L 60253-65 EPA(s)-2/EWP(k)/EWA(c)/EWT(m)/EWP(b)/T/EWA(d)/EWP(w / WP(v)/EWP t)
Pf-4 IJP(c) JD/HM/GS

ACCESSION NR: AT5017709 UR/0000/65/000/000/0222/0236

AUTHORS: Nikolayev, G. A.; Vinokurov, V. A.; Kurkin, S. A.; Gazaryan, A. S.; Sagalevich, V.

TITLE: Residual stresses and deformations of welded structures

SOURCE: AN UkrSSR. Institut elektrosvarki. Proyektirovaniye svarnykh konstruktsii (Design of welded structures). Kiev, Naukova dumka, 1965, 222-236

TOPIC TAGS: welding technology, steel, residual stress, titanium, tempering, welded structure, residual deformation, nonferrous metal alloy, plastic property

ABSTRACT: Residual deformation, stresses, and associated subjects related to the strength of welded structures are discussed. The process of the formation of residual stresses in joints of different metals when welded from very thick elements was investigated for the causes of the formation of brittle fractures in welds, and ways to eliminate these fractures are proposed. The physical and mechanical properties of the materials were found to have a major effect on the residual stresses and deformations. It was found experimentally that residual stresses are directed along the weld ($\sigma = \sigma_T$) only in some steels but not in nonferrous alloys and titanium. A comparison was made of the stresses and deformations resulting

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in various types of steels welded by several techniques. The deformation and stresses can be regulated by processing techniques, and particularly by the use of appropriate pressures. Residual stresses were found to be little affected by the newest welding techniques using electron beam, ultrasonic waves, diffusion, etc. In very thick members the residual [illegible] has a unique character and is defined by complex time-temperature [illegible] contributing components. Two theoretical-experimental methods were developed for calculating the three-axis time-temperature field and residual stresses. In the first, the weld was cut parallel to the weld axis into strips 10-15 mm wide, and the changes in the length and thickness of these strips were determined. In the second method a hole was bored, the stresses were measured, and the deformation was determined. The stresses in thick members were found to be nonuniformly distributed. Investigation of the brittle strength of the weld and in structural elements should be conducted along three lines: 1) determination of the reasons for the formation of brittle fractures in the sample by tear studies; 2. studies [illegible] formation from aging and [illegible]. Orig. art. has: [illegible] figures and 2 tables.

L 60253-65

ACCESSION NR: AT5017709

ASSOCIATION: MVTU im. Baumana (MVTU)

SUBMITTED: 13Jan65 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 006 OTHER: 002

Card 3/3

L 62240-65 EWT(d) IJP(c)

ACCESSION NR: AP5021247 UR/0293/65/003/004/0534/0539
629.191:518.61

AUTHOR: Vinokurov, V. A.; Ivanov, Yu. N. 55 65

TITLE: Generalized Newton method for solving boundary-value problems

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 4, 1965, 534-539

TOPIC TAGS: boundary value problem, Newton method, generalized Newton method, steepest descent method

ABSTRACT: For solving boundary-value problems for ordinary differential equations, a method synthesizing two methods of the functional analysis—the Newton method and the method of steepest descent—is presented. The latter [illegible] method [illegible] the [illegible] parameter, the convergence of the calculation process can be ensured and the time required for calculation can be shortened. An algorithm is presented for [illegible] problem

$$\ddot{x} = f(x, \dot{x}, t), \quad x(0) = x_0, \quad x(T) = x_1 \qquad (1)$$

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L 62240-65

ACCESSION NR: AP5021247

and its peculiarities are analyzed. It is indicated that the proposed method can be [illegible] as well as to systems of equations. To illustrate the rate of convergence of the pro- [illegible] compare it with other methods, the solution of the boundary- [illegible]

ASSOCIATION: [illegible]

SUBMITTED: 18Dec64 ENCL: 00 SUB CODE: MA

NO REF SOV: 005 OTHER: 002 ATD PRESS: 4075

Card 2/2 [illegible]

VINOKUROV, V.A., doktor tekhn.nauk; GOLGOFSKIY, F.I., inzh.; DANILOV, G.I., inzh.; KOMOV, V.V., inzh.

Electric machinery with evaporating and universal cooling systems for aircraft. Elektrotekhnika 36 no.1:5-7 Ja '65. (MIRA 18:3)

AUTHORS: Kurkin, S. A.; Luk'yanov, V. F.; Vinokurov, V. A.; Gubanov, Yu. N.; Parakhin, V. N.

TITLE: Apparatus for testing thin sheet metal and welded joints. Class 42, No. 169849

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. [illegible], 1965, 122

TOPIC TAGS: sheet metal, welding, evaluation, test method, hydraulic pressure, internal stress

ABSTRACT: This Author Certificate presents an apparatus for testing thin sheet metal and welded joints after [illegible]. The apparatus uses the method of applying pressure [illegible] evaluating internal [illegible]

Card 1/2

L 42050-65

ACCESSION NR: AP5010940

ASSOCIATION: none

SUBMITTED: 08Jan64 ENCL: 00 SUB CODE: IE

NO REF SOV: 000 OTHER: 000

Card 2/2

ACCESSION NR: AP3000498 S/0145/63/000/001/0157/0161

AUTHOR: Vinokurov, V. A. (Candidate of technical sciences, docent)

TITLE: Stress relaxation in welded construction made from thick sections

SOURCE: Izv. VUZ: Mashinostroyeniye, no. 1, 1963, 157-161

TOPIC TAGS: stress relaxation, welding residual stress, welding seam annealing, relaxation time, thick section welding

ABSTRACT: A procedure for finding the relaxation time in welds with a three-dimensional residual stress distribution is presented in order to calculate more accurately the annealing time for welded joints with thick cross sections. The stresses were assumed in the form

$$\sigma_{x_0} = \sigma_{z_0} = 0{,}5\sigma\left(\cos\frac{2\pi}{\delta}z + 1\right),$$

$$\sigma_{y_0} = \sigma\cos\frac{2\pi}{\delta}z.$$

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ACCESSION NR: AP3000498

After assuming that planes crossing the y-axis remain flat and do not move (and using the equilibrium relations) the stresses in the center of the weld were calculated as follows (c = o):

$$\sigma_z = -\int_{\delta/2}^{z} \lambda \frac{\partial \sigma_{z_o}}{\partial z} dz.$$

$$\sigma_x = \lambda(\sigma_{x_o} - \sigma_{z_o}) + \sigma_z,$$

$$\sigma_y = \lambda(\sigma_{y_o} - \sigma_{z_o}) + \sigma_z.$$

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ACCESSION NR: AP3000498

(where δ is the thickness of the weld). If in addition the relaxation curves of stress versus time for a certain annealing temperature (and material) are available, a time plot of the three-dimensional stresses can be constructed. Although these relaxation curves are easily obtained only for the simplest geometrical shapes, they are nevertheless of importance. A comparison was plotted between a weld with only one-dimensional stress and a weld with the stress distribution given above. It was found that the stress in the center of the weld relaxes much more slowly for the three-dimensional case. Orig. art. has: 5 figures and 14 formulas.

ASSOCIATION: MVTU im. N. E. Baumana (MVTU)

SUBMITTED: 04Jul62 DATE ACQ: 21Jun63 ENCL: 00

SUB CODE: ML, MA NO REF SOV: 002 OTHER: 000

Card 3/3

VINOKUROV, V.A., kand.tekhn.nauk, dotsent

Stress relaxation in welded structures made of very thick components. Izv.vys.ucheb.zav.;mashinostr.no.1:157-161 '63. (MIRA 16:5)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche imeni Baumana.
(Strains and stresses)

PARAKHIN, V.A., kand. tekhn. nauk; FROLOV, V.V., dots., kand.tekhn. nauk; SHORSHOROV, M.Kh., dots., kand. tekhn. nauk; GOSPODAREVSKIY, V.I., inzh.; SUBBOTIN, Yu.V., inzh.; KURKIN, S.A., dots., kand. tekhn. nauk; VINOKUROV, V.A., dots.,kand. tekhn. nauk; KAGANOV, N.L., dots., kand. tekhn. nauk; SHASHIN, D.M., kand. tekhn. nauk; AKULOV, A.I., dots., kand. tekhn. nauk; NAZAROV, S.T., dots., kand. tekhn. nauk; YEVSEYEV, G.B., dots., kand. tekhn. nauk; NIKOLAYEV, G.A., prof., doktor tekhn. nauk, red.; TITOVA, V.A., red.; FUFAYEVA, G.I., red.; CHIZHEVSKIY, E.M., tekhn. red.

[Laboratory work on welding] Laboratornye raboty po svarke. Moskva, Rosvuzizdat, 1963. 274 p. (MIRA 16:8)

1. Nauchno-pedagogicheskiy kollektiv Kafedry svarochnogo proizvodstva Moskovskogo vysshego tekhnicheskogo uchilishcha (for all except Nikolayev, Titova, Fufayeva, Chizhevskiy).
2. Zaveduyushchiy kafedroy "Mashiny i avtomatizatsiya svarochnykh protsessov" Moskovskogo vysshego tekhnicheskogo uchilishcha (for Nikolayev).

(Welding—Study and teaching)

VINOKUROV, V.A.

Lengthening the service life without repairs of the pins of the N8 electric locomotive truck coupler. Elek.i tepl.tiaga 6 no.5:22 My '62. (MIRA 15:6)

1. Glavnyy inzh. depo Zlatoust Yuzhno-Ural'skoy dorogi.
(Electric locomotives--Design and construction)

VINOKUROV, V.A.

A word from the locomotive engineers about the new T8 electric locomotive. Elek. i tepl. tiaga no.6:29-30 Je '62. (MIRA 15:7)

1. Glavnyy inzhener depo Zlatoust Yuzhno-Ural'skoy dorogi.
(Electric locomotives)

KURKIN, S.A., kand.tekhn.nauk, dotsent; VINOKUROV, V.A., kand.tekhn.nauk

Correcting the buckling of thin-sheet welded structures by rolling. [Trudy] MVTU no.101:186-196 '61. (MIRA 14:8)
(Sheet metal—Welding) (Welding—Defects)

S/135/61/000/002/003/012
A006/A001

AUTHORS: [redacted], Candidate of Technical Sciences, Gazaryan, A. S., Engineer

TITLE: Residual Stresses in Thick Butt Welded Joints

PERIODICAL: Svarochnoye proizvodstvo, 1961, No. 2, pp. 9-12

TEXT: At the welding laboratory of MVTU imeni Bauman mean values of the three components of volumetric residual stresses averaged over the thickness of weld jointswere measured (Ref. 1, 2). However, the mean values obtained did not give a sufficiently precise picture on the distribution of residual stresses at various spots across weld joints over 40 mm thick. Therefore the authors developed an improved method of investigating volumetric residual stresses with the aid of deep drilling (Ref. 3). The investigation was carried out with the participation of S. A. Kurkin, Candidate of Technical Sciences (MVTU imeni Bauman). The stresses in the metal were measured with the aid of cylindrical calibrated insertion pieces (Fig. 1) onto which resistance strain gauges were fastened. The inserts were placed in stepped apertures oriented along the main axis of stress field or through a certain angle to the field. Multilayer and electroslag butt-welded specimens

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Residual Stresses in Thick Butt Welded Joints

80 mm (Fig. 3), 120 (Fig. 4), 240 (Fig. 5) and 350 mm thick (Fig. 6) were investigated. The magnitudes of elastic deformation and stresses were calculated from the difference of measurements prior to and after recording residual stresses. If the aperture axes coincided with the main axis of the residual stress field, the stress components in the depth are determined by the following formulae:

$$\sigma_x = \frac{\mu E}{(1+\mu)(1-2\mu)}\Delta + \frac{E}{1+\mu}\varepsilon_x;$$

$$\sigma_y = \frac{\mu E}{(1+\mu)(1-2\mu)}\Delta + \frac{E}{1+\mu}\varepsilon_y;$$

$$\sigma_z = \frac{\mu E}{(1+\mu)(1-2\mu)}\Delta + \frac{E\mu}{1+\mu}\varepsilon_z;$$

where μ is the Poisson ratio; E is the modulus of elasticity of the first kind, and $\Delta = \varepsilon_x + \varepsilon_y + \varepsilon_z$ is the volume deformation. If the direction of the aperture axes are forming a certain angle with the direction of the main axes, the magnitude of stresses can be determined using the known formulae of the theory of elasticity. To reveal the nature of distribution of residual stresses across the thickness of the weld the magnitudes of residual stress field components on the surface must be known. If σ_z is equal to zero, σ_x and σ_y are measured with the

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Residual Stresses in Thick Butt Welded Joints

aid of strain gauges, placed along the weld to measure ε_x and across the weld to determine ε_y. Having determined the magnitude of stresses in the depth and on the surface of the metal, data are available on the nature of stress distribution across the thickness. The measurements yielded the following results: The distribution of residual stresses in electroslag and multilayer welded joints has a different nature. In multilayer welds the stresses along the weld joint on the surface approach yield limit values of the material; in the weld depth they are, as a rule, somewhat lower than on the surface. In electroslag welded joints the stresses along the weld attain their highest values in the metal depth along the weld axis; on the surfaces the stresses along the weld are low and often close to zero. The distribution of transverse stresses across the weld joint, in both multilayer and electroslag welded joints, is non-uniform and of a different nature. In electroslag welded joints these stresses in the metal depth are tensile ones and attain values approaching σ_T; in multilayer welded joints they are, as a rule, compressive ones and usually relatively low. Residual stresses across the thickness σ_z can be tensile (mainly in the case of electric slag welding, less frequently in multilayer welding) and compressive (in multilayer welding). The force system of residual three-axial stresses during the welding of up to 100 mm thick parts, can obviously not cause the transition of the parts to a brittle state,

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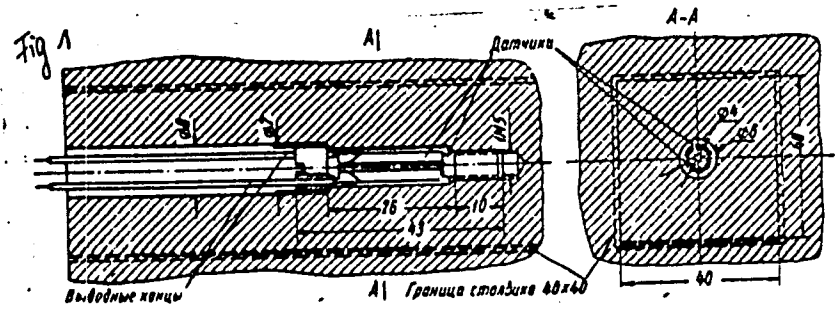
Residual Stresses in Thick Butt Welded Joints

since the formation of a stress field with the components $\sigma_x = \sigma_y = \sigma_z$ in the given case is almost excluded. In electric slag welding of over 200 mm thick parts a rigid system of residual stresses may be formed. The tests performed show that the method is applicable to determine three-axial stresses.

Figure 1
General view of a cylindrical insertion piece placed into a specimen:



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S/135/61/000/002/003/012
A006/A001

Residual Stresses in Thick Butt Welded Joints

Figure 3:

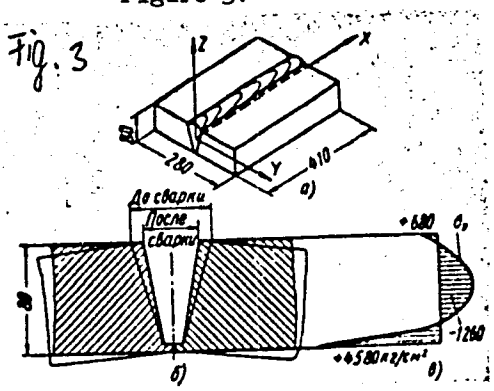

Figure 3
Results of experiments made with a 80 mm thick specimen; a - general view of the specimen; b - changing of gap as a result of welding process; c - distribution of σ_y across the specimen

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Figure 4:

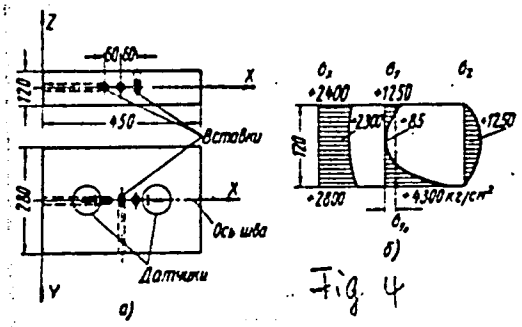

Figure 4
Results of experiments made with a 120 mm thick specimen; a - arrangement of inserts in the depth and of the strain gauges on the specimen surface; b - distribution of stresses across the specimen

S/135/61/000/002/003/012
A006/A001

Residual Stresses in Thick Butt Welded Joints

Figure 5
Results of experiments made with a 240 mm thick specimen; a - stress on the specimen surface; b - distribution of σ_x, σ_y and σ_z across the specimen

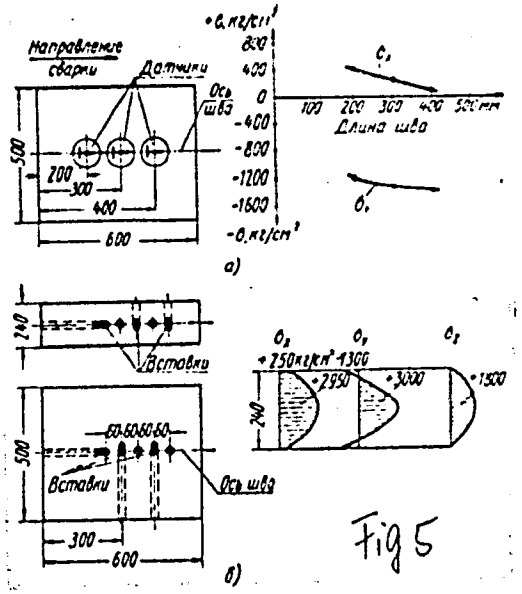

Fig 5

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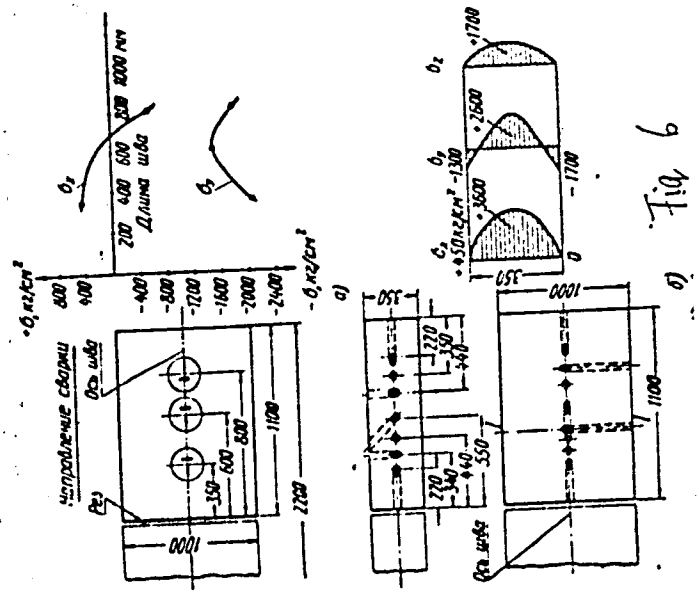
A006/A001

Residual Stresses in Thick Butt Welded Joints

Figure 6
Results of experiments on a 350 mm thick specimen; a - stress on the specimen surface; b - distribution of σ_x, σ_y and σ_z across the specimen.
There are 6 figures and 4 references, 3 Soviet and a English.

ASSOCIATION: MVTU imeni Bauman

Figure 6:



Card 7/7

VINOKUROV, V.A.

Means for improving operation of the N8 electric locomotives during winter. Elek.i tepl.tiaga 4 no.2:6 F '60. (MIRA 13:6)

1. Zamestitel' nachal'nika po remontu depo Zlatoust, Yuzhno-Ural'skaya doroga.
(Electric locomotives--Cold weather operation)

NIKOLAYEV, G.A.; VINOKUROV, V.A.; GAZARYAN, A.S.; KURKIN, S.A.

Formation of inherent stresses in welding very thick metals.
Avtom.svar. 13 no.6:3-11 Je '60. (MIRA 13:7)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche im. Baumana.
(Plates, Iron and steel--Welding)
(Thermal stresses)

KURKIN, S.A., kand.tekhn.nauk; VINOKUROV, V.A., kand.tekhn.nauk;
PARAKHIN, V.A., inzh.

Strengthening weld joints by press working the seam with rolls. Svar.proizv. no.8:15-16 Ag '60. (MIRA 13:7)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche im.Baumana.
(Sheet metal--Welding) (Metals--Cold working)

S/125/60/000/009/001/017
A161/A130

1.2300 2708,1573 only

AUTHORS: Vinokurov, V.A., Gasaryan, A.S.

TITLE: Deformations in the Electro-Slag Welding Process

PERIODICAL: Avtomaticheskaya svarka, 1960, No. 9, pp. 3-11

TEXT: The magnitude and nature of transverse deformations which develop in the butt welding of plates by the electro-slag process have been investigated, and approximate calculation of such deformations made, using the theory of elasticity. Special removable deformation meters with an indicator head were used for measurements. The conical leg ends of the "deformometers" spaced at 100 mm were placed into holes made in the parts to be joined (Fig. 1) (100 mm space was chosen for making the calculations easier). The points on the part edges were not observed, rather points at a distance ≈ 35 mm from the edges were observed, which resulted in the observations of the butt face displacements being very inaccurate. Various work with straight and annular seams was welded. Measured deformations are shown in

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A161/A130

Deformations in the Electro-Slag Welding Process

four graphs (Fig. 2-5) where the straight line left shows the work edge position before the process and is used for the ordinate axis for time t_{qac} (t_{hr}) and the positions of the slider. Displacement of one edge (i.e., one half of deformation measured by the deformometer) is marked on the abscissa. The cylinder in Fig. 5 had a 2.5 m diameter and 450 mm wall. As the work faces in the electro-slag process are not in contact above the pool surface, and down to the 600°C isotherm the bond through the weld metal (for low-carbon steel) does not cause high transverse stresses, the determined displacements apply with sufficient accuracy to the free plate butt face above the 600° isotherm. The equations describing the temperature field in the heated edge are taken from N.N. Rykalin's work (Ref. 3), and the coefficients characterizing the physical and mechanical material properties are assumed constant for simplicity in the entire temperature range. The calculation leads to the conclusion that bulging in the process is proportionate with the linear power of the welding heat source per 1 cm metal thickness. Engineers

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S/125/60/000/009/001/017
A161/A130

Deformations in the Electro-Slag Welding Process

V.V. Chernykh, G.G. Meyramov and others of NKMZ im. Stalina (NKMZ im. Stalin) took part in experiments. The following conclusions were drawn. 1. The method and the graphical presentation of deformations of the welding gap revealed to a sufficient degree the mechanism of the development of welding deformations with time. 2. It is clear that butt welded parts should be divided into classes by rigidity and weight. 3. In the welding of deep and heavy plates (Fig. 3), two kinds of deformation are to be expected both of which are not dangerous for the process - convergence and bulging of the edges. A third kind of deformation (angular) is added to convergence and bulging in the case of wide plates with a sligh moment from the weight. To prevent convergence over the permissible tolerance, additional measures must be taken against angular deformation (using cramps, blocks, etc.). 4. Deformations in welding narrow plates lead to closing as well as opening of the gap. Although, opening caused by uneven heating of the plates considerably exceeds other deformations. The gathered experiment data made it possible to evaluate in the first rough approximation of the width of the parts at which the gap opening is to be expected. This must be expected

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Deformations in the Electro-Slag Welding Process

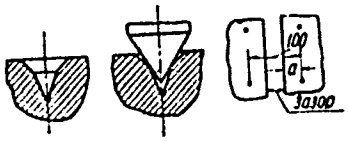
with the width of the parts between 0.4 and 1 m and the weld seam length above 2 m. If the parts to be joined are not sufficiently rigid, the opening of the gap must be prevented by cramps attached by welding to the top of the butt joint. 5. The theoretical investigation has proven that local bulging in the process is proportionate with the linear power per 1 cm of the weld depth. There are 8 figures and 4 Soviet references.

ASSOCIATION: MVTU im. Baumana (MVTU im. Bauman)

S/125/60/000/009/001/017
A161/A130

Deformations in the Electro-Slag Welding Process

Fig. 1



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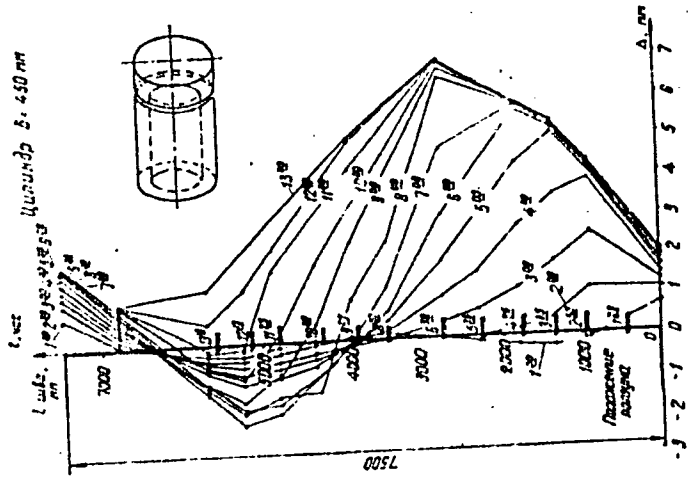
A161/A130

Deformations in the Electro-Slag Welding Process

Fig. 5



Card 6/6

ACCESSION NR: AP5003380 S/0292/65/000/001/0005/0007

AUTH: [illegible]

[illegible]

systems for aircraft

SOURCE: Elektrotekhnika, no. 1, 1965, 5-7

TOPIC TAGS: aircraft generator, generator cooling system, air cooling, evaporative cooling

ABSTRACT: An aircraft-generator cooling system designed for altitudes exceeding 25 km is discussed. The system utilizes evaporative film cooling, which affords cooling intensity many times greater than air or liquid cooling and significant reduction of the overall size and weight of the equipment. The system can operate at ambient temperatures of -5°C and higher at [illegible] km and above. At a speed of 2000 km/hr, flight efficiency is [illegible]. At a flight duration of 1 hr, the specific weight of the equipment at maximum thrust accordance is 0.7 kg/kw as against 0.1 kg/kw for the usual type of electri-

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L 23941-65
ACCESSION NR: AP5003380

machine). A comparative theoretical and experimental investigation of various aircraft-generator cooling systems has demonstrated that a combination of air-cooling and evaporative film cooling systems is the [illegible] be easily automated (for example, with a timeter and [illegible] ings as the controlling variables [illegible]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: AC, PR

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3176

Card 2/2

S/081/62/000/013/025/054
B177/B101

AUTHORS: Ivanov, A. I., Timofeyev, V. V., Vinokurov, V. B., Lebedev, O. A.

TITLE: Electrolysis of titanium tetrachloride in molten chlorides

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1962, 412, abstract 13K190 (Sb. "Titan i yego splavy". no. 6, M., AN SSSR, 1961, 145-152)

TEXT: Three patterns of semi-industrial electrolyzers have been designed and tested (with a liquid cathode, with a removable cathode, and with rotating cathodes), enabling $TiCl_4$ to be electrolyzed continuously or semi-continuously in the melt. Individual sub-assemblies have been improved and the theoretical efficiency is shown for all three electrolyzers and their basic components. Mention is made of the weakest sub-assemblies in these designs, which call for further development. [Abstracter's note: Complete translation.]

Card 1/1

21034
S/598/61/000/006/019/034
D228/D303

18.3100 1087

AUTHORS: Ivanov, A.I., Lebedev, O.A., Timofeyev, V.V. Vinokurov, V.B., and Frantas'yev, N.A.

TITLE: Electrolysis of titanium tetrachloride in molten chloride salts

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 6, 1961. Metallotermiya i elektrokhimii titana, 136 - 144

TEXT: The authors studied the technological aspects of the electrolysis of $TiCl_4$ in molten chlorides -- NaCl 50, $CaCl_2$ 35, $BaCl_2$ 15 % -- in a large, laboratory pilot-plant. 403 electrolyses were carried out, and the longest period of continuous operation, during which the cathode and deposits were extracted 50 times, was about 100 hr. $TiCl_4$ was fed through a special quartz pipe into the space between the stainless-steel cathode and graphite-block anode. The following optimum conditions for electrolysis on a semi-industrial scale were first established: 1) The saturation of the electrolyte with $TiCl_4$ for 1 hr. at a d.c. strength of about 200 amp. and at a

Electrolysis of titanium tetrachloride..

$TiCl_4$ outlay of 1 - 1.5 l/hr.; 2) A unit-electrolysis time of 5 amp.hr./cm^2 -- the cohesion between the cathode and deposit is poor at 15 - 22 amp.hr./cm^2; 3) A cathode current-density of approximately 1.8 - 2.0 amp/cm^2; 4) An operating temperature of 720 - 750°; 5) A $TiCl_4$ outlay of 1 1/1000 amp.hr.; and 6) The cessation of the $TiCl_4$ input for 5 min. before the end of the electrolysis -- to process the electrolyte at a nominal current-strength. These specifications were then checked by experiments in an electrolyzer with a hollow cathode and fixed cell -- when it was found that varying the current-strength has little effect on the electrolyte's Ti content for a given outlay of $TiCl_4$ that within the limits 1.5 - 2.72 amp/cm^2 the cathode current-density does not influence the grade or yield of the Ti deposit, that raising the operating temperature to 800° reduces the amount of Ti precipitated at the cathode, and that varying the $TiCl_4$ input above or below 1 ml/l amp.hr. lowers the current-discharge as a result of the formation of Na or lower chlorides on the electrode surfaces. Additional tests showed that the current discharge is 60 - 70 %, and that the cathode metal contains 1.5 - 4 % of impurities: Fe -- from the cathode rod; C - from

the a.c. electrodes; Si, Mg and Al - from the lining of the bath; and O, H and N - whose concentration depends on the electrolyzer's airtightness. In conclusion, the authors mention certain problems which require further study if the current-discharge and grade of the metallic Ti are to be improved. These include the perfection of the technique of prolonged continuous electrolysis; the improvement in the design of the electrolizer's components -- in particular the distributor for introducing the $TiCl_4$; and the rectification of defects in the electrolyte -- its poor ability to dissolve $TiCl_4$ and its tendency to abrade the brick-linings and steel parts. The content of impurities, whose transference is proportional to the time of electrolyis and to the area of the various working-surfaces, would be reduced by increasing the electrolyzer's airtightness, by removing the a.c. graphite electrodes, by cooling parts of the steel cathodes, by glazing the steel covers, and by lining the bath's inner walls with MgO slabs. There are 5 figures and 2 tables.

IVANOV, A.I.; LEBEDEV, O.A.; TIMOFEYEV, V.V.; VINOKUROV, V.B.; PRANTAS'YEV, N.A.

Electrolysis of titanium tetrachloride in fused chlorides; design of continuous action electrolytic cells for use in pilot plants. Titan i ego splavy no.6:136-144 '61. (MIRA 14:11)
(Titanium--Electrometallurgy) (Electrolysis--Equipment and supplies)

21035
S/598/61/000/006/020/034
D245/D303

18.3100

AUTHORS: Ivanov, A.I., Timofeyev, V.V., Vinokurov, V.B., and Lebedev, O.A.

TITLE: Electrolysis of titanium tetrachloride in fused chlorides

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 6, 1961. Metallotermiya i elektrokhimiya titana, 145 - 152

TEXT: The design is described of a pilot-scale cell for electrolysis of $TiCl_4$ in fused chlorides. Operation was continuous with a molten alloy cathode and a graphite anode. The Ti formed on the cathode surface and was periodically removed by ladles moving between cathode and anode. The bath consisted of a welded, water-cooled housing lined with chamotte brick to a wall thickness of 130 - 150 mm. Reference is also made to other cells designed by the author and collaborators, namely an electrolytic cell with extractable cathode and stationary compartment (Ref. 10: Avtorskaya zayavka

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Electrolysis of titanium tetrachloride.. D245/D303

s prioritetom ot 10/V 1956 g., no. 461408) and with reversible cathodes (No. 461772). The chief drawbacks of the design proposed were the lack of an effective means of feeding $TiCl_4$ to the electrolyte and the unsatisfactory hermetic sealing of the cell. There are 1 figure and 11 references: 2 Soviet-bloc and 9 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: M.E. Sibert and M.A. Steinberg, J. Metals, 1956, v. 8, no. 9, 1162-8; American Metal Market, 1957, v. 64, no. 101, 1; Metal Bull. 1957, no. 4200, 28; J. Burges, G. Brown, C. Roberts, J. Appl. Chem., 1958, v. 8, no. 1, 6.

Card 2/2

83635

S/081/60/000/015/001/014
A006/A001

5.2400A

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 15, p. 15, # 60232

AUTHORS: Mal'tsev, A.A., Kuzyakov, Yu.Ya., Tatevskiy, V.M. (I)
Mal'tsev, A.A., Vinokurov, V.G., Tatevskiy, V.M. (II)

TITLE: Study of Electron Spectra and of the Isotopic Effect in Oxygen Boron Compounds. I. β-Bands of BO Molecules. II. "Boric Acid" Bands

PERIODICAL: Fiz. sb. L'vovsk. un-t, 1957, No. 3 (8), pp. 475-480; 480-485

TEXT: I. A ДФС-3 (DFS-3) spectrograph (2A/mm dispersion) was used to investigate the emission spectrum of BO β-bands ($B^2\Sigma - X^2\Sigma$ transition) in the arc and a discharge tube with a hot hollow cathode containing B_2O_3. Rotation analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and 3 - 4 bands was made, and by the method of least squares the following rotational constants (in cm^{-1}) of the $B^2\Sigma$ state were obtained: Be = 1.5192, α_e = 0.0210, $D_e = 7.4 \cdot 10^{-6}$ and $\beta_e = 2.0 \cdot 10^{-6}$. It is shown that divergence of Sheibe's rotational constant values (Sheibe, Z. Phys., 1930, Vol. 60, p. 74) with those of Djenkins and McKellar (Djenkins, McKellar, Phys. Rev. 1932, Vol. 42, p. 464)

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83635

S/081/60/000/015/001/014
A006/A001

Study of Electron Spectra and of the Isotopic Effect in Oxygen Boron Compounds. I. β -Bands of BO Molecules. II. "Boric Acid" Bands

can be explained by the inaccurate treating of experimental data by Sheibe. The method of least squares was used to recalculate Sheibe's data for the $X^2\Sigma$ state. In all bands spin doubling was observed.
II. Spectrographs with diffraction gratings were used to investigate so-called fluctuation bands of boric acid, located in the 3700 - 6800 A range. The following spectrum sources were used: a discharge tube with a hot hollow cathode containing boron or boron-anhydride in an atmosphere of He and O_2 mixture, and an oxygen-hydrogen flame into which boric acid solution was introduced. At a high resolution the complicated rotational structure with several edges was observed for the majority of bands. The use of boron concentrated to 85% with a B^{10} isotope, allowed the determination of isotope band edges, shifted towards the short-wave side by about 6,5 and 5 A respectively for bands in the 5450 and 5750 A range. This result rejects Singh's theory (Singh, N.L., Proc. Indian Acad. Sci., 1949, Vol. A 29, p. 424) who relates the fluctuation bands of boric acid to the BO molecule. According to Singh the isotopic bands must be shifted to the long-wave side by 22 and 44 A respectively. When introducing to the spectrum source heavy water vapors, no isotopic effect is revealed in the

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83635

S/081/60/000/015/001/014
A006/A001

Study of Electron Spectra and of the Isotopic Effect in Oxygen Boron Compounds
I. β -Bands of BO Molecules, II. "Boric Acid" Bands

fluctuation bands of the boric acid. This indicates the absence of hydrogen in the molecule composition giving rise to these bands. It is assumed that the fluctuation bands of the boric acid belong to the multi-atomic oxygen compound of boron, B_xO_y.

A. Mal'tsev

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

Card 3/3

5 (3)

AUTHORS: Zagorevskiy, V. A., Zykov, D. A., Vinokurov, V. G.

SOV/79-29-7-43/83

TITLE: Derivatives of Chromonecarboxylic-2-acid (Proizvodnyye khromonkarbonovoy-2-kisloty)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2302 - 2306 (USSR)

ABSTRACT: In the preceding paper (Ref 1) the synthesis of a number of aryl esters of the chromonecarboxylic-2-acid by means of the acid chloride of this acid was described. The acid chloride was prepared by reaction of thionyl chloride in a pyridine solution of the acid and the crude mixture used without purification. In the present investigation 15 new and different N-substituted amides as well as some other derivatives of the chromonecarboxylic-2-acid were synthesized in search of pharmacologically active compounds (Table). All the substances (I)-(XV) were synthesized by reaction of the acid chloride on the above acid with the corresponding amino, oxy, and mercapto derivatives. The crude acid chloride, obtained by the previously proposed method, was used for reaction in dichloro ethane solution. In every case, excepting (XIII)-(XV), sodium bicarbon-

ate was used to bind the HCl formed in the reaction. By synthesizing the aryl esters (XIII)-(XIV) it was demonstrated that the acylation of phenols with this acid chloride by the Schotten-Baumann method is possible. The compounds (VIII)-(XII) form water-soluble salts when treated with sodium carbonate or sodium bicarbonate (carboxyanilide (IX)). The relation between the color of the chromonecarboxylic-2-acid anilides and the kind of substituent in the benzene ring of the aromatic amino group is of interest. Thus, for instance, the anilide of the chromonecarboxylic-2-acid is colorless, the p-toluidide (II) is light greenish-yellow. The p-methoxy-(III) and p-oxyanilide (IV) are yellowish-green, whereas the anilides (VI) and (VII) are yellowish-orange or red. The aryl esters of the chromonecarboxylic-2-acid show similar effects. An explanation of this phenomenon will be the subject of further investigations. There are 1 table and 5 references, 4 of which are Soviet.

ASSOCIATION: Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR (Institute of Pharmacology and Chemotherapy of the Academy of Medical Sciences, USSR)

SUBMITTED: June 5, 1958

5(3)
AUTHORS: Kochetkov, N. K., Gottikh, B. P., Vinokurov, V. G., Khomutov, R. M.

SOV/20-125-1-23/57

TITLE: On the Structure of β-Chlorovinyl Ketones and on the Stereochemistry of the Reaction of Ketovinylation (O konfiguratsii β-khlorvinilketonov i stereokhimii reaktsii ketovinilirovaniya)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 1, pp 89-92 (USSR)

ABSTRACT: The structure of the substances mentioned in the title RCOCH=CHCl is, in spite of their well elaborated utilization methods (Ref 1), still an unsolved problem. From the most important methods of production (Refs 2-4) it may be assumed that the substances produced in this way have a trans-structure. The authors succeeded in clearly confirming experimentally this assumption. If one of the simple β-chlorovinyl ketones, methyl-β-chlorovinyl ketone is oxidized with sodium hypochlorite, the trans-β-chloro acrylic acid (Ref 5) forms under rigidly controllable conditions as the only product. If this oxidation does not contact the C-atoms with a multiple binding, moreover, if the mild conditions of reaction exclude

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the isomerization of the initial substance and the reaction product a complete transformation of the structure during the reaction is impossible. Due to this fact methyl-β-chlorovinyl ketone has to be regarded as a transisomer. Thus, also all alkyl-, alkenyl-, and aryl-β-chlorovinyl ketones (Refs 2-4) are transisomers under similar conditions. As far as the β-chlorovinyl ketones (Refs 6, 7) produced by other methods are identical with those obtained by condensation with acetylene, they are obviously also transisomers. By the knowledge of the above structure the stereochemistry of the reaction mentioned in the title (Ref 1) could be observed. It is one of the most important reactions of β-chlorovinyl ketones and is only a nucleophilic substitution of a halogen atom. Since the chemical methods cannot be used for determining the structure of the reaction products mentioned the authors used infra-red spectra. Although the authors mention only data on the ketovinylation of sulfinic acids and β-dicarbonyl compounds, they have little doubt that also in other cases (Ref 1) ketovinylation reaction leads to a formation of transisomers. In other words, the reaction takes place under

preservation of the structure of the keto-vinyl group of the initial β-chlorovinyl ketone. This preservation may be explained by the substitution mechanism of the halogen (Ref 1, see Scheme) suggested by the author mentioned first. There are 3 figures and 16 Soviet references.

ASSOCIATION: Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR (Institute of Pharmacology and Chemotherapy of the Academy of Medical Sciences, USSR)

PRESENTED: December 1, 1958, by A. N. Nesmeyanov, Academician

SUBMITTED: November 29, 1958

PUSHKOV, V. G.; VINOKUROV, V. G.

Steelmakers from the Urals are striving to make use of internal potentialities in the industry. Metallurg 7 no.11:11-13 N '62. (MIRA 15:10)

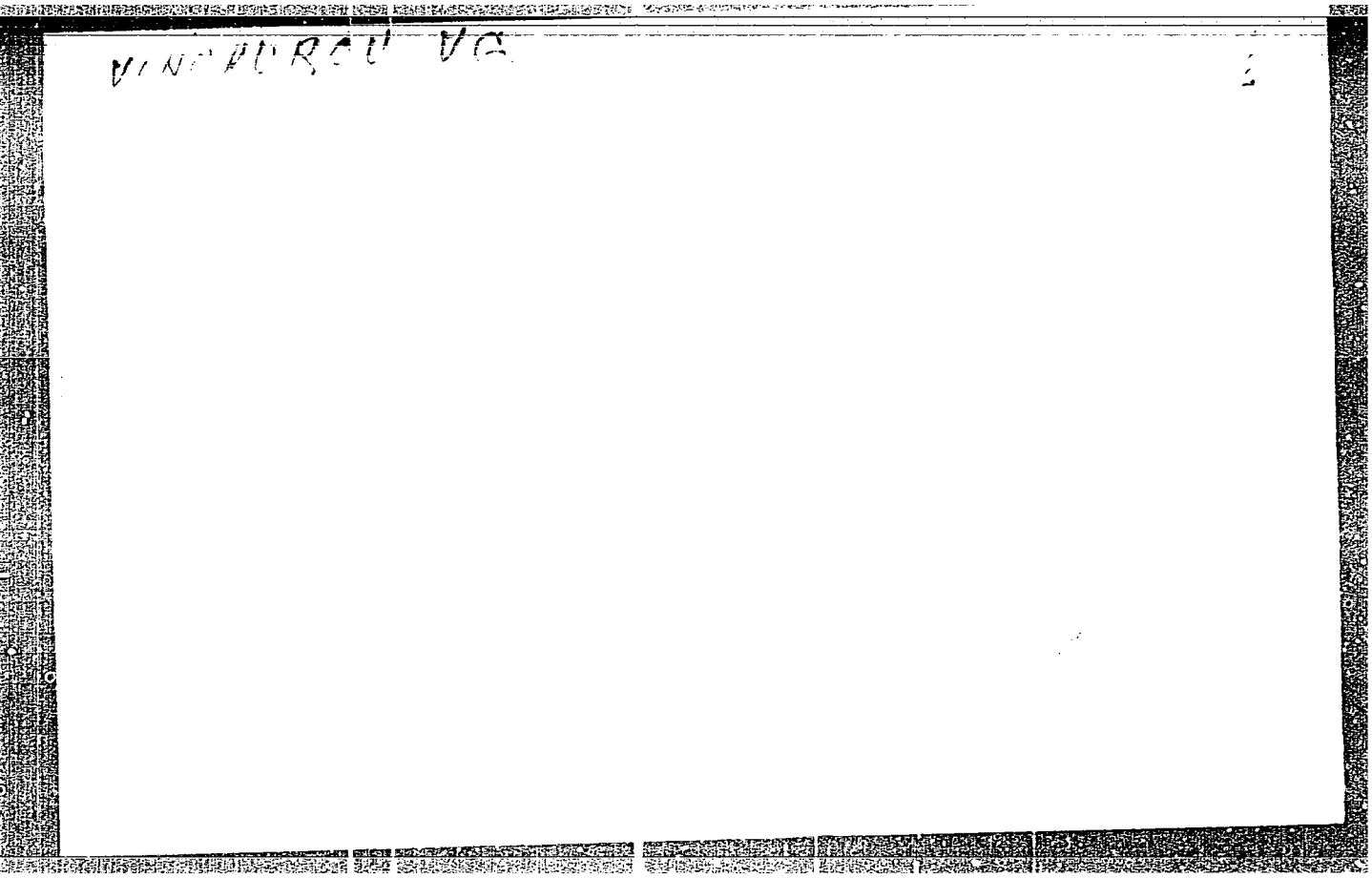
1. Sverdlovskiy sovet narodnogo khozyaystva.

(Ural mountain region--Iron and steel plants)

IVANOV, A.I.; VINOKUROV, V.G.; PROTOPOPOVA, T.V.; SKOLDINOV, A.P.

Synthesis of stereoisomeric β-chlorovinyl carbonyl compounds. Zhur. ob.khim. 34 no.1:354-355 Ja '64. (MIRA 17:3)

1. Institut farmakologii i khimioterapii AMN SSSR.



PA 227T54

VINOKUROV, V. G.

USSR/Mathematics - Modern Algebra, 1 Aug 52
Biorthogonal Systems

"Biorthogonal Systems That Pass Through Given Subspaces," V.G. Vinokurov, Cen Asia State U

"Dok Ak Nauk SSSR" Vol 85, No 4, pp 685-687

A basis (z_i) is said to pass through a subspace P if P contains a subsequence which is contained in P and which is the basis of P, where P is a subspace of Banach space E and sequence (z_i) is complete in E. Submitted by Acad A.N. Kolmogorov 19 May 52.

227T54

VINOKUROV, V.G.

PRIKHOT'KO, A.F

24(7) p 3 PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Fizychnyy zbirnyk, vyp. 1/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Lazer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Lavisterg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Milyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

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Card 29/30

VINOKUROV, V.G.

20-5-3/67

AUTHOR VINOKUROV V.G.

TITLE The Conditions of Regularity of Probability Processes. (Usloviya regulyarnosti vereyatnostnykh protsessov.- Russian)

PERIODICAL Doklady Akademii Nauk SSSR 1957, Vol 113, Nr 5, pp 959 - 961 (USSR)

ABSTRACT Let the abstract quantity of the states $\Omega = \{\omega\}$ and the quantity Φ of the functions $\varphi(t)$ with values in Ω be given; here t runs through the quantity of all whole numbers. For every φ from Φ and at arbitrary n let the funotion $\varphi_n(t)$ also be contained in Φ. When on Φ the BOREL field of the probabilities P is given, then a probability process $\{\Omega, \Phi, P\}$ is thereby determined. The author defines in the paper under review for eaoh t a projection R_t of the space Φ in Ω : $R_t\varphi = \omega$ if $\varphi(t) = \omega$. On Φ the transformation $T\varphi(t) = \varphi(t+1)$ is defined. Then follows a whole series of additional definitions. A probability proooss is then defined to be of the MARKOV kind, when at all t and at all $A \in O^+_{(t)}$ the equation $P(A \mid \varphi^-_{(t)}) = P(A \mid \varphi_t)$ is valid almost everywhere on Φ. Let $S = \bigcap_t \mathfrak{A}^-_{(t)}$ and let S always contain a constant /S contains only one regular funotion. The paper under review denote s a proooss as regular when funotion. The sense of regularity consists in the circumstance

CARD 1/2

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...1956. ..., Member of the Uzbek SSR. ...eproduotion) ...ew review
...ics "V.I. ROMANOVSKIY",
Library of Congress. ...1.11. 1956.

VINOKUROV, V.G.

Independent complements to the algebras of sets. Dokl.AN Uz. SSR no.1:9-10 '59. (MIRA 12:4)

1. Institut matematiki i mekhaniki imeni V.I.Romanovskogo AN UzSSR.

(Algebra)

16(1); 16(2)

AUTHOR: Vinokurov, V.G.

06378
SOV/166-59-5-5/9

TITLE: On Probability Processes Given in the Coordinate Space

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1959, Nr 5, pp 42-48 (USSR)

ABSTRACT: Let Ω be a space with the probability measure P defined on the σ-algebra Q^{Ω} of measurable sets. Let from $A \subset B$, $B \in Q^{\Omega}$ and $P(B) = 0$ follow $A \in Q^{\Omega}$ and $P(A) = 0$. The probability process $\{\xi_t, T, \Omega\}$ is a family of random variables ξ_t defined on Ω and depending on the parameter t which runs through the set T. Let Φ be the set of functions $\varphi(t)$ given on T. The author investigates the question under which conditions for almost all functions $\varphi(t)$ of Φ there exists an $\omega \in \Omega$ so that $\xi_t(\omega) = \varphi(t)$. The author introduces the notions of a fundamental process and a process immediately given mod 0, and he gives necessary and sufficient conditions for the existence of the desired $\omega \in \Omega$. There is 1 non-Soviet reference, which is American.

ASSOCIATION: Institut matematiki im. V.I.Romanovskogo AN Uz SSR (Institute of Mathematics im.V.I.Romanovskiy AS Uz SSR)

SUBMITTED: April 1, 1959

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66457

SOV/20-129-1-1/64

~~16(1)~~ 16.2800

AUTHOR: Vinokurov,V.G.

TITLE: Generalized Lebesgue Spaces

PERIODICAL: Doklady Akademii nauk SSSR,1959,Vol 129,Nr 1,pp 9-11 (USSR)

ABSTRACT: According to the author a generalized Lebesgue space is a space E with a complete measure m, where 1) $mE = 1$, 2) to every two points $x,y \in E$ there exists a measurable set A so that $x \in A$, $y \overline{\in} A$, and 3) the factor space of E with respect to every measurable decomposition of E is a Lebesgue space in the sense of V.A.Rokhlin [Ref 1]. Starting from an other definition (with the aid of certain representations of a Boolean algebra with a finite-additive measure) the author investigates the properties of generalized Lebesgue spaces and shows that they are in a near connection with the measures in topological spaces. Some properties of probability theoretical processes in the considered spaces are discussed. There are 5 references, 3 of which are Soviet, 1 American, and 1 Hungarian.

Card 1/1

ASSOCIATION: Institut matematiki i mekhaniki imeni V.I.Romanovskogo Akademii nauk Uzb SSR (Institute of Mathematics and Mechanics imeni V.I. Romanovskiy,AS Uzb.SSR)

PRESENTED: May 18, 1959 by A. N. Kolmogorov, Academician

SUBMITTED: May 18, 1959

VINOKUROV, V.G.

Spaces with a measure of continual weight. Dokl. AN SSSR 163 no.6:1307-1309 Ag '65. (MIRA 18:8)

1. Institut matematiki im. V.I.Romanovskogo AN UzSSR. Submitted February 10, 1965.

VINOKUROV, V.G.

Supplementary representations of algebras with measures. Teor. veroiat. i mat. stat. no.1:126-129 '64.
(MIRA 18:6)

VINOKUROV, V.G.

Continuous product of Lebesgue spaces. Dokl. AN SSSR 162 no.2:255-257 My '65. (MIRA 18:5)

1. Institut matematiki im. V.I.Romanovskogo AN UzSSR.

VINOKUROV, V.G.

Representations of partially ordered sets, and topological spaces. Izv. AN Uz.SSR. Ser. fiz.-mat. nauk 7 no.5:5-13 '63. (MIRA 17:8)

1. Institut matematiki imeni V.I. Romanovskogo AN UzSSR.

VINOKUROV, V.I.

Infinite products of Lebesgue spaces. Dokl. AN SSSR 156 no.6:1247-1249 O '64. (MIRA 17:12)

1. Institut matematiki im. V.I. Romanovskogo AN Uzbekskoy SSR. Predstavleno akademikom A.N. Kolmogorovym.

VINOKUROV, V.G.; TROITSKAYA, V.S.; GRANDBERG, I.I.; PENTIN, Yu.A.

Pyrazoles. Part 39: Structure and tautomerism of hydroxypyrazoles
Zhur. ob. khim. 33 no.8:2597-2605 Ag '63. (MIRA 16:11)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

VINOKUROV, V.G.; TROITSKAYA, V.S.; GRANDBERG, I.I.

Pyrazoles. Part 44: Tautomerism of hydroxy and amino pyrazole systems, classification of intramolecular effects and structure of bifunctional pyrazole derivatives. Zhur. ob. khim. 35 no.7: 1288-1293 Jl '65. (MIRA 18:8)

1. Institut farmakologii i khimioterapii AMN SSSR i Moskovskiy gosudarstvennyy universitet.

VINOKUROV, V.G.; TROITSKAYA, V.S.; GRANDBERG, I.I.

Pyrazoles. Part 41: Infrared spectra and tautomerism in the amino-pyrazole series. Zhur.ob.khim. 34 no.2:654-660 F '64. (MIRA 17:3)

1. Institut farmakologii i khimioterapii AMN SSSR i Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.

POPOVA, R.Ya.; PROTOPOPOVA, T.V.; VINOKUROV, V.G.; SKOLDINOV, A.P.

Functional derivatives of malodnialdehyde and their reactions. Part 14: Condensation of some allyl halides with vinyl ether. Zhur.ob.khim. 34 no.1:114-119 Ja '64. (MIRA 17:3)

1. Institut farmakologii i khimioterapii AMN SSSR.

VINOKUROV, V.G.

Topological properties of partially ordered sets. Usp. mat. nauk 18 no.5:151-155 S-O '63. (MIRA 16:12)

VINOKUROV, V.G.; TROITSKAYA, V.S.; SOLOKHINA, N.D.; GRANDBERG, I.I.

Pyrazoles. Part 31: Infrared spectra of 4-acylpyrazoles, their salts and metal derivatives. Zhur.ob.khim. 33 no.2: 506-511 F '63. (MIRA 16:2)

1. Institut farmakologii i khimioterapii AMN SSSR i Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Pyrazole—Absorption spectra)

GRANDBERG, I.I.; VINOKUROV, V.G.; PROITSKAYA, V.S.; SHAROVA, G.I.

Pyrazoles. Part 30: Synthesis and ultraviolet spectra of 4-acetyl- and 4-benzoyl-3,5-dimethylpyrazoles. Zhur.ob.khim. 32 no.11:3582-3586 N '62. (MIRA 15:11)

1. Moskovskiy gosudarstvennyy universitet i Institut farmakologii i khimioterapii AMN SSSR.
(Pyrazole--Spectra)

KUZNETSOVA, Ye.A.; SVETLAYEVA, V.M.; ZHURAVLEV, S.V.; VINOKUROV, V.G.; TROITSKAYA, V.S.; Prinimala uchastiye SOLOKHINA, N.D.

Synthesis and properties of 2-mercaptobensothiazole derivatives. Part 1: Some S-substitute 2-mercaptobenzothiazoles and their sulfones. Zhur.ob.khim. 32 no.9:3007-3011 S '62. (MIRA 15:9)

1. Institut farmakologii i khimioterapii AMN SSSR.
(Benzothiazole) (Sulfones)

VINOKUROV, V.G. (Tashkent)

Representations of Boolean algebras and measurable spaces. Mat. sbor. 56 no.3:375-391 Mr '62. (MIRA 15:4)
(Algebra, Boolean) (Spaces, Generalized)

VINOKUROV, V.G.; TROITSKAYA, V.S.; ZAGOREVSKIY, V.A.

Spectral colors in the series of derivatives of 2-chromonecarboxylic acid. Zhur.ob.khim. 31 no.9:2901-2995 S '61. (MIRA 14:9)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR.

(Chromonecarboxylic acid--Spectra)

35312
S/039/62/056/003/004/004
B125/B102

16 0600

AUTHOR: Vinokurov, V. G. (Tashkent)

TITLE: Representations of Boolean algebras and spaces with measure

PERIODICAL: Matematicheskiy sbornik, v. 56(98), no. 3, 1962, 375 - 391

TEXT: A finitely additive non-negative function m which is given on a Boolean algebra $\mathfrak{A}$ and equal to unity in the unit element of $\mathfrak{A}$ is said to be a measure belonging to $\mathfrak{A}$. A representation $\{E, R, V\}$ of $\{\mathfrak{A}, m\}$ consists of a set E, of the algebra R of the subsets of E, and of a homomorphism V of the algebra $\mathfrak{A}$ onto the algebra R, which satisfies the following conditions: 1. For arbitrary two points x and y of E, there is such an $A \subset R$ that $x \in A, y \subset A$; 2. For each $b \in \mathfrak{A}$ with $mb > 0$, the set Vb does not vanish. A subset W of $\mathfrak{A}$, which has the property that $a \cap b \neq 0$ and $a \cdot b \in W$ for $a \in W$ and $b \in W$, is said to be a lattice. For each element $b \in \mathfrak{A}$, there is a set B which consists of all maximal lattices containing b. All these sets B constitute an algebra R_c. V_c is the corresponding isomorphism between $\mathfrak{A}$ and R_c. A representation $\{E_c, R_c, V_c\}$ is said to be maximal. For two representations

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Representations of ...

$\{E_1, R_1, V_1\}$ and $\{E_2, R_2, V_2\}$ and an arbitrary subset $\mathfrak{T}$ of $\mathfrak{L}$, the set of all the maximal lattices W for which there is such a lattice $W' \in T_c E_1$ that $W \cap \mathfrak{T} = W'$, but no lattice $W'' \in T_c E_2$ such that $W \cap \mathfrak{T} = W'' \cap \mathfrak{T}$, is designated by $A_{E_2}^{E_1}(\mathfrak{T}, \mathfrak{L})$. A representation $\{E_1, R_1, V_1\}$ is said to be subordered to a representation $\{E_2, R_2, V_2\}$ if for an arbitrary subalgebra $\mathfrak{T} \subset \mathfrak{L}$ there is a subalgebra $\mathfrak{T}' \subset \mathfrak{L}$ such that $\mathfrak{T} \subset \mathfrak{T}'$ and $A_{E_2}^{E_1}(\mathfrak{T}'', \mathfrak{L})$ has the measure zero in the space produced by $\{\mathfrak{L}, m\}$ for each subalgebra $\mathfrak{T}'' \supset \mathfrak{T}'$. The concept of subordering of representations is the most important concept of the paper. The metrical structure of representations is invariant under the procedure of subordering. Therefore, this procedure leads to a classification of the metrical types of representations and spaces produced by representations. There are 8 references: 5 Soviet and 3 non-Soviet. The reference to the English-language publication reads as follows: P. R. Halmos, J. v. Neumann, Operator methods in classical mechanics. II, Ann. of Math., 43, no. 2

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S/039/62/056/003/004/004
B125/B102

Representations of ...

(1942), 332 - 350.

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet imeni V. I. Lenina (Tashkent State University imeni V. I. Lenin)

SUBMITTED: September 2, 1960

Card 3/3

VINOKUROV, V.G.; TROITSKAYA, V.S.; ZAGOREVSKIY, V.A.

Absorption spectra of derivatives of 2-chromonecarboxylic acid in the ultraviolet and visible. Zhur. ob. khim. 31 no.4: 1079-1082 Ap '61. (MIRA 14:4)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR.
(Benzopyrancarboxylic acid--Spectra)

22864
S/044/60/000/012/012/014
C 111/ C 333

16,8000

AUTHOR: Vinokurov, V. G.

TITLE: A problem of control theory

PERIODICAL: Referativnyy zhurnal, Matematika, no. 12, 1960, 142, abstract 14213.(Tr. In-ta matem. i mekhan. AN Uz SSR, 1957, vyp. 20, 5-4)

TEXT: The author considers the problem of the assumption of a statistical solution for the following general scheme. A certain object can be with probability measure P in an arbitrary point of the abstract space Φ. The space Φ is decomposed into a finite number of disjoint measurable sets Φ_i; on Φ there are given nonnegative, integrable functions $r_i(x)$, where $r_i(x)$ is equal to the loss which must be suffered when the real state of the object is x, while it is assumed that the state of the object belongs to Φ_i. A test is carried out and it is stated to which element of a certain decomposition ξ of the space Φ the state of the object belongs. Let Φ be decomposed into the sets Φ_i^ξ, where Φ_i^ξ are measurable sets which are sums of the elements ξ. Then the solution $x \in \Phi_i$ is made if $x \in \Phi_i^\xi$. Under fixed

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C 111/ C 333

A problem of control theory

decomposition ξ one obtains a minimum of losses, if for almost all $x \in \Phi_i$ it is satisfied: $M_i(x) = M(x)$, where $M_i(x) = M\{r_i(x)\}$, $M(x) = \min_i M_i(x)$.

Then the author considers the losses which are connected with the expenses of the test and investigates the question of the optimal solution under consideration of these losses relative to the set of all possible decompositions of the space Φ. The given set is mapped onto the space Z of the classes of decompositions ξ, in which a distance is introduced. The minimum value $K(\xi)$ of the mathematical expectation of the losses for the decomposition ξ can be defined as $K(z)$, $z \in Z$. It turns out that $K(z)$ is a uniformly continuous function in $\tilde{Z}$. Then Z is embedded into a certain complete metric space $\tilde{Z}$. It is defined: the measure P is called saturated, if $\tilde{Z} = Z$. The Lebesgue measures in the sense of V. A. Rokhlin (Matem. sb. 1949, 25,1) are saturated measures. At the end of the article the example of a saturated measure which is no Lebesgue measure is given.

[Abstracter's note: Complete translation.]

Card 2/2

VINOKUROV, V.G.; TROITSKAYA, V.S.; KOCHETKOV, N.K.

Cycloserine and related compounds. Part 11: Infrared spectra of 3-isoxazolidinones. Zhur. ob. khim. 31 no.1:205-210 Ja '61. (MIRA 14:1)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR.

(Isoxazolidinone--Spectra)

VINOKUROV, V. I.

VINOKUROV, V. I.: "Investigation of methods of radiometry." Min Higher Education. Leningrad Electrical Engineering Inst imeni V. I. Ul'yanov (Lenin). Leningrad, 1956
(Dissertation for the Degree of Candidate in Technical Sciences)

So: Knizhnaya Letopis', No. 18, 1956

VINOKUROV, V.I., inzhener; SVI, P.M.

Detection of defective insulators by means of radiation.
Elektrichestvo no.11:86 N '56. (MLRA 9:12)

1. Leningradskiy elektrotekhnicheskiy institut imeni Ul'yanova (Lenina) (for Vinokurov) 2. Kontora po organizatsii i ratsionalizatsii rayonnykh elektrostantsii i seti (for Svi).
(Electric insulators and insulation--Testing)
(Radio measurements)

66528

6.4300

SOV/112-59-18-39235

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1959, Nr 18, p 167 (USSR)

AUTHOR: Vinokurov, V.I.

TITLE: Devices for the Measurement of Fluctuating Signals

PERIODICAL: Izv. Leningr. elektrotekhn. in-ta, 1957, Nr 31, pp 139 - 143

ABSTRACT: A modulation type radiometer for the measurement of fluctuating signals in the 3-cm range is described. The longitudinal sensitivity of the radiometer is 2° at a time constant of 8 sec, which corresponds to a lowest measurable power of 10^{-16} watt. The input signal is modulated with the aid of a modulator consisting of a rectangular waveguide of 2 mm height, in the interior of which a G-10 type ferrite is placed. Modulation is effected by the alteration of absorption of the ferrite by a magnetizing field of a frequency of 175 kcycles; the modulation depth amounts to 75%. The modulated signal arrives at the balance mixer of the resonator type through a ferrite insulator possessing valve properties and weakening the noises of the receiver and the mixer,

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Devices for the Measurement of Fluctuating Signals SOV/112-59-18-39235

which reach the antenna. Further follows a pass frequency indicator (UPCh), tuned on a frequency of 60 Mc and having a pass band of 12 Mc, a selective low frequency indicator (UNCh) and a phase detector. The supply of the radiometer is effected by a stabilized rectifier.

B.I.K.

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66527
SOV/112-59-18-39234

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1959, Nr 18, p 167 (USSR)

AUTHOR: Vinokurov, V.I.

TITLE: Investigations of the Possibility of Temperature Telemetering of Heated Bodies With the Aid of Radiometers

PERIODICAL: Izv. Leningr. elektrotekhn. in-ta, 1958, Nr 35, pp 157 - 165

ABSTRACT: The full energy of radio emission received by the antenna of a radiometer depends on the frequency band, the absorption coefficient of the heated body (B), the amplification factor of the antenna and the solid angle under which the surface of B is visible from the plane of the antenna opening. The power which is received by the radiometer is equivalent to the temperature increase of the emission resistance of the antenna which, generally, is determined by the integral value of the temperature of the B under investigation. The value of the equivalent temperature of the parabolic antenna of 40 cm in diameter at an opening angle of 10^{-2} steradian is found. The smallest temperature

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SOV/112-59-18-39234

Investigations of the Possibility of Temperature Telemetering of Heated Bodies With the Aid of Radiometers

increment of a heated dielectric, which can be measured by the radiometer, amounts to approximately 25°C. The radio emission being radiated from the heated B is absorbed by a flame. The absorption magnitude, according to the author's data, amounts to a few tenths of decibel/cm.

I.I.L.

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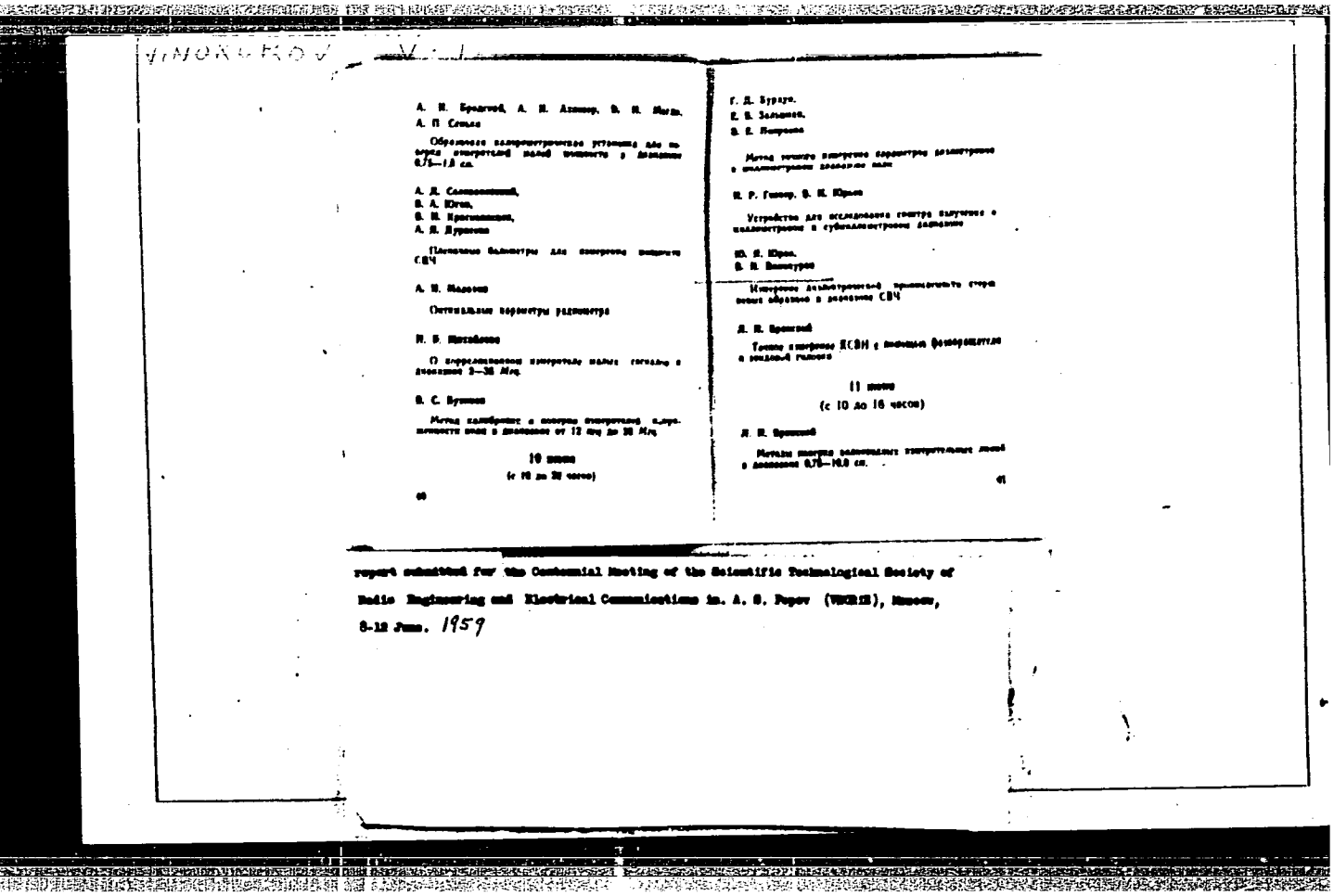

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (NTORES), Moscow, 8-12 June. 1959

ACC NR: AT6022237 SOURCE CODE: UR/0000/66/000/000/0020/0033

AUTHOR: Vinokurov, V. I.; Vakker, R. A.

ORG: none

TITLE: Using nonlinear elements in correlators

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya radiotekhniki. Doklady. Moscow, 1966, 20-33

TOPIC TAGS: signal correlation, correlation statistics, nonlinear effect

ABSTRACT: The properties of a correlator based on a nonlinear element (detector) whose characteristic is described by the equation:

$$Z = \begin{cases} ay^2 & y \geqslant 0, \\ 0 & y < 0. \end{cases}$$

are investigated. The S/N ratio at the output of this correlator is analyzed as a function of: reference signal whose amplitude is fairly large in comparison with the signals which follow, a signal whose relationship to the reference signal is non-stationary, and the external noise which is uncorrelated with the other two signals. The analysis assumes that the processes are confined to a narrow frequency band, are Gaussian with average value of zero, and have symmetrical spectra. The S/N of this correlator detector is compared to that of the ideal correlator. A loss coefficient

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ACC NR: AT6022237

is introduced which relates the S/N of the detectors with and without noise due to detection process for the cases when the input signal has a rectangular spectrum, when it is similar to that of a simple ringing circuit, and when it is similar to a band-pass filter spectrum. Orig. art. has: 27 formulas and 6 tables.

SUB CODE: 09/ SUBM DATE: 16Mar66/ ORIG REF: 001/ OTH REF: 002

Card 2/2

L 22426-66 EWT(d)/EWP(k)/EWP(l)
ACC NR: AP6013622 SOURCE CODE: UR/0105/65/000/009/0089/0089

AUTHOR: Bogoroditskiy, N. P.; Vinokurov, V. I.; Yermolin, N. P.; Lebedev, A. A.; Potsar, A. A.; Terenin, A. N.; Fremke, A. V.

ORG: none

TITLE: Honoring the 70th birthday of Professor Boris Pavlovich Kozyrev

SOURCE: Elektrichestvo, no. 9, 1965, 89

TOPIC TAGS: academic personnel, electric engineering personnel, IR research, spectroscopy

ABSTRACT: On 1 August 1965 was the 70th birthday of Honored Activist of Science and Engineering RSFSR, Laureate of the State Prize, Dr. Techn. Sci., Professor Boris Pavlovich Kozyrev. Professor Kozyrev's life-work has been inseparably connected since 1921 with the Leningrad Electrical Engineering Institute imeni V. I. Ul'yanov (Lenin), where he rose from the post of assistant to that of full professor - head of the Chair of Principles of Electrovacuum Engineering and Scientific Head of the Problems Laboratory of Radiation Electronics and Vacuum Engineering. Boris Pavlovich Kozyrev has made a series of important scientific contributions to vacuum engineering, optical electronics, and infrared engineering. In 1950 he was awarded the State Prize for the development and introduction of photoptical amplification of weak signals, which contributed to the expansion of research into

UDC: 621.38:535

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T. 22426-66

ACC NR: AP6013622

spectroscopy and infrared engineering in the Soviet Union. The Problems Laboratory which he heads is one of the major Soviet centers of research into thermal radiation sensors which are successfully applied in spectroscopy, atmospheric optics, actinometry, limnology, and studies of the processes of photosynthesis. Professor Kozyrev has at various times been a member of or consultant to scientific and technical councils in different research institutes. He is the author of approximately 150 works and inventions. In addition he is an excellent educator, author of guides and textbooks, faculty dean, the mentor of a large number of graduate students, and a civic-minded person who takes an active part in political and social life. He is the holder of many medals, orders, and other awards. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 09, 20 / SUBM DATE: none

Card 2/2

VINOKUROV, V.I., kand. tekhn.nauk, dotsent

Conversion of a fluctuating signal by a mixer in presence of a noise reference voltage. Izv. LETI no.52:74-90 '64. (MIRA 18:9)

BOGORODITSKIY, N.P.; VINOKUROV, V.I.; YERMOLIN, N.P.; LEBEDEV, A.A.; POTSAR, A.A.; TSRENIN, A.N.; FREMKE, A.V.

Professor Boris Pavlovich Kozyrev, 1895- ; on his 70th birthday. (MIRA 18:10)
Elektrichestvo no.9:89 S '65.

L 57596-65 EWG(j)/EWT(d)/EWT(l)/EWP(e)/EWT(m)/EWP(w)/EPF(c)/EWG(s)-2/EWP(l)/EWG(v)/EWA(d)/EWP(w)/EPR/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(h) Pe-5/Pf-4/Pr-4/Ps-4/Peb/Pw-4
SOURCE CODE: UR/0286/65/000/011/0118/0119
ACCESSION NR: AP5017875 621.825

AUTHOR: Kashchenko, I. M.; Krysin, B. T.; Kolpakov, Ya. V.; Smirnov, G. O.; Mikhaylovnkiy, V. A.; Tsytsenko, M. V.; Lebedeva, L. P.; Vinokurov, V. I.; Levin, M. M.; Edel'man, M. I.

TITLE: Method for producing friction parts from powder components.
Class 47, No. 171702

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 11, 1965, 118-119

TOPIC TAGS: aircraft brake, friction part, powder metallurgy

ABSTRACT: An Author Certificate has been issued for a method of producing friction parts (e.g., brake-unit parts) for aircraft from powder components. To reduce wear, the mixture contains 60—70% iron, 13—16% copper, 8—10% barium sulfate, 3—7% graphite, 3—5% asbestos, and 2—5% silicon oxide. The mixture is compact molded at a pressure of 5.8 t/cm² and sintered at a temperature of 1060C and a pressure of 25 kg/cm². [LB]

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L 57596-65
ACCESSION NR: AP5017875

ASSOCIATION: none

SUBMITTED: 09May63 ENCL: 00 SUB CODE: MM, AC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4041

AC
Card 2/2

AUTHOR: Yurov, Yu. Ya. Professor ; Vinokurov, V. I.

TITLE: Increasing radiometer sensitivity by noise modulation of input signals

SOURCE: IVUZ. Radiotekhnika, v. 7, no. 3, 1964, 310-315

TOPIC TAGS: radiometer, periodic noise modulation, random noise modulation, gaussian noise, noise modulated radiometer, correlator, noise level reduction

ABSTRACT: Radiometer sensitivity may be increased by random-noise modulation (instead of periodic noise modulation) of its input signals and the subsequent [illegible] of a correlator based on the principle of [illegible] parameters (see Fig. 1 of the [illegible] reference noise are applied to [illegible] by the voltage of [illegible] and [illegible] power are amplified and [illegible] applied jointly to the detector. In addition to the set-noise, volt-

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L 8718-65
ACCESSION NR: AP4042847

age which varies in time with the random noise appears at the detector output. An ℓ-f amplifier with properly selected frequency band is used to eliminate distortion of the effect signal. The correlator represents a linear system in which the conductivity of the detector varied in time with the modulating signal. The effective signal and the variation of system parameters are correlated between themselves but not with the set-noise. This results in an increase of constant voltage at the correlator output. Set-noise is transformed by the correlator in the widest band of a random form. This expansion of noise-spectrum density at the output according to the frequency is possible only with noise modulation of the input signal. The noise power level corresponding to one cycle with noise modulation is less than that with periodic modulation. This resulted in a reduction of the noise level at the radiometer output, which corresponds to the gain in the signal-to-noise ratio. Orig. art. has: 3 figures and 25 formulas.

ASSOCIATION: none

SUBMITTED: 02Jul62 ATD PRESS: 3112 ENCL: 01

SUB CODE: EC NO REF SOV: 002 OTHER: 001

Card 2/3

L 8716 65

ACCESSION NR: AP4042847

ENCLOSURE: 01

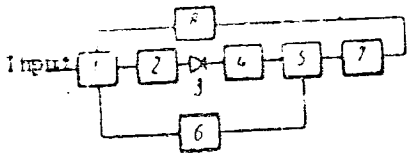

Fig. 1. Simplified block diagram of a radiometer

1 - Switch modulator; 2 - amplifier; 3 - detector; 4 - selective ℓ-f amplifier; 5 - correlator; 6 - quantized noise generator; 7 - ℓ-f filter; 8 - reference noise source and indicator

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ACCESSION NR: AT4017555 S/3074/62/000/047/0063/0072

AUTHOR: Vinokurov, V. I. (Candidate of Technical Sciences, Docent); Makkaveyev, V. I.

TITLE: Absolute measurement of the power of small harmonic signals with the aid of a radiometer

SOURCE: Leningrad. Elektrotekhnicheskiy institut. Izv., no. 47, 1962, 63-72

TOPIC TAGS: modulation radiometer, radiometer, null type modulation radiometer, microwave power measurement, noise power measurement, correlation function

ABSTRACT: A null-type modulation radiometer is proposed for the measurement of the power of a weak microwave harmonic signal by comparing it with the noise power radiated by a heated absorber. The detector of the apparatus receives alternately (at the modulation frequency): (1) the intrinsic noise voltage and the measured harmonic signal voltage, and (2) the intrinsic noise voltage and the fluctuating signal from a standard source. The conditions under which the error signal at the output of the apparatus is zero are calculated by determining the correlation

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ACCESSION NR: AT4017555

function of the current in the detector load. Orig. art. has: 1 figure and 20 formulas.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut (Leningrad Electrotechnical Institute).

SUBMITTED: 00Mar61 DATE ACQ: 20Mar64 ENCL: 01

SUB CODE: GE, SD NO REF SOV: 005 OTHER: 000

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