 18:6)

L 21161-65 EWT(m)/EP[illegible](j)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL/ASD(a)-5/SSD(t)/
ASD(t)/RAEM(a) WW/RM

ACCESSION NR: AP5003[illegible] S/0051/65/018/001/0038/0044

AUTHOR: Ioganzen, A. V.; Broun, E. V.; Litovchenko, G. D. 43

TITLE: Intensities of infrared absorption bands in gases and in solutions

SOURCE: Optika i spektroskopiya, v. 18, no. 1, 1965, 38-44

TOPIC TAGS: ir absorption, absorption band, ir intensity, absorption in gas, absorption in solution, absolute intensity

ABSTRACT: The authors first discuss the expected changes in the absolute intensity of absorption (A) in a gas-solution transition, due to the inter-molecular interaction, in a non-polar liquid. Calculations based on dielectric-polarization theories call for the absorption intensity to be 25--50% higher in the solution than in the gas. However, a comparison of the intensities does not bear out this conclusion, and the results indicate that as a rule the absolute intensities for the absorption of strong bands in non-polar solvents coincide with those in the gas. In addition to making the comparison with data by others, the authors also measured the absolute intensities for strong bands in vapors of volatile liquids, using a modified technique which they describe. The results

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ACCESSION NR: AP5003022

4

are compared for carbon tetrachloride, cyclohexane, carbon disulfide, nitrous oxide, chloroform, acetone, nitromethane and methyl formate. Orig. art. has: 3 figures, 2 tables, and 2 formulas.

ASSOCIATION: None

SUBMITTED: 09Aug63 ENCL: 00 SUB CODE: OP

NR REF SOV: 009 OTHER: 027

Card 2/2

Litovchenko, G.D.

PHASE I BOOK EXPLOITATION SOV/4159

Akademiya nauk SSSR. Komissiya po nauchnoy fotografii i kinematografii

Uspekhi nauchnoy fotografii, tom 7: Priroda fotograficheskoy chuvstvitel'nosti. Izgotovleniye galoidoserebryanykh fotograficheskikh sloyev. Opticheskaya sensibilizatsiya i gipersensibilizatsiya. Khimiko-fotograficheskaya obrabotka svetochuvstvitel'nykh sloyev (Nature of Photographic Sensitivity. Preparation of Haloid-Silver Photographic Layers. Optical Sensitizing and Hyper-Sensitizing. Chemical-Photographic Treatment of Photo-Sensitive Layers) Moscow, 1960. 260 p. Errata slip inserted. 1,800 copies printed.

Editorial Board: K.V. Chibisov (Resp. Ed.) Corresponding Member, Academy of Sciences USSR, V.I. Sheberstov (Deputy Resp. Ed.) Candidate of Chemical Sciences, Docent, Yu. N. Gorokhovskiy, Doctor of Chemical Sciences, Professor, G.A. Istomin, Doctor of Technical Sciences, Professor, and I.I. Levkoyev, Candidate of Chemical Sciences; Ed. of Publishing House: K.I. Markhilevich; Tech. Ed.: G.S. Simkina.

PURPOSE: This collection of articles is addressed to those working in theoretical and applied photography and cinematography, and to researchers in the chemistry and physics of photographic processes.

COVERAGE: The collection contains articles from the editorial files of the Zhurnal nauchnoy i prikladnoy fotografii i kinematografii discussing problems in the preparation and processing of haloid silver light-sensitive layers, the nature of photographic sensitivity, the preservability of photographic layers, the theory and technology of the preparation of photographic emulsions and optical sensitization, and, finally, the chemical photographic processing of black-and-white and color photographic materials. Many of the articles contain the results of scientific investigations made by the authors. The collection also includes several reviews of current problems in the theory of chemical-photographic processes. A bibliography of Soviet and non-Soviet references accompanies each article.

II. OPTICAL SENSITIZATION AND HYPERSENSITIZATION

Borin, A.V. Investigation of Concentration Effect During Optical Sensitization of Photographic Emulsions 185

Pokrovskaya, K.I. Investigation of Interaction of Merocyanines With Silver Ions in Solution 19..

Solov'yev, S.M. Hypersensitization of Infrachromatic Layers 201

Solov'yev, and N.M. Parfenova. Methods of Increasing the Stability of Hypersensitized Infrachromatic Films 210

III. CHEMICAL PHOTOGRAPHIC PROCESSING OF LIGHT SENSITIVE LAYERS

Bukin, Yu. I. (Deceased). Investigation of Local Effects in Development and Their Effect on the Quality of Moving Picture 219

Kirillov, N.I., A.M. Vyrtsekhovskaya, and N. Ye. Kirillova. Investigation of the Stability of Commercial Bleaching Solutions Used in NIKFI Processes 230

Kirillov, N.I., A.M. Vyrtsekhovskaya, and N. Ye. Kirillova. Utilization of Various Fixing Solutions in NIKFI Processes 236

Kirillov, N.I., A.M. Vyrtsekhovskaya, and N. Ye. Kirillova. Investigation of Thermostatic Aging of a Color Picture on a Multilayer Film Treated in Various Processes 240

Arnol'd, Ya. S. Problem of the Predevelopment of Multilayer Color Negatives 246

Litovchenko, G.D., and S.A. Shiptsyn. Problem of Storage of Developers 253

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LOGANSEN, A.V.; LITVINCHENKO, G.B.

Characteristic bands of valence vibrations of the nitro group in infrared absorption. Part 2. Correlation of frequencies and intensities with molecular structure. Zhur. prikl. spekt. 3 no. 6:538-547 D '65 (MIRA 19:1)

1. Submitted December 9, 1964.

BUSURIN, Ya.A., redaktor; YEMEL'YANOV, S.L., redaktor; YESAULOV, P.A., redaktor; KRYLOV, G.A., redaktor; LITOVCHENKO, G.P., redaktor; SOROKIN, A.M., redaktor; KLETCHENKO, A.V., redaktor; ROMANOVICH, Ye.F., redaktor; SUCHIK, Ye.V., redaktor; PAVLOVA, M.M., tekhnicheskiy redaktor

[For highly productive sheep breeding; materials of the All-Union Conference on Sheep Breeding, held in the Great Kremlin Palace in Moscow, November 14-18, 1955] Za vysokoproduktivnoe ovtsevodstvo; materialy Vsesoiuznogo soveshchaniia po ovtsevodstvu, proiskhodivshego v Moskve, v Bol'shom Kremlevskom dvortse 14-18 noiabria 1955 g. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 418 p. (MLRA 9:10)

1. Vsesoyuznoye soveshchaniye po ovtsevodstvu, Moscow, 1955. 2. Chlen kolegii Ministerstva sel'skogo khozyaystva SSSR (for Yesaulov). (Sheep breeding--Congresses)

LITOVCHENKO, G. R.

24186 LITOVCHENKO, G. R. Neotlozhnyye zadachi v razvitii tonkorunnogo i polugrubosherstnogo outsevodstva. Sov. zootekhniya, 1949, No. 3, S. 38-43.

SO: Letopis, No. 32, 1949.

LITOVCHENKO, G. R.

25141 LITOVCHENKO, G. R. Sozdanie Novoy Otechestvennoy Porody Tonkorunnykh Ovets-Adtayskoy. Sots. Zhivotnovodstvo, 1949, No 3. C. 41-48

SO: Letopis' No. 33, 1949

LITOVCHENKO, G. R.

25857. LITOVCHENKO, G. R. Kak byla sozdana altayskaga poroda ovets v soukhoze (Rubtsovskiy). Sov. zootekhniya, 1949, No. 4, S. 44-62.

So. Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

38224. LITOVCHENKO, G. R.

O vozraste pervogo pokrytiya tonkorunnykh yarok. Sov. zootekhniya, 1949, No 8, s. 56-65

LITOVCHENKO, G. R.

Technology

(Fine wool). Moskva, Gos. Izd-vo tekhnickhekio i ekonomicheskoi literatury po voprosam zagotovok, 1951.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED.

LITOVCHENKO, G.R.

LITOVCHENKO, G.R. Basic problems of sheep breeding. Moskva, Gos. izd-vo selkhoz, lit-ry, 1951. 99 p.

1. LITOVCHENKO, G. R.

2. USSR (60C)

4. Wool; Hybridization; Sheep

7. Taska and prospects of crossbreeding in raising productivity of sheep breeding. Sov zootech. 7 no 3, 1952 Laureat Stalinskoy Premii

9. Monthly List of Russian Accessions, Library of Congress, June 1952, Unclassified.

LITOVCHENKO, G. R.

Caspian Sea Region - Sheep

Outlook for the development of sheep raising in irrigated districts of the Lower Volga Valley and northern Caspian Sea area. Sov. zootekh. 7 no. 9, 1952.

Monthly List of Russian Accessions Library of Congress November 1952. UNCLASSIFIED

LITOVCHENKO, G., ZUBRIKOVA, E.

Sheep

Innovators in breeding fine-wooled sheep. Kolkh.proiz. 12 no. 5, 1952.

Monthly List of Russian Accessions, Library of Congress. November, 1952. UNCLASSIFIED.

1. LITOVCHENKO, G., ORAKVELIDZE, M.

2. USSR (600)

4. Collective Farms.

7. Competition between two collective farms of brotherly republics. Kolkh. proizv. 12, no. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

1. LITOVCHENKO, G. R.

2. USSR (600)

4. Sheep Breeding

7. Work results in breeding new native fine-wool sheep breeds. Trudy VIZH 20, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

LITOVCHENKO, G. R.

Voprosy ovtsevodstva Mongol'skoi Narodnoi Respubliki. /Questions of sheep breeding in the Mongolian People's Republic/. Moskva, Izd-vo Akad. nauk SSSR, 1953. 144 p

SO: Monthly List of Russian Accessions, Vol 6 No 8 November 1953

LITOVCHENKO, G. R.

7807. LITOVCHENKO, G. R.---Ovtsevodstvo. pod. A. V. Vasil'yeva i G. R. Litovchenko. Makhachkala, Dagknigoizdat, 1954. 292 s. s ill 21 sm. (Trekhletniye Kolkhoz. Agrozootekhn. Kursy. Vtoroy god obucheniya) 3.000 ekz. 4 r. 95 k. v. per.—Na avar. yaz. (55-2523) P 636.3 (02)

SO: Knizhnaya Letopis', Vol. 7, 1955

LITOVCHENKO, G. R.

7806. LITOVCHENKO, G. R.---(vcheb. posobiye dlya podgotovki masterov sel'skogo khozyaystva 11 letnyaya). Pod red. ... V. Vasil'yeva I g. R. Litovchenko. 3-ye izd.m ispr. i dop. M., Sel'khozgiz, 1955 280 s. s ill. 20 sm. (Trekhletniye Kolkhoz. Agrozootekhn. Kursy. Vtoroy god obucheniya). 25.000 ekz 4 r. 70 k. v per. (55-4310) 636.3 (02)

SO: Knizhnaya Letopis', Vol. 7, 1955

LITOVCHENKO,G.R., kandidat sel'skokhozyaystvennykh nauk

An Altai breed of fine-wooled sheep. Priroda 44 no.6:104-107 Je '55. (MLRA 8:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zhivotnovodstva.
(Altai Territory--Sheep)

LITOVCHENKO, G.K.

VASIL'YEV, A.V., doktor sel'skokhozyaystvennykh nauk, redaktor; LITOVCHENKO, G.K., kandidat sel'skokhozyaystvennykh nauk, redaktor; RABINA, N.G., redaktor; SOKOLOVA, N.N., tekhnicheskiy redaktor

[Sheep breeding] Ovtsevodstvo. Izd. 5-oe, ispr. i dop. Moskva, Gos. izd-vo sel'khoz. lit-ry. 1957. 295 p. (MLRA 10:10)
(Sheep)

ROGOZIN, G.M.; TSYNKOV, M.Yu., kand. sel'skokhozyaystvennykh nauk; LOBANOVA, A.A., kand. sel'skokhozyaystvennykh nauk; RUMYANTSEVA, T.V.; TRUKOLYUBOV, B.A., kand. sel'skokhozyaystvennykh nauk; KUDRYAVTSEV, P.N., doktor sel'skokhozyaystvennykh nauk; LITOVCHENKO, G.R., kand. sel'skokhozyaystvennykh nauk; KOLOBOV, G.M.; IOFE, M.Sh.; KHITRNKOV, G.G., doktor sel'skokhozyaystvennykh nauk; BADIR'YAN, G.G., doktor sel'skokhozyaystvennykh nauk; IVANOVA, A.A.; MAKAROV, A.P.; ALTAYSKIY, I.P.; SPIRIDONOV, A.I., kand. sel'skokhozyaystvennykh nauk; ZHUYKOV, G.G.; BANNIKOV, N.A., red.; IVANOVA, A.N., red.; ZUBRILINA, Z.P., tekhn. red.

[Economics and organization of stockbreeding on collective farms] Ekonomika i organizatsiia zhivotnovodstva v kolkhozakh. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1958. 550 p. (MIRA 11:7)
(Stock and stockbreeding)

LITOVCHENKO G. R.

USSR / Farm Animals. Small Horned Stock. Q-2

Abs Jour: Ref Zhur-Biol., No 23, 1958, 105641.

Author : Litovchenko, G. R.
Inst : Not given.
Title : Certain Problems of Pedigree Work in Sheep Breeding (for Discussion).

Orig Pub: Ovtsevodstvo, 1958, No.4, 15-20.

Abstract: The requirements for the approval of new breeds are described. The increase of wool production can be achieved by the development of fine-wool and semi-fine-wool sheep breeding in new districts where it is expedient to produce new breeds, which dispenses with the need of preserving the unity of old breeds. For the successful development of a breed, in its structure there should be several pedigreed flocks, bred-

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30(1) SOV/25-59-4-14/44

AUTHOR: Litovchenko, G.R., Candidate of Agricultural Sciences, Honored Live-stock Specialist of the RSFSR

TITLE: The Golden Fleece (Zolotoye runo)

PERIODICAL: Nauka i zhizn', 1959, Nr 4, pp 33-36 (USSR)

ABSTRACT: The author describes recent developments in USSR sheep breeding. One of the main problems consists in increasing the number of fine-fleeced sheep which, however, can only be bred in favorable climatic conditions. Soviet scientists solved the problem by crossing the local coarse-fleeced sheep with a highly productive fine-fleeced variety and obtained a hybrid having - in most cases - a fine fleece, which is today successfully bred in Kazakhstan, West Siberia, the Urals and Volga regions. During the past 30 years, 15 new breeds have been developed in the USSR. Leading breeding sovkhozes received 7-8 kg wool of the Groznyy and Stavropol' breed on the average, and up to 23 kg from the best sheep. Another problem is to make better use of rams, e.g. by artificial insemination. In 1957, more than 17,000 sheep were fertilized by the semen of one ram. In the Vsesoyuznyy in-

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stitut zhivotnovodstva (All-Union Institute of Cattle Raising) artificial insemination was successfully carried out under the direction of Academician V.K. Milovanov, using semen kept for a long time in a temperature of 170° below zero. Another method is to dry the semen and keep it in powder form. The results of tests carried out in this direction hold good prospects for the future. In order to increase the fertility of ewes, a blood serum of mares in foal has been successfully applied for stimulating the formation of additional ovules. Furthermore, fodder and maintenance condition influence breeding to a large extent. By using radioactive isotopes the Akademiya nauk SSSR (AS USSR) and the All-Union Institute of Cattle Raising, are engaged in research on the histologic structure of the skin of various sheep varieties and in this connection on the quality and quantity of wool. There are 5 photos and 1 chart.

LUK'YANENKO, P.P., akademik (Krasnodar); CHERNENKO, S.F., prof. (Michurinsk); LITOVCHENKO, G.R., knad. sel'skokhozyaystvennykh nauk; KOREN'KOV, V.A.; SELIVANOV, A.I., prof.; CHERNIGOVSKIY, V.N.; DUBROVSKIY, A.A.; BAKHTADZE, K.Ye., akademik (Stantsiya Chakva)

Great strides of Soviet science. IUn. nat. no.11:3, 27, 31, 33, 35-36 O '62. (MIRA 16:5)

1. Chleny-korrespondenty Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni Lenina (for Koren'kov, Slivanov). 2. Deystvitel'nyy chlen Akademii nauk SSSR (for Chernigovskiy). 3. Rukovoditel' laboratorii Vsesoyuznogo nauchno-issledovatel'skogo instituta mekhanizatsii sel'skogo khozyaystva (for Dubrovskiy).
(Science news)

YEGAULOVA, P.A., kand. sel'khoz.nauk, red.; LITOVCHENKO, G.R., doktor sel'khoz. nauk, red.; GROMOVA, A.V., red.; PROKOF'YEVA, L.N., tekhn. red.; BALLOD, A.I., tekhn. red.

[Sheep farming] Ovtsevodstvo. Moskva, Sel'khozizdat, 1963. 719 p. (MIRA 16:12)

(Sheep)

KLIMOV, N.M.; BUTRIMENKO, V.P.; VSYAKIKH, A.S., prof.; LITOVCHENKO, G.R.; KOLOBOV, G.M.; KOZHEVNIKOV, Ye.V.; ALIKAYEV, V.A.; KRASNOV, V.S.; MAKAROV, A.P.; GRIGOR'YEV, Ye.P., red.; MOZIN, M.A., red.; GUREVICH, M.M., tekhn. red.

[Animal husbandry] Zhivotnovodstvo. Moskva, Sel'khozgiz, 1959. 477 p. (MIRA 16:3)
(Stock and stockbreeding)

S/103/60/021/008/003/014
B012/B063

AUTHOR: Litovchenko, I. A. (Moscow)

TITLE: A Problem of Optimum Control

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 8, pp. 1122-1133

TEXT: In the present paper, a variation problem is to be solved for a general case. Equations (1.1) are written down for the motion of a point A (center of mass of a controlled body) which approaches the target B (another body) according to the law of proportional approach. Next, the optimization of this process is studied. The control function depends on the position of the "rudder" and is given at the section of the numerical axis. The author makes use of B. V. Shirokorad's criterion for the optimum control and of A. Miele's method of parametrical representation of the control function (t) (Refs. 2 and 3). This method makes it possible to reduce this problem to the problem of the Mayyer type and to use the methods of classical calculus of variations. The set of equations (1.1) is transformed into (1.2), and the variation problem of the Mayyer type (Ref. 9) is formulated in the following manner: For the class of the functions

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$x_1(t)$, $x_2(t)$, $x_3(t)$, $p(t)$, which satisfy the equations of motion (1.2) and the boundary conditions (1.3), it is necessary to determine such a system of functions as would minimize $x_1^{(2)} - x_1^{(1)}$. The solution is obtained from the class of piecewise smooth functions x_1, x_2 and x_3. The $p(t)$ functions may be unsteady in the first order. First, the author studies a special case for he assumes that $|_c - x_1|$ and $|x_2 - x_1|$ be very small, as is frequently the case in practice. c is the angle of the trajectory of the target B. The variation problem of the Mayyer type is formulated for this special case, the Lagrangian is introduced, and the Euler equations (2.5) are written down. The last of these equations shows that the optimum trajectory, if there is any, may be composed of three branches. It is shown that the branch = 1 is an optimum, i.e., it yields $|x_1^{(2)} - x_1^{(1)}|$. The time $t^{(2)}$ of entrance into the pursuit triangle is studied for an optimum control with = 1, after which the general case is examined. Proceeding from equations (1.2) and the general variation problem, the solution is found in the same way as in the special case. It is shown that the trajectory = 1

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A Problem of Optimum Control

S/103/60/021/008/003/014
B012/B063

is really an optimum. B. V. Shirokorad and A. M. Letov are thanked for having suggested this subject and for their interest in this work. There are 5 figures and 10 references: 7 Soviet and 2 US.

SUBMITTED: December 16, 1959

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Litovchenko, I. A.

S/103/60/021/009/013/015
B012/B063

AUTHORS: Gadzhiyev, M. Yu., Gol'ko, F. D., Dzhelyalov, A. R., Dulnikov, Ye. Ye., Kazakov, V. D., Litovchenko, I. A., Morzin, A. B., Prokhorov, N. L.

TITLE: Seventh Scientific and Technical Conference of Young Scientists of the Institute of Automation and Telemechanics of the AS USSR

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 9, pp. 1326-1331

TEXT: The sed'maya nauchno-tekhnicheskaya konferentsiya molodykh uchenykh IAT AN SSSR po voprosam avtomaticheskogo upravleniya (Seventh Scientific and Technical Conference of Young Scientists of the Institute of Automation and Telemechanics of the IAT AS USSR), held from March 14 to 16, 1960, dealt with problems of automatic control. It was attended by more than 400 persons, among them about 200 representatives of various organizations in Moscow and the Moscow oblast', who discussed research work carried out by young scientists in 1959. 75 lectures were delivered. The

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Conference was opened by Academician V. A. Trapeznikov, Director of the Institute of Automation and Telemechanics. Professor M. A. Ayzerman, Doctor of Technical Sciences, spoke about "Scientific Problems of the Theory of Finite Automatic Machines (konechnyy avtomat)". At the final plenary meeting, Ye. V. Voloshina and Ye. V. Shtil'man gave a report on the "Simulation of Teaching Processes". The following sections worked between the two plenary meetings: 1) for automatic control with sub-sections for the theory of automatic control and automatic control systems; 2) for automatic checking; 3) for computers; 4) for elements and installations in automation and telemechanics; 5) for statistical methods in automation; 6) for the theory of relay circuits and finite automatic machines (konechnyy avtomat); 7) for automatic electric drive. The following lectures were delivered at the first sub-section of the first section: V. N. Novosel'tsev reported on the determination of the formula for optimal control of relay-pulse systems of second order for the case of pure relay control and for the case of relay control in the presence of an insensitive range. I. S. Morosanov spoke about the effect of fluctuations on extremal relay systems in the self-oscillating state.

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The author showed that the methods of calculating statistical transfer coefficients in the form suggested by I. Ye. Kazakov cannot be employed in this case. V. G. Gradetskiy and Yu. I. Ostrovskiy gave a report on "The Operation of Extremal Control Systems in Which the Extreme Value of Noise Is Memorized". N. V. Grishko gave the results of the determination of optimal characteristics of an extremal system under random actions. T. G. Baburashvili spoke about the investigation of the state of a control system having a servo-motor with a non-linear characteristic of speed and a strong feedback. He mentioned Kh. Masser. A. I. Morozov reported on a "Qualitative Study of Differential Equations Obtained When Solving a Problem of Synthesis" and explained A. M. Letov's method of synthesizing control systems. M. N. Simkin spoke about the determination of periodic modes of operation of pulse systems. R. P. Parsheva investigated the problem of stability according to Lagrange in the case of transient modes of operation of five-dimensional automatic, non-linear control system. V. A. Kislyakov spoke about "Longitudinal Stability of an Air-plane With a Delayed Autopilot". He mentioned a method of asymptotic approximations devised by N. M. Krylov and N. N. Bogolyubov. B. Ye. Chuprun reported

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Seventh Scientific and Technical Conference of Young Scientists of the Institute of Automation and Telemechanics of the AS USSR

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on "The Formulation of the Law of Controlling Linear, Stable Objects, Guaranteeing Least Displacement of the Controller". The following lectures were delivered at the second sub-section of the first section: B. B. Buyanov reported on the application of the theory of optimal quick-acting systems for controlling the drive of flying scissors of a rolling mill. P. G. Volik spoke about an automatic optimizer with two channels and two limitations, which is used to determine the extreme value immediately on an object of large inertia. I. N. Bocharov reported on an instrument recording distribution curves of any size. Ye. A. Rateyeva spoke about a three-channel optimizer for chemical production. V. G. Sholckhov gave an experimental proof of the convergence of the tuning of noise generators. K. B. Norkin's lecture dealt with the automatic tuning of the output cascade of a transmitter with the aid of a system of automatic scanning. V. N. Shadrin described a program-control system with frequency division of its channels. Y. V. Karibskiy and A. P. Yevseyeva's reports contained data on a universal interpolator for digital program-control systems and data on the automatic selection of the interpolation sections on machine tools with a linear interpolator. M. I. Tayts described the test sample

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of an apparatus for automatic programming. B. N. Andreychikov spoke about the dynamic accuracy of machine tools with program control. M. M. Khasanov's report dealt with the dynamic characteristics of air conditioners. The following lectures were held at the second section: M. V. Rybashov and K. M. Pontsenko explained several circuits for the dynamic correction of transmitters. V. S. Ilknominskiy spoke about "A Capacitive Measuring Apparatus in Systems of Digital Program Control of Manufacturing Processes". M. A. Prusov gave a report on the principles of designing and constructing an instrument for measuring the temperature of rotating parts. Yu. V. Gushchin spoke about the possibility of using crystal layers of semiconductors on cadmium-sulfide backings for the indication of radioactive radiation. A. A. Kmizakov spoke about the possibility of using radioisotopes and the methods of nuclear spectroscopy for automatic checking of the metal content of alloys and concentration products of ores of non-ferrous metals. V. A. Viktorov reported on the effect of higher harmonics in coaxial vibrators upon the operation of an extremal endovibrator level-meter. The following lectures were held at the third section: A. G. Butkovskiy - "Simulation of Some Objects With Distributed Parameters"; A. V. Shileyko -

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"The Method of Synthesizing the Optimal Construction of a Digital Simulator"; R. N. Chernyshev - "Computing Amplifier With a Power Stage at the Output"; D. A. Pereverzev - "Combined Electromechanical Block of an Electric Simulator"; F. E. Gulyaev - "Quick-acting Electron Multipliers". Zh. A. Novosel'tseva spoke about "A Block for Controlled Delay"; K. B. Norkin - "A Method of Automatic Determination of the Extreme Value of a Multi-variable Function". V. A. Yakovlev - "Discrete Electric Differentiator". V. A. Brik - "Digital Computer for Compiling Programs for Machining Workpieces on a Milling Machine". The following lectures were held at the fourth section: Ye. A. Andreyeva spoke about a method of calculating the consumption and power characteristics of the "nozzle-flap" element in the case of a viscous, compressible and incompressible liquid. L. A. Tenenbaum derived formulas for the consumption and power characteristics of the "nozzle-flap" element in the case of a non-stabilized laminar flow of a viscous, incompressible liquid. T. K. Yefremova reported on pneumatic relay elements. V. S. Matorina spoke about "Magnetic Amplifiers at the Output of Alternating-current Magnets". M. A. Boyarchenkov - "Direct-current Reversible Magnetic Amplifier With Increased Efficiency" and "Action of a Magnetic Amplifier on a Counterelectromotive Force" (second

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lecture). N. I. Prokhorov gave a report on the existing memory circuits of magnetic, logical elements from the viewpoint of continuity. A. L. [illegible] - "[illegible]". [illegible] - "Contactless Program Computer for the Automatic Operation of a Line Casting Machine". V. S. Serzhere' report dealt with the possibility of constructing circuits for proportional amplifiers, differentiators, and integrators of commercial controllers with the help of semiconductor elements. V. B. Gogolevskiy reported on transients in electromagnetic mechanisms and on the vibration of contacts. The following lectures were delivered at the fifth section: L. P. Sysoyev solved the problem of judging the parameters and detecting the signals which are linearly dependent on random parameters. M. Yu. Gadzhiyev reported on the determination of an intelligence signal mixed with a noise in the case of an independent variation of the carrier frequencies. I. I. Paishev studied an apparatus of continuous and discrete mode of operation, which is used to expand a random function in a canonical series. K. L. Kappel'baum described an optimal operator used to determine an intelligence signal on the background of normal noise with random dispersion. A. I. Teyman spoke about problems connected with the

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overshooting of random functions. Ye. S. Kochetkov explained the construction of theoretitally and practically optimal, linear integral estimates of the expected value of the correlation function of steady random processes. [illegible]'s lecture dealt with the effec. of random noise upon the operation of extremal control systems of the step- and gradient-types. V. K. Paykovskiy spoke about the determination of the transmissivity of a channel with discrete difference modulation in the absence of noise. V. M. Pomazan gave a report on the theoretical and experimental study of time systems in remote measurement with different cycles and different kinds of indication. The following lectures were held at the sixth section: V. D. Kazakov - "The Form of Minimum Symmetric Boolean Functions With Any Number of Variables". V. P. Didenko explained a digital method of minimizing Boolean functions in consideration of the unused state. V. V. Vorzheva gave a survey of investigations of circuits with real contacts. T. M. Aleksandridi spoke about the synthesis of switching schemes on the basis of two logical operations - the Scheffer stroke and its dual function. L. A. Guzev reported on "The Minimization of the Construction of Finite Automatic Machines (konechnyy avtomat)".

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O. P. Kuznetsov described logical networks with unequal delay times of the various elements. V. D. Kazakov and V. V. Nauzchenko spoke about "The Realization of Boolean Functions With n Variables on Contactless Logical Switches by Means of the Method of Supplement to a Definition". A. D. Talantsev reported on "The Application of Logic-algebraical Transient Operators in the Analysis and Synthesis of Finite Automatic Machines (konechnyy avtomat) of a Special Type". The following lectures were held at the seventh section: O. I. Khasnayev - "The Operation of an Asynchronous Motor of a Frequency Transformer With Semiconductor Triodes". V. M. Kolesnikov - "Investigation of Thyratron Pulse Drive With a Step-by-step Motor". V. D. Vershinin - "Application of the Principle of Invariance for the Stabilization of the Speed of Direct-current Motors". O. A. Kossov - "Direct-current Drive With a Semiconductor Pulse Rectifier". Chzhao Chzhou-lun' - "Optimal Control of Flying Drum Scissors With Eccentrics". A. R. Dzhelyalov - "Induction Motor With Longitudinal and Transverse Excitation as an Object of Automatic Control".

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D201/D305

16,8000(1103, 1031, 1132)

AUTHOR: Litovchenko, I. A. (Moscow)

TITLE: The isoperimetric problem of analytical design

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 12, 1961, 1553-1559

TEXT: The author attempts to explain the effect of integral coordinate and controller velocity limitations on the structure of an optimum regulator minimizing the integral quadratic error of the system. The isoperimetric variational problem is presented as the motion of a certain class of closed-loop control systems described by the set of differential equations

$$g_k \equiv \dot{\eta}_k - \left(\sum_{\alpha} b_k \eta_\alpha + m_k \xi \right) = 0 \qquad (1)$$

where $b_{k\alpha}$ and m_k are constants, η_k = phase coordinates; ξ = the con-

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The isoperimetric problem ...

troller coordinates subjected to the isoperimetric condition

$$\int_0^\infty \xi^2 dt = \varkappa_1 \qquad (2)$$

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It is shown that condition (2) puts on the variation of phase coordinates of an unstable object limitation

$$|\eta_0| \leqslant m \sqrt{\frac{\varkappa_1}{2b}} = B_1 \qquad (12)$$

Here $\eta_0 = \eta(0)$; ξ and η satisfying a closed system of equations

$$\dot{\eta} = b\eta + m\xi, \quad \dot{\xi} = \frac{ma}{\lambda}\eta - b\xi \qquad (9)$$

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The isoperimetric problem ...

These limitations determine the region of those initial values, for which the isoperimetric problem has a solution. A similar case for a system of the n-th order is extremely complex and it is possible only to assume that from the physical point of view, and in this case with instability, limitations of type (12) are also valid. Thus with the isoperimetric condition of (2) the control of ξ depends on η_i and η_{io} $(i = 1, \ldots, n)$. If another condition

$$|\xi| \leqslant \bar{\xi} \tag{13}$$

of the saturation type is added to the isoperimetric condition (2) the following results are obtained: 1) If the initial system variations satisfy

$$\left| \sum_{1}^{n} p_i \eta_{io} \right| \leqslant \bar{\xi} \tag{14}$$

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then the shape of the optimum phase locus is determined only by the condition (2), since if (14) is satisfied, the locus never reaches the boundary equation $|\xi| = \bar{\xi}$. 2) If the condition (2) does not apply, then the optimum locus should include boundary regions, for which $|\xi| = \bar{\xi}$. The optimum locus is understood to be the one which satisfies only the necessary conditions of optimum. The author expresses his gratitude to A. M. Letov for his assistance. There are 2 figures and 5 Soviet-bloc references.

SUBMITTED: March 16, 1961

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LITOVCHENKO, I.A. (Moskva)

Concerning the isoperimetric problem of analytical design. Avtom. i telem. 22 no.12:1553-1559 D '61. (MIRA 14:12)
(Automatic control)

L 29133-66 EWP(k)/EWP(h)/EWT(d)/EWP(l)/EWP(v) BC

ACC NR: AP6018687 SOURCE CODE: UR/0103/65/026/008/1313/1323

AUTHOR: Litovchenko, I. A. (Moscow)

ORG: none

TITLE: Optimization of systems subject to step control constraints

SOURCE: Avtomatika i telemekhanika, v. 26, no. 8, 1965, 1313-1323

TOPIC TAGS: automatic control, automatic control technology

ABSTRACT: The article introduces a new type of control constraint, called a "step" constraint, which has a physical sense and takes the form

$$\|u\| \leqslant L_j, \quad t \in (t_j, t_{j+1}), \quad j = j_1, j_2;$$

$$j_1 = 0, 1, 2, \ldots, \lim_{t \to \infty} t_j = +\infty, \text{ in one case,}$$

$$j_2 = 0, 1, 2, \ldots, m, \quad 0 \leqslant m < +\infty, \text{ in another case.}$$

Pontryagin's principle of the maximum is used to elucidate some peculiarities which are introduced into optimization problems by this type of constraint when L_j, t_j, $j = j_1, j_2$ are fixed. The case of step constraints with mobile levels and boundaries is considered separately. An example is given. The author thanks B. S. Razumikhin for his information. The author also thanks A. M. Letov for his undivided attention in this work and for his useful discussions. Orig. art. has: 5 figures and 31 formulas. [JPRS]

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ZAVALISHIN, N.I., prof.; LIDOV, I.P., dots.; LITOVCHENKO, I.G.; MESHKOV, V.V., dots.; MOBIL'NITSKIY, M.B., kand. med. nauk; ARTEM'YEV, S.G., red.; BUL'DYAYEV, N.A., tekhn. red.

[Organizational principles in providing medical care for troops] Osnovy organizatsii meditsinskogo obespecheniia voisk. Moskva, Medgiz, 1961. 219 p. (MIRA 15:2)
(RUSSIA—ARMY—MEDICAL CARE)

BALABUKHA, P.P., mayor meditsinskoy sluzhby; LITOVCHENKO, I.G., podpolkovnik meditsinskoy sluzhby

Organization of first aid for wounded and other combat casualties, their collection, evacuation, and transport from the battlefield during attack. Voen.-med. zhur. no.4:18-22 Ap '61. (MIRA 15:6)

(MEDICINE, MILITARY)

LIPKIN, D.S.; LITOVCHENKO, I.L.

Reconditioning inoperative heating flues. Koks i khim. no.7 :35-38 '56. (MLR 9:7)

1.Teplotekhstantsiya.
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LITOVCHENKO, L.F.

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Effect of iron inclusion on corrosion of magnesium and its alloying with aluminum. Trudy MATI no.23:122-151 '54. (MLRA 8:11)
(Magnesium alloys) (Corrosion and anticorrosives)

LITOVCHENKO, M. K., Candidate Biol Sci (diss) -- "The biological principles of cultivating cotton on the meadow-swamp and meadow soils of the valley of the middle course of the Zeravshan River". Samarkand, 1959. 20 pp (Min Higher Educ USSR, Uzbek State U im Alisher Navoi), 150 copies (KL, No 25, 1959, 130)

MOMOT, Ya. G.; SOROCHENKOV, A.F.; LITOVCHENKO, M.K.; SAFAROV, T.S.; BEGLYAROVA, L.S.

"Plant breeding" by N. A. Maisurian. Reviewed by IA. G. Momot and others. Zemledelie 23 no.6:94-95 Je '61. (MIRA 14:6)

1. Kafedra rasteniyevodstva Samarkandskogo sel'skokhozyaystvennogo instituta.

(Field crops)
(Maisurian, N.A.)