

USSR

UDC 612.55

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MAYSTRANK, YE. V., ZHARSKAYA, V. D., KARLOV, V. A., and SEMENOV, I. P., Chair of General Clinical Pathology, State Institute for Advanced Training of Physicians imeni S. M. Kirov

"The Participation of Nuclei of the Anterior Hypothalamus in Temperature Regulation During Cooling and Hypothermia in Monanesthetized Rats"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, No 1, 1970, pp 32-37

Abstract: In control rats with implanted electrodes but in otherwise intact brain, no significant changes took place in body temperature, gas exchange, or nature of the thermoregulatory response to external chilling. After destruction of the preoptic hypothalamus, indices of gas exchange, skin temperature, and behavior remained unchanged, but the rectal temperature decreased markedly. During moderate hypothermia (25° rectal temperature), comparatively weak functional shifts took place in the neurons of the preoptic region (swelling of the cytoplasm and nucleus, vacuolation of the l/2

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MAYSTRAKH, YE. V., et al., Leningrad, Fiziologicheskii Zhurnal  
SSR imeni I. M. Sechenov, No 1, 1970, pp 32-37

cytoplasm, hyperchromatosis, etc.). The most significant changes  
were observed in these neurons (especially in the medial nuclei)  
after the rats were allowed to warm themselves up after hypothermia,  
an indication that the anterior hypothalamus plays a role in tem-  
perature homeostasis.

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Acc. Nr: **AP0044212**

Ref. Code: UR 0239

PRIMARY SOURCE: *S* Fiziologicheskij Zhurnal, 1970, Vol 56,  
Nr 1, pp 32-37

ON THE ROLE OF ANTERIOR HYPOTHALAMUS NUCLEI  
IN THERMOREGULATION UNDER COOLING AND HYPOTHERMIA IN RATS  
Maystrakh, Ye. V.; Zharskaya, V. D.; Karlov, V. A.; Semenov, P. P.

From the Departm. of Clinical Pathology S. M. Kirov Postgraduate Medical Institute,  
Leningrad

Experiments in rats applying the method of electrolytic lesions, histological and histo-chemical study of nuclei of the anterior hypothalamus revealed their participation in the thermoregulating reaction under cooling and hypothermia of un-anaesthetized animals. A comparatively weak regulating influence of this area upon the processes maintaining temperature homeostasis and participation of the medial nucleus of the preoptic region into this reaction during the period of hypothermal self-restoration have been established.

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**19770698**

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"LUNA-17"

DESIGN AND OPERATION OF THE 'LUNA-17' STATION AND 'LUNOKHOD-1'  
PART I

Chapter I

GENERAL DESIGN AND CONSTRUCTION OF "LUNA-17" STATION

K. S. Anisov, V. I. Mstakov, O. G. Ivanov, I. K. Leonidov, G. N. Nikolayev,  
A. D. Dneprov, A. K. Aleksandrov, P. S. Semenov, A. P. Grachev, V. I. Romazov,  
G. B. Sheshterov, A. V. Hybakov, K. L. Bykov, N. I. Bol'shov, F. P. Yakovlev,  
V. K. Mashkin, M. B. Kolesov, and P. N. Naumov

1. Design

The "Luna-17" automatic station consists of two main parts: a unified landing stage and an automatic self-propelled vehicle, the lunokhod. The unified landing stage (Fig. 1) is an independent rocket unit designed for making flight trajectory corrections on the earth-moon path, putting the station into a lunar artificial satellite orbit, and implementing a prelanding circumlunar orbit and a soft landing on the lunar surface.

The unified landing stage includes a correcting-braking engine with a fuel system, two compartments which can be jettisoned, instrument compartments, and a landing apparatus.

The supporting element in the landing stage assembly is the set of main tanks, to which the engine, ejectable compartments and landing apparatus, are attached.

The main tanks unit consists of four spherical tanks for fuel joined into a single assembly by means of hollow cylindrical construction components. The two larger ones are pressurized instrument compartments holding the station flight control system. On the outside of the smaller ones there are spherical cylinders and tanks with compressed gas for air-jet microengines.

Translation of Russian Language monograph  
Peredvyzhnaya laboratoriya na Lune  
Lunokhod-1 1971, signed to press June 71  
resp. editor Academician A. P. Vinogradov;  
Munka Publishing House, Moscow 128 pp.  
JPRS 54, 525  
22 November 1971

Chapter 7

DETERMINING GEOMETRIC DIMENSIONS AND DISTRIBUTION OF CRATERS TRAVERSED BY "LUNOKHOD-1" ON LUNAR SURFACE

B. I. Garin, A. K. Leonovich, F. P. Pavlov, V. B. Georgiyev, and P. S. Semanov

Measurement of the angles of longitudinal  $\alpha$  and transverse  $\gamma$  tilting of the Lunokhod body and continuous transmission of this telemetric information to the earth make it possible at any moment during a communications contact to determine the slope of the lunar surface at the corresponding points S and the course  $\beta$  of the Lunokhod in situ. In turn, measurement of the corresponding points surface slopes as a function of the traversed path makes it possible to determine the path of its movement, beginning at the time of descent from the lunar station landing stage.

Investigations have demonstrated that the dimensions of craters -- diameter D, depth H, slope steepness  $\gamma$ , height  $h$ , wall and width  $\beta$  of the wall, if one exists, as well as their position relative to the Lunokhod movement trajectory, can be computed from the results of changes in S,  $\alpha$  and  $\gamma$  with sufficient accuracy. For this purpose a method was developed for determining the dimensions of craters on the lunar surface traversed by the Lunokhod on the basis of telemetric information from the sensors registering the Lunokhod path, banking and fore-to-aft listing.

The method has two modifications. Geometric and analytic, the latter making it possible to solve the problem of determining the parameters of lunar craters with a digital computer and to ascertain the characteristics of lunar relief in tempo with Lunokhod movement.

Figure 43 shows the trajectory of Lunokhod movement across a class-B crater at some distance from its center (a) and gives the results of measurements of fore-to-aft tilting  $\alpha$  and banking  $\gamma$  of the Lunokhod (b,c) obtained through telemetric channels from aboard the Lunokhod, as well as depicting (solid line) the longitudinal profile of the lunar surface, situated beneath the center of the Lunokhod, obtained by a graphic integration of the fore-to-aft tilting along the traversed path (d):

"LUNOKHOD-1"

Translation of Russian-Language monograph  
Peredvizhnaya laboratoriya na Lune  
Lunokhod-1, 1971, signed to press 4 June 71  
Izdatel'stvo Akademicheskoy A. P. Vinogradov  
Nauka Publishing House, Moscow 128 pp.

JPRS 54,525  
22 November 1971

USSR

SHCHELKUNOVA, S. A., DENCHEV, D. D., BADENKO, L. A., and SEMENOV, R. I.,  
Leningrad State University imeni A. A. Zhdanov and Physicotechnical Institute,  
Academy of Sciences USSR, Leningrad

"The Effect of Magnetic Fields on Escherichia coli K-12"

Moscow, Biofizika, Vol 15, No 4, Jul/Aug 70, pp 665-669

Abstract: Exposure of E. coli K-12 to permanent and pulsed magnetic fields (5,000 oe for 2 to 6 hours had no effect on reproduction of microorganisms. Exposure to a stronger permanent field (32,000 oe for 2 hours temporarily inhibited bacterial reproduction on meat-peptone agar, but during the next 2 hours the number of cells in the experiment was the same as in controls. Two hypotheses are advanced to account for this phenomenon: (i) some of the cells died while the surviving "magnetism-resistant" cells continued to multiply; (ii) all of the cells survived, but some of them lost their ability to divide when transferred to a solid nutrient medium. Oxygen uptake by the cells in the presence of glucose was somewhat impaired by 2 hours' exposure to magnetic fields. The effect was most pronounced after exposure to the pulsed magnetic field.

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1/1 019

TITLE--CALCULATION OF LINE STRENGTHS FROM THE LIFETIMES OF EXCITED STATES  
UNCLASSIFIED PROCESSING DATE--30OCT70  
-U-

AUTHOR--SEменов, R.I.

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COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(4), 630-5

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EXCITED STATE, LINE INTENSITY, CALCULATION, ELECTRON  
TRANSITION, OPTIC SPECTRUM, HALF LIFE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1428

STEP NO--UR/0051/70/028/004/0630/0635

CIRC ACCESSION NO--AP0118417

UNCLASSIFIED

USSR

UDC 616.853-009.24-07:616.831-073.97

SEMENOV, S. F., and KAMENSKAYA, V. M., Moscow Scientific Research Institute of Psychiatry, Ministry of Health RSFSR

"A Clinical Electroencephalographic Study of the Influence of Emotional Stress on the Convulsive Tendency of Epileptics"

Moscow, Zhurnal Nevropatologii i Psikhatrii imeni S. S. Korsakova, Vol 72, Vyp 2, 1972, pp 227-233

Abstract: One hundred epileptics were studied to determine the effect on convulsive tendency of mental and emotional stress, as a function of the location of the epileptogenic focus or foci. The histories of the patients included 32 of serious infection, 30 of trauma (11 at birth), seven of psychic trauma, and three of birth defects. For 28 patients the seizures were idiopathic. Each patient was studied between three and seven times, with photic and aural stimulation, as well as with having him listen to texts that were previously determined to have emotional content for him. Convulsive tendency was estimated from visual inspection of the EEG record. The results showed that the nature of the EEG reaction depended on the functional condition of the brain and on the location of the epileptogenic focus. Three groups were distinguished. In the first (37 patients having subcortical lesions) emotional stress was found to increase convulsive tendency, while  
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USSR

SEMENOV, S. F., and KAMENSKAYA, V. M., Zhurnal Nevropatologii i Psikhiiatrii imeni S. S. Korsakova, Vol 72, Vyp 2, 1972, pp 227-233

mental activity as well as light and sound stimulation at times suppressed it. In the second group (35 patients having cortical lesions -- 16 with temporal, 17 with frontal or fronto-parietal and two with occipital locations) a greater variety of reactions was noted. The convulsive activity of patients with a temporal focus was frequently increased by all of the stimuli used, but the response was very varied. The third group consisted of 28 patients with multiple cortical and subcortical foci and with varied clinical manifestations. These patients showed a variety of reactions, with basically an increase in the pathological activity.

It was concluded that the quality as well as the intensity of emotional factors may play a role in determining seizure tendency.

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- 76 -

USSR

UDC 533.652/.661.013

VERESHCHAGIN, I. F., SEMENOV, S. G.

"Investigation of the Perturbed Motion of a Liquid-Fuel Jet Aircraft"

V sb. Konf. po kolebaniyam mekh. sistem. Tezisy dokl. (Conference on Oscillations of Mechanical Systems. Abstracts of the Reports), Kiev, "Nauk. dumka", 1971, p 18 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B242)

Translation: The authors consider the motion of an aircraft which has a cylindrical fuel tank in which the liquid level varies. The vehicle undergoes small oscillations close to the programmed motion. The stability of vertical flight is analyzed. An optimum regulator is synthesized.

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USSR

UDC: 533.652/.661.013

VERESHCHAGIN, I. F., POPOVA, M. I., SEME NOV, S. G.

"Some Cases of Motion of an Aircraft With a Complete Internal Program"

Uch. zap. Perm. un-t (Scientific Notes of Perm' University), 1971, No 239, pp 171-181 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B342)

Translation: An aircraft is considered as a system of several connected bodies, one of which is a platform. It is assumed that the laws of motion for all these bodies relative to the platform are known. Some special cases are considered: 1) the system consists of a shell within which a sphere rotates at a constant angular velocity, the ellipsoid of inertia of the system being a sphere; 2) the vehicle is a solid of revolution within which a sphere rotates. For the given cases, integrals are derived which define the motion of the vehicle about the center of mass. G. S. Aronin.

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- 33 -

USSR

UDC 621.372.823

VESELOV, G. I. and SEMENOV, S. G., Academy of Sciences of the USSR in Moscow  
"On the Theory of a Round Wave Guide with an Eccentrically Placed Metal Conductor"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 4, April 1970, pp. 815-818

Abstract: The authors apply the method of partial regions to derive expressions for the critical conditions of a coaxial transmission line with an off center central conductor. In these calculations they assume a metal conductor inside a metal screen, the space between them being filled by a uniform isotropic medium. The process of derivation is as follows:

- 1) The longitudinal components of the electromagnetic field are expressed as series in complete systems of electrical and magnetic scalar functions; these involve linear combinations of Bessel and Neumann functions, taking into account the zero Dirichlet and Neumann boundary conditions at the surface of the central conductor, but not the screen.
- 2) Apply the zero Dirichlet and Neumann conditions at the surface of the screen, using the orthogonal relationships for exponential functions to

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VESELOV, G. I., et al, Radiotekhnika i Elektronika, Vol. 15, No. 4, April 1970, pp. 815-818

determine the desired theoretical values in the form of infinite determinants.

3) Applying the supplementary boundary conditions in the plane of symmetry of a coordinate system centered in the conductor, determine the longitudinal components of the electromagnetic field for either an electrical wall or a magnetic wall.

4) Combining Bessel functions and applying the zero boundary conditions at the screen surface and in orthogonal relationships for trigonometric functions, determine the critical conditions for a circular wave guide with a metal conductor displaced in the plane of the electrical or magnetic wall.

All the expressions given are in the form of infinite series which converge fairly rapidly; the authors give an example in which they calculate the critical parameters of a circular wave guide with an eccentric internal conductor for oscillations of the  $kE_{01}$  type (displacement of the conductor in the plane of the magnetic wall) and the  $kE_{11}$  type (displacement of the conductor in the plane of the electrical wall). They found that the displacement of the internal metallic conductor leads to a substantial reduction in the critical frequency for  $kE_{01}$  and  $kE_{11}$  oscillations. An analysis of the convergence process indicates that the relative error of calculation in the

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USSR

VESELOV, G. I., et al, Radiotekhnika i Elektronika, Vol. 15, No. 4, April 1970, pp. 815-818

second approximation is a few percent, and in the third approximation it does not exceed 0.5% over a wide range of system parameters.

3/3

USSR

UDC 621.391.677.4

KULAKOV, S. V., LEKS, A. G., SEMENOV, S. P., and UL'YANOV, G. K.  
"Ultrasonic Signal Processer"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 33, 1971, p 174

Abstract: Used for processing the signals of phased antenna gratings by restoration of the wave front, this device contains a radiating acoustical grating, an ultrasonic polygon, a multichannel amplifier, an indicator, and a system for computing the acoustical field distribution. The computing system takes the form of a receiver acoustical grating whose elements are connected to the television-type indicator, and thus simplifies the construction and reduces its cost. The patent is claimed by the Leningrad Institute of Aviation Instrument Construction.

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- 4 -

USSR

UDC 621.643.001.5

MANDEL'BERG, S. L., SEMENOV, S. YE., and BOGACHEK, YU. L., Institute of Electric Welding imeni Ye. O. Paton, Kiev

"Increasing the Impact Strength of Gas Pipe Weld Metal"

Moscow, Stroitel'stvo Truboprovodov, No 7, Jul 71, pp 23-26

Abstract: The article describes work performed at the Institute of Electric Welding imeni Ye. O. Paton to estimate the impact strength level of the weld metal of gas pipes and to determine ways of increasing it. Tests of expanded 17G1S steel pipes showed that the impact strength of the welds at  $-40^{\circ}$  C was considerably less than for hot-straightened or thermally strengthened pipes. Low impact strength values are observed at  $-40$  and  $-60^{\circ}$  C right after welding. Expansion causes cold deformation of the metal, which produces an additional reduction in the impact strength of the welds. To increase the impact strength of the metal of the deformed welds, a more homogeneous structure with refined grains must be obtained. For expanded 17G1S steel pipes

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MANDEL'BERG, S. L., et al., Stroitel'stvo Truboprovodov, No 7, Jul 71, pp  
23-26

this can be done by using a special electrode wire alloyed with molybdenum  
and nickel (Sv-10NM or Sv-08KhN2M wire) in conjunction with a high-silica  
flux, as well as by postheating under normalization or temper quenching con-  
ditions.

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UR9027

AUTHOR-- RUMYANTSEV, I., DIRECTOR, SCIENTIFIC-RESEARCH INSTI-  
TUTE OF CHEMICAL MACHINE CONSTRUCTION /SRICM/

TITLE-- THE EFFECT OF RESEARCH

NEWSPAPER-- VECHERNYAYA MOSKVA, JANUARY 13, 1970, P 2, COLS 2-5

ABSTRACT-- THE ARTICLE IS A VERY BRIEF REVIEW OF THE ACTIVITIES  
OF THE SRICM. THE INSTITUTE IS THE LEADING ORGANIZATION IN THE  
FIELD OF MACHINE DESIGN FOR CHEMICAL INDUSTRY. IT GUIDES THE TECHNO-  
LOGICAL POLICIES AND COORDINATES THE EFFORTS OF OTHER INSTITUTES  
AND PLANTS. THE FOLLOWING STAFF MEMBERS OF THE INSTITUTE ARE  
MENTIONED AS ACHIEVERS-- R. KAZAKOV, S. GDALIN, V. SEMENOV,  
YU. KIPRIANOV, YE. CHUVPILO, AND V. ZAVAROV. ALL ARE MEMBERS OF THE  
COMMUNIST PARTY.

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ORESHKIN, P.T., ~~SEYENOV, V.A.~~, MITROPANOV, O.V.

UDC 621.382.2

"Active Elements Based On Chalcogenide Glasses (Short Communication)"

Elektron.tekhnika. Nauch.-tehn.sb. Mikroelektronika (Electronics Technology. Scientific-Technical Collection. Microelectronics), 1971, No 3(29), pp 35-37  
(from RZh:Elektronika i yeye primeneniya, No 2, Feb 72, Abstract No 2E165)

Translation: The switching parameters are considered of bead elements based on glasses with a different temperature of softening, in the composition of which Ge, Se, As, Si, and Ga enter. V.k.

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- 96 -

USSR

SIMONOV, V. D., ~~SEMENOV, V. A.~~ FOMINYKH, M. V.

"Polarographic Determination of Tetrachloromuconic Acid Isomers"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleeva, [Works of Petrochemical Section, Vashkir Republic Administration of All-Union Chemical Society imeni d. I. Mendeleev], Vol 6, 1971, pp 339-345. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N694 by N. S. Ivanova).

Translation: Polarographic studies of cis-cis (I) and trans-trans (II) isomers of tetrachloromuconic acid in different electrolytes (0.1) n.  $\text{HClO}_4$  and 0.1 M LiCl) showed: a) I is more easily reduced than II; b) di-ME I is adsorbed more easily than di-ME II. A method is suggested for polarographic analysis of II in the reaction mass as it is produced.

I/I

172 021

TITLE--TREATMENT OF WOUNDS AND THEIR COMBINATION WITH ACUTE RADIATION SICKNESS -U- UNCLASSIFIED PROCESSING DATE--11DEC70

AUTHOR--SEFENOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--OKTOP TRAVMATOL PROT 31(1): 88-92. 1970.

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIATION SICKNESS, WOUND, DRUG TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605015/F04 STEP NO--UR/9115/70/031/001/0008/0092

CIRC ACCESSION NO--AP0140637

UNCLASSIFIED

CIRC ACCESSION NO--AP0140637  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--11DEC70

ABSTRACT. IN A SURVEY OF SOVIET AND FOREIGN LITERATURE ON CLINICAL AND EXPERIMENTAL STUDIES OF THE TREATMENT OF WOUNDS COMBINED WITH ACUTE RADIATION SICKNESS, IT IS CONCLUDED THAT MOST SUCH WORKS PROVIDE CONVINCING PROOF THAT IT IS IMPOSSIBLE TO EXPECT AN EFFECT FROM USING A PRIMARY CLOSED STITCH UNDER FIELD CONDITIONS ESPECIALLY IN CASES OF INJURY COMPLICATED BY RADIATION BURNS. UNDER MODERN CONDITIONS IT IS LIKEWISE UNJUSTIFIED TO EXPECT THE RAPID HEALING OF WOUNDS AFTER THE USE OF ANTIBIOTICS. THE PROBLEM OF SURGICAL TACTICS FOR WOUNDS ARE COMBINED RADIATION BURNS MUST BE SUBJECTED TO A DETAILED AND COMPREHENSIVE STUDY.  
FACILITY: CENT. INST. TRAUMATOL.  
ORTHOP., MIN. HEALTH USSR, MOSCOW, USSR.

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--LOCAL BLOOD CIRCULATION IN ADULT PATIENTS WITH ASEPTIC NECROSIS OF THE FEMORAL HEAD -U-  
AUTHOR--(03)-MIKHAYLOVA, N.M., SEMENOV, V.A., YANOVSKAYA, E.M.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 5, PP 40-44  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE DISEASE, NECROSIS, DRUG TREATMENT, SODIUM ISOTOPE, HEMODYNAMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FKAME--3004/0741

STEP NO--UR/9115/70/000/005/0040/0044

CIRC ACCESSION NO--AP0131336

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--ZONDV70

CIRC ACCESSION NO--AP0131356

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. PATIENTS WITH ASEPTIC NECROSIS OF THE FEMORAL HEAD SHOW MARKED DISTURBANCES OF THE LOCAL CIRCULATION. THE DEGREE OF IMPAIRMENT OF LOCAL TISSUE BLOOD FLOW WAS INVESTIGATED WITH AID OF INTRACASEOUS INJECTION OF MICROAMOUNTS OF SODIUM 24 AND EXTERNAL ACTIVITY COUNT USING A RADIOMETER. CHARACTERISTIC OF PATIENTS WITH ASEPTIC NECROSIS OF THE FEMORAL HEAD WAS A MARKED LENGTHENING OF TIME OR SODIUM 24 EXCRETION INJECTED INTO THE GREATER TROCHANTER OF THE DAMAGED JOINT IN THE AMOUNT OF 1-2 MICROCURIES IN COMPARISON WITH THE TIME OF ITS EXCRETION IN NORMAL PERSONS, AND IN COMPARISON WITH THE UNDAMAGED SYMMETRIC JOINT IN THE GIVEN PATIENT. IN PATIENTS WITH BILATERAL INVOLVEMENT, THE SODIUM 24 EXCRETION TIME WAS MORE PROTRACTED ON THE SIDE OF BIGGER DAMAGE IN COMPARISON WITH THE TIME OF ITS EXCRETION FROM LESS DAMAGED JOINT. PROLONGATION OF THE ISOTOPE EXCRETION TIME IS AN EVIDENCE OF GREATER OR LESSER DISTURBANCE OF LOCAL CIRCULATION, SLOWING DOWN OF THE VENOUS OUTFLOW. THESE DATA CORRELATE WITH DATA OF PLETHYMOGRAPHY AND OTHER HEMODYNAMIC INDICES IN PATIENTS WITH ASEPTIC HIP NECROSIS.

FACILITY: TSENTRAL'NOGO INSTITUTA  
TRAVMATOLOGII I ORTOPEDI.

UNCLASSIFIED



1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--THE CLINICAL PICTURE OF DIFFUSE CARCINOMATOSIS OF THE BRAIN AND  
SPINAL PIA -U-  
AUTHOR-(02)-SEMENOV, V.A., GUSEVA, L.L. S  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,  
VOL 70, NR 5, PP 659-664  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--TUMOR, BRAIN, SPINAL CORD, METASTASIS, PANCREAS, LUNG, KIDNEY,  
CENTRAL NERVOUS SYSTEM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/0255 STEP NO--UR/0246/70/070/005/0659/0664  
CIRC ACCESSION NO--AP0117507  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 031

CIRC ACCESSION NO--AP0117507

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ON THE GROUNDS OF 18 PERSONAL OBSERVATIONS AND LITERATURE DATA THE AUTHORS DISCUSS THE CLINICAL PICTURE OF DIFFUSE CARCINOMATOSIS OF THE BRAIN AND SPINAL PIA. A CORRECT INTRAVITAL DIAGNOSIS WAS MADE IN 9 OF THE 18 CASES. PATHOMORPHOLOGICAL STUDIES IN 10 CASES DISPLAYED A PRIMARY VENTRICULAR TUMOR, IN 1 CASE, A TUMOR OF THE PANCREAS, IN 4 CASES, TUMORS OF THE BRONCHI AND IN 1 CASE, A HYPERNEPHROID TUMOR OF THE KIDNEY. IN 2 CASES PRIMARY TUMORS WERE NOT SEEN. THE HISTOLOGICAL PICTURE OF THE METASTASIS CORRESPONDED TO THE CLINICAL PICTURE OF THE PRIMARY TUMOR. THE MOST TYPICAL CLINICAL SYMPTOMS WERE THE FOLLOWING: SEVERE HEADACHES IN A COMBINATION WITH A MENINGEAL SYNDROME, MENTAL CHANGES, DISORDERS OF THE CRANIAL INNERVATION, THE SPINAL RADICULAR SYNDROME, A PROGRESSIVE DEVELOPMENT OF THE DISEASE AND A DEPICTION OF TYPICAL CANCER CELLS IN THE CSF.

FACILITY: KLINIKA NERVNYKH BOLEZNEY MOSKOVSKOGO OBLASTNOGO N-I KLINICHESKOGO INSTITUTA IM. VLADIMIRSKOGO.

UNCLASSIFIED

USSR

UDC 617-001.28-036.11-06:617-001.32

~~SEMENOV, V. A.~~, UL'YANOV, M. I., TORBENKO, V. P., NAZAROV, V. A.,  
GORYACHEV, A. N., and YANOVSKAYA, E. M., Radiology Department,  
Central Institute of Traumatology and Orthopedics, Academy of Medical  
Sciences USSR

"Symptoms and Treatment of Radiation Lesions Combined with Injury  
Due to Compression of Soft Tissues"

Moscow Ortopediya, Travmatologiya i Protezirovaniya, No 1, 1970, pp  
11-17

Abstract: Following whole-body irradiation (400 r) of a group of  
dogs, the soft tissues of their left femurs were slowly crushed (over  
a period of 6 hours) with a special press. The mortality rate from  
traumatic shock was much lower in the experimental animals than in  
controls (compression without irradiation) and their general resis-  
tance to the effects of crushing was higher during the first few  
hours after the compression period. On the 2nd and 3rd days the con-  
dition of both groups of animals was equally poor, but the improve-  
ment that was manifested in both groups on the 4th and 5th days pro-  
gressed only in controls. By the 8-10th day the condition of the  
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USSR

SEMENOV, V. A., et al., Moscow, Ortopediya, Travmatologiya i Pro-  
tezirovaniya, No 1, 1970, pp 11-17

experimental animals deteriorated sharply, and at the height of  
radiation sickness mortality increased sharply. Treatment of human  
beings suffering from crushing of soft tissues after exposure to  
high levels or radiation should take cognizance of the slow develop-  
ment of shock, changes in the hematological system, prolonged hypo-  
proteinemia, altered critical activity, etc.

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- 44 -

USSR

UDC 617-001.4-06:617-001.28

~~SEMENOV, V. A.~~, Central Institute of Traumatology and Orthopedics,  
Academy of Medical Sciences USSR

"Treatment of Wounds Combined with Radiation Sickness"  
Moscow, Ortopediya, Travmatologiya i Protezirovaniya, No 1, 1970,  
pp 88-92

Abstract: In a discussion of sound and feasible surgical procedures in the event of nuclear attacks resulting in numerous casualties involving various kinds of wounds plus radiation lesions, the author cites the literature and his own experiments to show that the immediate application of primary sutures, even when combined with antibiotics, is likely to be ineffectual in promoting healing. In his experiments, irradiated dogs (400 r) received a knife wound (which was immediately sutured) on the femur under sterile conditions. Yet 6 to 7 days later the margins of the wound had pulled apart and were covered with serous deposits. Acute radiation sickness then set in and it was not until days 25-26 that granulations appeared and the wound healed by secondary intention. In controls (nonirradiated dogs), however, the wound healed on the 6th or 7th day by primary intention.

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- 43 -

UDC: 550.837.73

USSR

RODIONOV, A. N., SEMENOV, V. D.

"A Geoelectric Prospecting Method"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 28, 1970, Class 21, filed 27 Feb 68, p 79

Abstract: This Author's Certificate introduces a geoelectric prospecting method based on the study of a rotating electromagnetic field produced by ungrounded circuits, where the current in this field varies in magnitude and in direction. As a distinguishing feature of the patent, the spatial position of electrically conducting objects is determined by measuring the components of the electromagnetic field for each value of the magnitude and direction of the currents in the circuits. Curves are then plotted which are used to determine the presence and spatial location of the objects being sought.

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UNCLASSIFIED

PROCESSING DATE--13NOV70

1/2 017

TITLE--IN THE INFLUENCE OF RADIOIODINE THERAPY ON THE LEVEL OF SH GROUPS  
IN THE BLOOD SERUM OF PATIENTS WITH TOXIC GOITER -U-

AUTHOR--SEMENOV, V.D.

S

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 6, PP 58-62

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, NUCLEAR SCIENCE AND  
TECHNOLOGY  
TOPIC TAGS--BLOOD SERUM, GOITER, RADIOACTIVE ISOTOPE, IODINE ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1510

STEP NO--UR/0241/70/015/006/0058/0062

CIRC ACCESSION NO--AP0123905

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128905

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDIES OF THE CONTENT OF SH GROUPS IN THE BLOOD SERUM OF 123 PATIENTS WITH TOXIC GOITER REVEALED A MARKED INCREASE OF THIS INDEX (MAINLY AT THE EXPENSE OF SH GROUPS OF ALBUMINS). THE INTENSITY OF INCREASE IN THE CONCENTRATION OF SH GROUPS CORRELATED WITH THE SEVERITY OF THE CLINICAL COURSE OF THE DISEASE. AFTER RADIOIODINE ADMINISTRATION TO PATIENTS THIS INDEX WAS STUDIED 1, 3, 7 AND 10 DAYS LATER. AT THE TIME OF TREATMENT THERE WAS SEEN A REDUCTION IN THE LEVEL OF SH GROUPS STARTING FROM THE THIRD DAY OF TREATMENT AND THEN A SUBSEQUENT RISE. IN THE ALBUMIN FRACTION OF THE SERUM DURING THE FIRST DAY OF TREATMENT THE AUTHOR OBSERVED A MARKED INCREASE IN THE CONTENT OF SH GROUPS WITH A SUBSEQUENT SHARP DECLINE, WHEREAS THE GLOBULIN FRACTION OF THIS INDEX REMAINED AUGMENTED. THE REFERRED TO CHANGES ARE PARTICULARLY MARKED IN A SEVERE FORM OF TOXIC GOITER AND ARE SIGNIFICANTLY WEAKER IN A MILD COURSE. FACILITY: KHAR'KOVSKIY NAUCHNO ISSLEDOVATEL'SKIY INSTITUT MEDITSINSKOY RADIOLOGII.

UNCLASSIFIED



Immunology

USSR

UDC 615.371.078

VASIL'YEVA, I. G., SEMENOV, V. F., GRACHEV, V. P., and POPOVA, V. D., Central Institute for the Advanced Training of Physicians, Institute of Poliomyelitis and Viral Encephalitides, Academy of Medicine USSR

"Potential Evaluation of Vaccines on the Basis of Autoantibody Formation"

Moscow, Laboratornoye Delo, No 6, 1972, pp 368-369

Abstract: Investigations were conducted with nine commercial vaccines to determine whether autoantibodies are a possible complication in vaccine reactions. Experimentally, smallpox was introduced into scarified skins of rabbits, while 200-300 g guinea pigs received subcutaneously 1 ml of Vi antigen, measles vaccine, live polio virus, typhoid vaccine, NIISI vaccine, Fermi's (rabies) vaccine, monovalent pertussis vaccine, or AKDS vaccine. When tested with autologous erythrocytes, the results showed that the smallpox vaccine caused the appearance of autoantibody in all 15 rabbits immunized. Measles, polio, typhoid, and NIISI elicited the appearance of antierythrocyte antibody in 21%, 33%, 50%, and 58% of the guinea pigs immunized, respectively. Only the Vi antigen vaccine did not induce the formation of autoantibodies. In the case of the polio and measles vaccines autoantibodies appeared in 2-3 weeks and persisted until the 30th postimmunization day. Autoantibodies to erythrocytes disappeared in 1.5 months in animals immunized with Fermi's or smallpox vaccines,

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USSR

VASIL'YEVA, I. G., et al., Laboratornoye Delo, No 6, 1972, pp 368-369

while persisting for over 8 weeks in NIISI immunized animals. In addition, all animals formed antiliver antibodies; furthermore, Fermi's vaccine, monovalent pertussis, and AKDS elicited antibodies against splenic tissue. Autoantibodies against the kidney were induced by Fermi's, NIISI, and AKDS vaccines, antibodies against the heart were formed by animals immunized with Fermi's vaccine and AKDS, antibodies against lung tissue were formed by animals immunized with AKDS and monovalent pertussis vaccine, and antibodies against the brain were formed by guinea pigs immunized with Fermi vaccine. The data indicate that the formation of autoantibodies following vaccination is a real phenomenon and constitutes an important parameter in the evaluation of vaccine reaction.

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SEMENOVA, V.I.

RDP/18-760/S.M.K. 72  
Ducya 71

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Semenova, V. I. Electromagnetic wave reflection during oblique incidence on a moving ionization front. IYUZ Radiotek. no. 5, 1972, 665-674.

An extensive theoretical analysis is given of the interaction of a monochromatic wave with a plasma boundary. The particular case considered is of inclined incidence of monochromatic TE and TM waves upon a sharply defined boundary of a plasma half-space, where the plasma is generated by ionizing radiation acting on a neutral gas. For simplicity the incident pulse is assumed arbitrarily narrow and the dielectric constant outside the plasma is taken to be unity. It is shown that when the E-field normal to plane of incidence, the solution for the inclined incidence case is essentially the same as for normal incidence. With the TM wave, however, inclined incidence is shown to generate two axial waves in addition to the transverse ones, at any given frequency of the incident wave. Formulas for the reflection and transmission of the latter are obtained and analyzed in terms of the idealized plasma parameters.

Kuznetsov, A. Ya., I. S. Yarasheva,  
A. A. Poplavskiy, and G. P. Tikhomirov.  
Destruction of reflective dielectric coatings  
by laser radiation. OMP, no. 3, 1972, 39-42.

The resistance of reflective coatings to laser radiation was studied using zinc sulfide and magnesium fluoride coatings. The coatings were applied by thermal evaporation in a vacuum, and the reflection factor was  $R = 90\%$  at  $\lambda = 0.7 \mu$ . The flux falling upon the specimen was controlled

UNCLASSIFIED

PROCESSING DATE--23 OCT 70

1/2 038

TITLE--INVESTIGATION OF THE INDICATED IGNITION DELAY PERIOD IN A HIGH  
SPEED MULTIFUEL DIESEL WITH THE COMBUSTION CHAMBER IN THE PISTON HEAD

AUTHOR--SEMENOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY, MASHINOSTROYENIYE,  
NO. 1, 1970, PP 81-85

DATE PUBLISHED-----70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--DIESEL ENGINE, COMBUSTION CHAMBER, GASOLINE FUEL/(U)D5 DIESEL  
FUEL, (U)A72 GASOLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1985/0489

STEP NO--UR/0145/70/000/001/0081/J085

CIRC ACCESSION NO--A0100964

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NU--AT0100964

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF EXPERIMENTAL INVESTIGATIONS OF THE INDICATED IGNITION DELAY PERIOD OF A HIGH SPEED MULTIFUEL DIESEL ENGINE WITH THE COMBUSTION CHAMBER IN THE PISTON HEAD ARE EXAMINED. THE STUDY TAKES INTO ACCOUNT DESIGN AND OPERATING FACTORS OF THE ENGINE AND MAKES A COMPARISON OF THESE FACTORS WITH SIMILAR RELATIONSHIPS FOUND IN THE OPERATION OF AN ENGINE EQUIPPED WITH A GESSEL'MAN TYPE COMBUSTION CHAMBER. THE STUDIES WERE PERFORMED ON A FOUR CYCLE, ONE CYLINDER DIESEL WITH A CYLINDER DIAMETER OF 150 MM AND A STROKE OF 150 MM. STANDARD DS DIESEL FUEL AND A-72 AUTOMOTIVE GASOLINE WERE TESTED IN FOUR DIFFERENTLY SHAPED PISTON HEAD COMBUSTION CHAMBERS. GRAPHS REFLECTING THE RELATIONSHIP OF IGNITION DELAY TO THE INITIAL FUEL INJECTION ANGLE ARE PRESENTED FOR THE ABOVE FUELS. FOR HIGH COMPRESSION RATIOS (UP TO 17:1), THE DELAY VALUES FOR DIESEL FUEL AND GASOLINE DIFFER INSIGNIFICANTLY. THEREFORE, IN AN EFFORT TO IMPROVE THE MULTIFUEL CAPABILITIES OF AN ENGINE OF THE TYPE STUDIED AND, CONSEQUENTLY, THE STARTING CHARACTERISTICS, AN INCREASE IN COMPRESSION RATIO ABOVE 17-17.5:1 IS RECOMMENDED. THE STUDIES PERFORMED AND THE EQUATIONS DERIVED CAN BE USED TO DETERMINE IGNITION DELAY IN NEWLY DESIGNED HIGH SPEED FUEL INJECTED ENGINES AND FOR ROUGH CALCULATION OF DIESEL IGNITION DELAY UNDER HIGH PRESSURE AND TEMPERATURE CONDITIONS IN THE CYLINDER.

UNCLASSIFIED

USSR

UDC 621.382.2.001.5

LIKHAREV, K. K., SEMENOV, V. K.

"Electrodynamic Properties of Superconducting Point Contacts"

Moscow, Radiotekhnika i Elektronika, No 11, Nov 71, pp 2167-2172

Abstract: The behavior of a superconducting point contact conforming to the Aslamazov-Larkin model in a nonresonance wave system is theoretically analyzed. It is shown that the powers of Josephson radiation from point superconducting contacts achieved up to the present ( $\sim 10^{-10}$  W in the 3-cm band) are not nearly the limiting values attainable. Low-resistance electrodynamic systems must be used to reach higher powers, i. e. the wave impedance of the line must be much less than the contact resistance. Calculations are presented for the maximum power radiated by the contact, and for the behavior of the contact when subjected to an external harmonic signal. The authors thank V. N. Gubankov, G. F. Leshchenko, N. M. Margolin and V. V. Migulin for discussing the paper. Four figures, bibliography of sixteen titles.

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- 19 -

USSR

UDC: 621.372.4.001.5

LIKHAREV, K. K., SEMENOV, V. K.

"Concerning the Properties of a Superconducting Point Contact Enclosed in a Cavity"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1983-1986

Abstract: A study is made of the peculiarities of Josephson emission of a superconducting point contact within the framework of the Aslamazov-Larkin model when the contact is enclosed in a cavity. This hook-up is the most convenient way to match contacts with low normal impedance of 0.01-1 ohm to conventional electrodynamic microwave systems. It is found that a maximum power of approximately  $10^{-8}$  W can be coupled out of a Josephson contact in a cavity resonator. The authors thank V. N. Gubankov, L. S. Kuz'min and V. V. Migulin for discussing the work.

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- 2) -

USSR

UDC: 621.791.793

SEMENOV, V. M., All-Union Scientific Research, Planning and Design Institute of Hoisting and Conveying Machinery, Loading, Unloading and Warehouse Equipment and Containers, Kramatorsk, and YEREGIN, L. P., and MALAY, A. YE., New Kramatorsk Machinery Plant imeni V. I. Lenin

"Deformations During the Electro-Slag Welding of Alloyed Grades of Steel"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 73, pp 52-54

Abstract: The authors study the nature and the magnitude of the shift in edges which are to be joined in conjunction with the necessity for the electro-slag welding of large products made from the 20KhNMF, 25Kh2GAT, and 20Kh2MA high-strength grades of steel. For comparison, the authors studied deformations during the electro-slag welding of dimensionally analogous parts made from the 25GS grade steel. Marks were made along the seams and measured for changes before, during and after welding. The results show that the magnitude and the nature of the shifting of the edges are diverse during the electro-slag welding of annular and straight seams. The results provided correction factors for the erection clearances between the parts to be welded. These data may also be useful in developing the technology for the electro-slag welding of other parts. The existing data have made it possible to weld a large hydraulic press and a hammer.

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- 57 -



USSR

UDC 621.791.793.011

SEMENOV, V. M., Engineer, Novokramatorskiy Machine Building Plant imeni V. I. Lenin, and GEL'MAN, A. S., Doctor of Technical Sciences, and RYMKEVICH, A. I., Candidate of Technical Sciences, Central Scientific Research Institute of Heavy Machine Building

"Temperature Interval of Metal Brittleness During Electroslag Welding"

Moscow, Svarochnoye Proizvodstvo, No 10, 1973, pp 10-11

Abstract: The temperature interval of brittleness and area of hot crack nucleation during electroslag welding were studied to investigate the process of hot crack formation and to develop measures of preventing them. Tests were made with steel St3 using welding wires Sv-10G2 and O8KhN2M and flux AN-348. It was found that the surface temperature of the slag bath was almost 1400°C and rises to 1600°C and higher during the welding process. To determine the critical time interval during which the temperature interval of brittleness exists, plates measuring 20 x 80 x 150 mm were electroslag welded up to the instant when the surface of the metal bath reached the top edge of the plates. This moment was fixed by an electric sensor which is short circuited and automatically stops the welding process and, within specified time intervals (10, 20, 30, 40 and 50 sec), the seam deformation mechanism is switched on with  
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USSR

SEMENOV, V. M., et al., Svarochnoye Proizvodstvo, No 10, 1973, pp 10-11

certain force from which the time interval for minimum rate of seam deformation leading to crack formation can be determined. Hot cracks develop after 20 seconds with the largest cracks appearing after 30-40 seconds. The area of crack nucleation was found to be the crystallization front. 4 figures, 2 bibliographic references.

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USSR

UDC 621.791.79.052.011:669.15-194:621.3.052.1

SEMENOV, V. M., and KOLESNIK, V. P. (New Kramatorsk Machinery Plant imeni V. I. Lenin), Engineers, and POKATAYEV, S. V. (Central Scientific Research Institute for Heavy Machine Building), Candidate of Technical Sciences

"Properties of Welded Joints Made of Type 25GS Vacuum Steel by Electric Slag Method"

Moscow, Svarochnoye Proizvodstvo, No 2, Feb 71, pp 35-37

Abstract: Studies of the influence of vacuum processing of steel on the properties of welded joints produced by the electric slag method were performed in order to select a welding wire to allow production of seam metal with mechanical properties (after tempering) equal to the properties of the base metal. The influence of temperature, holding time, and cooling rate of tempering on the properties of the base metal and near-seam zone was studied. It was found that casting 25GS steel in a vacuum significantly improves the impact toughness of the base metal and the near-seam zone of welded joints without subsequent heat treatment. Heat treatment does not change the mechanical properties of 25GS steel preliminarily subjected to isothermal annealing. Earlier ideas concerning the technology of production and limitations of carbon content in 25GS steel were confirmed.

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1/2 027 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--ELECTROSLAG WELDING OF CYLINDERS WITH WELDING BOTTOMS -U-  
AUTHOR--(02)-SEPEYEV, V.F., GARMASH, N.K. S  
COUNTRY OF INFO--USSR  
SOURCE--RUSSIA, SVARUCHIYE PROIZVODSTVO, NO. 5, 1970, PP 42-43  
DATE PUBLISHED-----70  
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--STEEL WELDING, ALLOY STEEL, WELDING EQUIPMENT, METALLURGIC  
PLANT, MACHINERY MANUFACTURING PLANT, CYLINDRIC SHELL STRUCTURE/(U)A74)  
WELDING DEVICE, (U)TSHS300 3 WELDING TRANSFORMER, (U)25GS ALLOY STEEL  
CENTRAL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605041/B11 STEP NO--UR/0135770/000/005/0042/0043  
CIRC ACCESSION NO--AP0142721

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--1109070

2/2 027

CIRC ACCESSION NO--AP0142721

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LARGE CYLINDERS OF THIS TYPE CANNOT BE MADE BY SEAMLESS FORGING BECAUSE OF INEFFICIENT OR UNAVAILABLE PRESS FORGING OR FURNACE EQUIPMENT. THEY ARE THEREFORE MADE BY WELDING FORGED SHELLS AND A BOTTOM. THIS ARTICLE IS DEVOTED TO CYLINDERS OF THIS TYPE, MANUFACTURED BY NOVOKRAMATOR PLANT, AND GIVES THE DETAILS OF ITS CONSTRUCTION. THE CYLINDER IS MADE OF 25GS STEEL, ALLOYED IN A MARTIN FURNACE, AND CAST IN A VACUUM. THE MECHANICAL CHARACTERISTICS OF THE CYLINDER SHELL ARE GIVEN IN ADDITION TO A PROFILE AND CROSS SECTION VIEW OF THE CYLINDER AND THE WEIGHT AND CHEMICAL COMPOSITION OF ITS VARIOUS PARTS. BECAUSE OF THE CYLINDERS' LARGE DIMENSIONS, THE WELDING WAS DONE ON EQUIPMENT OF THE A-741 TYPE, WITH THE WELDING CURRENT FED FROM TWO TSHS-3000-3 TRANSFORMERS CONNECTED IN PARALLEL. MEASUREMENTS WERE MADE OF THE DEFORMATIONS CAUSED DURING WELDING. THE RESULTS OF THESE MEASUREMENTS PERMITTED A 25PERCENT REDUCTION IN TECHNICAL ALLOWANCES IN THE MECHANICAL PROCESSING UNDER WELDING OF CYLINDER PRODUCTS AFTER THE INITIAL CYLINDER. FACILITY: NOVOKRAMATOR MACHINE CONSTRUCTION PLANT IMENI V. I. LENIN.

UNCLASSIFIED

USSR

SEMENOV, V. M., PAVLOV, A. P.

"Theoretical Analysis of the Process of Rupture of Dielectric Rock by the High Frequency Contact Method"

Termomekh. Metody Razrusheniya Gorn. Porod. Ch. 2 [Thermomechanical Methods of Rock Destruction, Part 2 -- Collection of Works], Kiev, Nauk. Dumka Press, 1972, pp 64-68, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 V741, by E. L. Aero).

Translation: The strength of a circular plate with a cylindrical electrode at its center, heated through its entire volume by dielectric losses, is studied in order to establish the conditions of rupture of dielectric rock in a high frequency electromagnetic field. The non-connected thermoelastic problem is solved with stress-free ends and side surface, ignoring heat transfer processes when the constants of the rock are independent of temperature. It is considered that the rupture process begins when the thermoelastic stresses  $\sigma_{\phi\phi}$  reach the limiting rupture value either on the side surface or within the plate in the area of the maximum of the radial distribution. The corresponding heating times are looked upon as rupture times. Their dependence on frequency and amplitude of the electromagnetic field, dielectric, thermal and mechanical properties of the rock, as well as geometry of 1/2

USSR

SEMENOV, V. M., PAVLOV, A. P., Termomekh. Metody Razrusheniya Gorn. Porod. Ch. 2, Kiev, Nauk. Dumka Press, 1972, pp 64-68.

the plate is studied. The power consumption of rupture is calculated as the ratio of the energy expended in heating to rupture to the volume of the specimen. It is shown that the theoretical power consumption agrees with an empirical formula produced for an irregular sense.

2/2

- 91 -

СЕНТЕНДУ, У. П.

AA0052672

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 2-70

243407

TIE-ROD FOR AIRCRAFT CONTROL SYSTEMS

comprises metal tubes, tips and inserts with ball bearings, differing in being of two tubes of different diameters as described below, to improve reliability by doubling at any cross-section. The device consists of outer and inner tubes 1 and 2, fitted one inside the other with a clearance. On one end of the tubes is fitted an adjustable cap by means of rivets 3. The cap consists of outer and inner cylinders 4 and 5 connected by a thread. Hollow lug-bolt 6, connected to insert 7, is screwed into inner cylinder 5. In the longitudinal aperture of bolt 6 is fitted tie bolt 8, the head of which is against the face of the hollow bolt, and the other end screwed into the insert and locked by split pin 9. On the

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AAQ052672

other end of the tube is a non-adjustable cap comprising inner and outer cylinders 11 and 10, pre-connected by bolt 12, which at the same time screws into insert 13 and is locked by split pin 14. The adjustable cap is adjusted for the length of the tie-rod, tightened by locknut 15 and locked by tab washer 16.

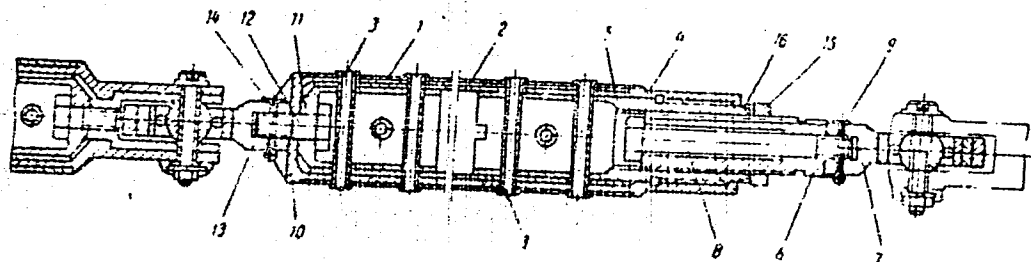
22.8.63 as 853726/40-23 SEMENOV V.N. et al.  
(15.9.69) Bul. 16/5.5.69. Class 62b, Int. Cl.  
B 64d.

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AA0052672

Semenov, V. N.; Pupin, N. A.; Tikhomirov, N. M.



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19821433

USSR

KUKHTENKO, A. I., SEMENOV, V. N., UDILOV, V. V.

"Abstract Theory of Systems. Present Status and Trends of Development"

Kiev, Kibernetika i Vychistel'naya Tekhnika, No 15, 1972, pp 4-22

Abstract: The present state of the abstract theory of systems is briefly described and the deductive and inductive paths of its development are compared. The properties of reducibility of algebraic matrix representations of algebras and representation of algebras by differential forms (external algebra and the group ring) are studied on the abstract-algebraic level of description. The relationship is established between the reducibility of a group ring and the reducibility of the matrices of linear dynamic systems having group symmetry, and also between the reducibility of an external algebra and the property of controlability of dynamic systems. The approach is illustrated with examples. The constructions studied at the abstract-algebraic level illustrate a possible and very productive approach to the production of abstract system theory. Abstract system theory allows new constructive results to be produced for a precisely defined class of systems and also allows the corresponding generalizations to be made, fully confirming the fruitfulness of the construction of abstract theories for the study of systems of any nature.

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1/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--PURIFICATION OF NATURAL GAS USING THE VORTEX EFFECT -U-  
AUTHOR--(05)--LEYTES, I.L., SEMENOV, V.P., POLOVINKIN, V.A., LURYE, B.I.,  
TAGINTSEV, B.G.  
COUNTRY OF INFO--USSR S  
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(5), 345-50  
DATE PUBLISHED-----70  
SUBJECT AREAS--PROPULSION AND FUELS  
TOPIC TAGS--NATURAL GAS, CHEMICAL SEPARATION, VORTEX  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3008/1734 STEP NO--UR/0064/70/046/003/0345/0350  
CIRC ACCESSION NO--AP0138707  
UNCLASSIFIED

2/2 033

CIRC ACCESSION NO--AP0138707

UNCLASSIFIED

PROCESSING DATE--04DEC79

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECTS OF LENGTH-HEIGHT RATIOS IN A JET VORTEX INTAKE OF 200 MM PRIME2 CROSS SECTION AND INPUT-OUTPUT PRESSURE RATIOS BETA EQUALS P SUB2-P SUB4 ON THE COOLING EFFECT AND THE DEGREE OF REMOVAL OF C SUB6 POSITIVE HYDROCARBONS FROM NATURAL GAS WERE STUDIED. COOLING OF THE STARTING GAS BY THE COLD STREAM ISSUING FROM THE VORTEX WAS MAX. AT MU VALUES (0.7-0.9) WHICH DECREASED AS BETA INCREASED. AT MU EQUALS 0.75 AND BETA EQUALS E.R, THE HIGHEST DELTA T SUB1-4 (74DEGREES) WAS OBSD. COOLING BY BOTH THE COLD STREAM AND VORTEX WERE LOWER, THE HIGHER THE CONTENT OF IMPURITIES TO BE CONDENSED. C SUB6-8 HYDROCARBON CONTENT IN GAS ISSUING AT 4-9 ATM AND INITIALLY CONTG. 15 G-M PRIME3 C SUB6-8 HYDROCARBONS DROPPED FROM TO 12.7, 8.7, 4.1, 3.9, 2.9, AND 0.8 AS THE TEMP. OF THE COLD STREAM ODEGREES TO MINUS 9DEGREES, MINUS 10DEGREES TO MINUS 19DEGREES, MINUS 20DEGREES TO MINUS 29DEGREES, MINUS 30DEGREES TO MINUS 39DEGREES, MINUS 40DEGREES TO MINUS 49DEGREES, AND MINUS 50DEGREES TO MINUS 60DEGREES.

UNCLASSIFIED

USSR

UDC: 669.71.472

FORSBLOM, G. V., SEMENOV, V. S., SMORODINOV, A. N., PARAMONOV, S. A.,  
BARABANOV, P. S.

"Artificial Cooling as a Method of Intensification of the Operation of Aluminum Electrolyzers"

Tr. Vses. N.-I. i Proyeckt. In-ta Alyumin., Magn. i Elektrod. Prom-sti [Works of All-Union Scientific Research and Planning Institute for the Aluminum, Magnesium and Electrode Industry], 1972, No 82, pp 15-25 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G169, by G. Svodtseva).

Translation: Tests were performed at one plant of a group of electrolyzers, equipped with various artificial cooling systems. The effectiveness of the cooling was estimated on the basis of full thermal and energy balances. The maximum increase in thermal losses amounted to 50-55,000 watts. The increase in yield per current in cooled electrolyzers was facilitated by thicker and more constant linings. The transfer of metal in cooled electrolyzers was 1.5-2 cm less than in ordinary electrolyzers. The mean parameters of the technological mode and data on the yield per current and consumption of electric power are presented. The use of a forced electrolyzer can facilitate the

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USSR

Forsblom, G. V., Semenov, V. S., Smorodinov, A. N., Paramonov, S. A., Barabanov, P. S., Tr. Vses. N.-I. i Proyekt. In-ta Alyumin., Magn. i Elektrod. Prom-sti, 1972, No 82, pp 15-25.

solution of the important economic problem of utilization of daily and seasonal excesses in electric power plant capacity.

2/2

- 89 -

USSR

UDC 621.396.67

SEZEMOV, V.S., FRUMKIS, L.S., SHOSTAK, A.S. [Siberian Physicotechnical  
Institute at the Tomsk State University]

"The Influence Of A Plane-Stratified Medium On The Impedance Of Horizontal  
Linear Antennas"

Izv. VUZ: Radiofizika, Vol XV, No 5, May 72, pp 773-777

**Abstract:** Expressions are found for the self impedance of a linear antenna and the mutual impedance of two linear antennas located parallel to the boundary surface of a plane-stratified medium. It is convenient with the use of the recurrence relations given in the paper to calculate with the aid of a computer the antenna impedance for an arbitrary number of layers. The results are shown of calculations of one and two half-wave antennas. Two graphs are presented of the dependence of the components of the impedance introduced into an antenna by a uniform half-space from a height  $h/\lambda$  ( $\lambda$  = length of wave in free space). The values of the dielectric constant  $\epsilon$  and losses  $\eta = 600 \lambda$  correspond to the electromagnetic parameters of the earth in the ultrashort wave band. A graph is shown of the dependence of the active and reactive components of the mutual resistance of antennas located above a uniform half-space on the distance between the antennas. The case of free space ( $h = \infty$ ) is given for comparison. The results are shown in two graphs of the impedance introduced into an antenna by a uniform half-space ( $\epsilon = 10, \eta = 0.1$ ) and a passive antenna. 6 fig. 1 ref. Received by editors, 19 August 1971.

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USSR

UDC 669.71.472

SEMENOV, V. S., FORSBLOM, G. V., TSYPLAKOV, A. M., YAKUNIN, N. P.

"Study of the Coefficient of Heat Transfer from the Electrolyte to the Lining in Industrial Aluminum Electrolyzers"

Tr. Vses. n.-i. i proyekt. in-ta alyumin., magn. i elektrokn. prom-sti  
(Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 71, pp 63-68 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G167)

Translation: A procedure has been developed and an instrument designed to measure the coefficient of heat transfer from the electrolyte to the lining in industrial aluminum electrolyzers. Measurements have been taken. The magnitude of the heat transfer coefficient varies from 300-400 to 1,200 watts/m<sup>2</sup>-deg and more depending on the distance of the measurement point from the anode and its location along the perimeter. Equations are derived for the heat transfer coefficient as a function of the temperature head under the conditions of natural convection and the circulation rate of the electrolyte with forced movement of it. The circulation rate of the electrolyte is calculated, and its dependence on the distance from the anode is demonstrated. There are 3 illustrations.

1/1

USSR

UDC: 621.319.4

SEMENOV, V. S., PLUZHNIKOV, V. M., VERBITSKAYA, T. N.

"Investigation of the Piezoelectric Constants of Type VK Varicaps and Possibilities for Controlling Them"

Elektron. tekhnika. Nauch-tekhn. sb. Radiodetali (Electronic Technology, Scientific and Technical Collection. Radio Components), 1970, vyp. 4(21), pp 115-119 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V318)

Translation: The authors present the results of an experimental study of the piezoelectric and mechanical constants of type VK varicaps. Possible ways to use the piezoelectric properties of varicaps in some devices are pointed out. Resumé.

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- 122 -

USSR:

UDC: 519.2:621.391

ZIYAKAYEV, R. G., SEMENOV, V. S.

"Statistical Approach to Signal Detection in Flaw Detection"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physicotechnical Institute Affiliated With Tomsk University), 1970, vyp. 51, pp 202-208 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V296)

Translation: It is noted that the part of the statistical theory of communications which deals with signal detection is fully applicable to the purposes of radioscopy. For this reason, the article contains a brief exposition of the well known principles of signal detection theory. The class of topics covered is indicated by the section titles: "Average Risk and Plausibility Relation", "Optimum Receiver for a One-Dimensional Random Quantity", "Optimum Receiver for a Signal Given as a Function of Time", "Optimum Receiver for the Case of Nonadditive Interference". Ya. Kogan.

1/1

- 19 -

USSR

UDC: 621.372.54:621.315.613.7(088.8)

ALEKSEYEV, A. N., PAUZHNIKOV, V. M., SEMENOV, V. S., Moscow Engineering  
Physics Institute

"A Piezoelectric Filter"

USSR Author's Certificate No 266966, filed 4 Oct 68, published 14 Jul 70  
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V348 P)

Translation: A piezoelectric filter is proposed which is made from a piezoelectric ceramic plate with electrodes attached to both sides. The plate is polarized in the direction perpendicular to the plane of the electrodes. To simplify construction of the filter, the input and output electrodes are fitted with rectangular lugs which are asymmetrically located with respect to one another.

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--THE IMMEDIATE AND REMOTE RESULTS OF VAGOTOMY IN DUODENAL PEPTIC  
ULCER -U-  
AUTHOR--(04)-UTESHEV, N.S., PAKHOMOVA, G.V., BYCHKOVA, T.I., SEMENOV, V.V.  
COUNTRY OF INFO--USSR  
SOURCE--KHIRURGIYA, 1970, NR 6, PP 35-39  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--DUEDENUM, SURGERY, NERVE TISSUE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605005/D01 STEP NO--UR/0531/70/000/006/0035/0039  
CIRC ACCESSION NO--AP0139710

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139710

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT THE N. V. SKLIFOSOVOSKY INSTITUTE 75 PATIENTS WITH COMPLICATIONS OF DUODENAL PEPTIC ULCERS WERE SUBJECTED TO VAGOTOMY AND ANTRECTOMY. VAGOTOMY WAS PERFORMED SUBDIAPHRAGMATICALLY. SECTION OF THE VAGUS NERVES IN THE IMMEDIATE VICINITY TO THE LESSER CURVATURE OF THE STOMACH WAS ACHIEVED BY PRESERVATION OF HEPATIC AND INTESTINAL BRANCHES OF THE VAGUS NERVES. THE EXPERIENCE OF TREATMENT HAS SHOWN THAT THE PATIENTS REQUIRE FOR TWO-THREE POSTOPERATIVE DAYS CONSTANT ASPIRATION FROM THE STOMACH FOR THE RESTORATION OF ITS TONE. OUT OF 75 PATIENTS IN 3 THERE WAS OBSTRUCTION OF THE ANASTOMOSIS FOR 14 DAYS, WHICH NORMALIZED UNDER THE INFLUENCE OF CONSERVATIVE MEASURES. THE REMOTE RESULTS WERE STUDIED IN 40 PATIENTS. AN ANALYSIS OF THESE DATA HAS SHOWN THAT AT PERIODS FROM 3 MONTHS TO 4 YEARS AFTER VAGOTOMY WITH ANTRECTOMY THERE OCCUR NO PRONOUNCED CHANGES IN THE FUNCTION OF THE LIVER, PANCREAS AND SMALL INTESTINE. A PERSISTENT ACHYLIA WAS NOTED AFTER THE EXAMINATION OF THE GASTRIC SECRETION. THERE WERE SEEN NOT SIGNS OF THE DUMPING SYNDROME, THE DEVELOPMENT OF PEPTIC ULCERS OR DIARRHEA IN THE GROUP OF PATIENTS.

FACILITY: 1-YA KHIRURGICHESKAYA KLINIKA POMOSHCHI IMENI N. V. SKLIFOSOVSKOGO, MOSKVA.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--QUASI OPTICAL FEEDER LINES -U-  
AUTHOR--(021)-VOYTOVICH, N.N., SEMENOV, V.V.  
COUNTRY OF INFO--USSR  
SOURCE--RADIOOTEKHNIKA I ELEKTRONIKA, VOL. 15, APR. 1970, P. 697-704  
DATE PUBLISHED----APR70  
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS  
TOPIC TAGS--TRANSMISSION LINE, OPTIC INSTRUMENT, ELECTRON LENS, WAVEGUIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/1671 STEP NO--UR/0109/70/015/000/0697/0704  
CIRC ACCESSION NO--AP0116849

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0118649

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE PROBLEM OF CONSTRUCTING MULTILENS QUASI OPTICAL TRANSMISSION LINES BY DETERMINING THE LENS PROFILE FOR OPTIMAL CONVERSION OF THE SOURCE FIELD INTO A SPECIFIED FIELD AT THE RECEIVER END. IT IS ASSUMED THAT THE ELECTRICAL DIMENSIONS OF THE LENS APERTURES ARE LARGE, THAT THE DISTANCE BETWEEN LENSES IS MUCH LARGER THAN THEIR DIMENSIONS, THAT THE LENSES ARE THIN ENOUGH TO CHANGE THE PHASE DISTRIBUTION WITHOUT AFFECTING THE AMPLITUDE DISTRIBUTION, AND THAT THE SOURCE AND RECEIVER FIELDS ARE IN PHASE AND IDENTICALLY POLARIZED. A PREVIOUSLY DESCRIBED ITERATIVE PROCEDURE IS APPLIED IN THE CALCULATION, AND AN EXAMPLE IS GIVEN FOR THE CONVERSION OF AN H SUB10 RECTANGULAR WAVEGUIDE MODE.

UNCLASSIFIED



1/2 040

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--THE DESIGN OF THE CONTROL SYSTEM SPACECRAFT STABILISATION WITH HUMAN OPERATOR -U-

AUTHOR--(05)--SOLODOVNIKOV, V.V., DMITRIEV, A.N., SEMENOV, V.V., ARUTUNOV, S.K., LOBUSOV, E.S.

COUNTRY OF INFO--USSR, FRANCE

SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR 2-6, 1970, PAPER, 18  
DATE PUBLISHED--MARTO

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--MAN, MAN MACHINE SYSTEM, MANUAL, SPACECRAFT RENDEZVOUS, ORBIT CORRECTION, SPACECRAFT LANDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1996/0006

STEP NO--FR/0000/70/000/000/0018/0018

CIRC ACCESSION NO--AT0117306

UNCLASSIFIED

2/2 040

CIRC ACCESSION NO--AT0117306

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0-  
OF MAN IN SOLVING NUMEROUS  
CORRECTION, LANDING, ETC.

ABSTRACT. CONSIDERATION OF THE ACTIVE ROLE  
SPACE PROBLEMS SUCH AS RENDEZVOUS, MIDCOURSE,  
ALL THESE OPERATIONS INCLUDE MANUAL  
BECAUSE OF THEIR GREAT IMPORTANCE,  
ATTENTION IS GIVEN TO THE DYNAMIC AND  
THE MAJOR REASON FOR  
INFORMATION RESEARCH OF HUMAN OPERATOR FEATURES.  
ANALYTICAL DESIGN IS NECESSARY.  
THE NECESSITY FOR CONSTANCY OF INFORMATION  
MANUAL TRACKING IS THE CORRELATION BETWEEN RANDOM DELAY TIME AND INPUT  
TRANSMISSION RATE.  
PROVIDED AN OPPORTUNITY TO OBTAIN A STOCHASTIC DYNAMIC MODEL OF THE  
OPERATOR.

UNCLASSIFIED

USSR

SEMENOV, YE. A.

"Experience in the Operation of the Metrological Service and the Reliability Laboratory Under Conditions of the Series Production of Low-Power Electric Motors"

Moscow, Nadezhnost' i Kontrol' Kachestva, No 6, 1973, pp 23-33

Abstract: An analysis is presented of the manner in which the metrological service of a plant producing low-power electric motors, and the reliability laboratory of that plant, conduct their operations in order to improve output quality. 3 figures.

1/1

- 56 -

USSR

UDC 681.142.37

ANTONYUK, YE. M., BELYAYEV, V. YE., and SEMENOV, YE. I., Leningrad Electrical Engineering Institute imeni V. I. Ul'yandov (Leningrad)

"One Method of Reducing Redundant Information in Measuring Systems"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, Vol 13, No 12, 1970, pp 11-14

Abstract: The introduction of approximation error computers in telemetry systems (TS) markedly complicates their design, reduces their operating reliability, and in many cases also reduces the interference resistance of the systems. A TS with the amount of information reduced not by preliminary calculation of the approximation error but by rational design of the telemetry frame is examined here. This TS permits transmission of the parametric code and the codes of the addresses of those transducers whose signals at a given instant are equivalent with an error that can be determined by quantizing the signal, levelwise, in a single telemetric frame. Two boundary value cases can be singled out in the operation of this system: 1) Instantaneous values of the transducer signals in the single telemetric frame are identical. The system will have the highest efficiency in this mode because all the transducer numbers and only one parameter will be transmitted. 2) Instantaneous values of transducer signals are distributed over all possible quantizing levels. The system efficiency in this case 1/2

- 58 -

USSR

ANTONYUK, Ye. M., Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye,  
Vol 13, No 12, 1970, pp 11-14

is minimal. In each of these boundary value cases system efficiency depends on the ratio of the number of transducers and the number of the quantizing levels, where it is obvious that for the case when the number of transducers is less than the number of quanta the secondary boundary value case coincides with the operating conditions of the existing cyclic TS and the measuring information compression factor is always unity.

2/2

USSR

S  
UDC 621.397

AVDEYEV, B. YA., ANTONYUK, YE. M., BELYAYEV, V. YE., SEMENOV, YE. I., FREMEKE, A. V., Leningrad Electrotechnical Institute imeni V. I. Ul'yanov (Lenin)

Leningrad, IVUZ Priborostroyeniye, Vol XIII, No 3, 1970, pp 60-62

Abstract: It is shown that the method of adaptive quantization can be used when signal characteristics are right in multichannel telemetry systems to narrow the frequency band in each channel without a buffer memory. Expressions are given for the coefficients of contraction of redundant information and frequency band compression for the case of independent signals. The proposed procedure can be used to advantage in simplifying multichannel telemetry systems, improving reliability, and providing readings in real time.

1/1

- 51 -

SEMENOV, Ye. K.

THE CHARACTERISTICS OF THE PREVAILING WIND DIRECTION RANGE OVER THE TERRITORY OF THE SOVIET UNION  
Article by Ye. K. Arsenova, Ye. K. Semenov, Institute of Applied Geophysics, Moscow, Работы Ленинградского государственного университета, No 3, 1972, submitted 29 October 1970, pp 62-68

The territory of the USSR was divided into districts with respect to directions of the mean annual prevailing ground winds and their mean annual recurrence rate.  
The results obtained can be used directly when calculating the mean monthly and mean annual concentrations of pollution in the atmosphere from the operation of industrial enterprises.

The calculations connected with estimating the possible mean monthly and mean annual pollution concentrations entering the atmosphere during the operation of different types of industrial enterprises require knowledge and correct consideration of the mean wind rose over many years for a defined country. The ground wind rose over the enormous territory of the Soviet Union is highly complex and varied; however, utilization of climatic maps of the pressure distribution, the prevailing wind directions and other meteorological data permits discovery of certain stable characteristic features fundamental from year to year in the extraordinarily variable current system.  
The division of the Soviet Union into territories with respect to nature of the wind rose and, namely, with respect to the directions of the prevailing winds and their mean annual recurrence rate performed by us on the basis of the references on USSR climate and the genetic classification of USSR climate of B. P. Alisov [1, 2] is presented in this paper. As the practical criterion considering the recurrence rate of the prevailing wind direction in each area, we prepare a variable characterizing the degree of elongation in the wind rose and the ratio of the recurrence rate of the prevailing wind direction to the recurrence rate of all other directions under conditions of equiprobability of them. The prevailing wind direction and degree of

APR 55899  
5 May 72

USSR

UDC 513.88:513.88

AREYN, S. G., PETUNIN, YU. I., SEMENOV, YE. M.

"Embedding Theorems and Interpolation of Linear Operators"

Moscow, V sb. Teoremy vlozheniya i ikh prilozh. (Theorems of Embedding and Their Applications -- collection of works), "Nauka," 1970, pp 127-131 (from RZh-Matematika, No 7, Jul 1970, Abstract No 7B633)

Translation: The article contains an exposition of results on interpolation of linear operators in scales of Banach spaces and their relationship to embedding theorems. The concept of an interpolation family of spaces is introduced, and various theorems on interpolation and near-interpolation properties of the scales of Banach spaces are considered. The interpolation of pre-kernel operators is investigated as well as embedding theorems for symmetric Banach spaces. Results are given on the interpolation of linear operators which act in symmetric Banach spaces. Application of the results yields some known and new embedding theorems. Author's abstract.

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- 40 -



USSR

- 5 -

15-16 Jun 70

Image Converter Tubes (EOP), Light Intensifiers, and Use in Science, Engineering: All-Union Seminar, Session II, Moscow, 15-16 Jun 1970

/Cont'd from Card 4, see SOTNIKOV, V. M., same dates/

It is noted that at Alma-Ata on a 70-cm telescope E. K. Denisjuk and associates obtained around 900 spectra of diffuse gaseous and planetary nebulae and elliptical galaxies and made and photometered films of 47 elliptical galaxies. The UK-92 is also used successfully at the Polar Geophysical Institute, AS USSR, for the study of monochromatic emissions of aurora polaris (report of P. Ya. Sukhoivanenko). In reports of A. N. Abramenko and V. V. Frokof'yeva there was an explanation of problems of the use of television equipment with electronic-optical pre-amplification for photographing of astronomical objects, including results of observations of changes of optical emission of pulsar NP 0532, located in the center of the Crab Nebula (conducted in Mar 70 by combining TV system with a 70-cm telescope of the Crimean Astrophysical Observatory). The scan-generator was assembled on a system similar to that published earlier/see LEVIN, G. L., A. A. Markov, et al, PTE (Experimental Instruments and Techniques) No 6, 100 (1962). There was a report on an electron-optical attachment to AZT-8 and AZT-14 telescopes, constructed on the basis of an EOP of the UK-92 type, and on the results of its experiments by ANOSHKIN, A. A., MENCH, K. L., and PETROV, G. G. There was a report on research of the resolving power of the electron lens with reduced image by SEMENOV, Ya. P., and KUPREVICH, V. V.

/Cont'd on Card 6, see KOMAROV, V. I., same dates/  
Uspekh fizicheskikh nauk (AS USSR), Vol 104, No 3, Jul 71, pp 509-515 (6)

S/019/62/000/006/038/083  
A156/A126

AUTHORS: Semenov, Ye.P. , and Novikov, Yu.B.

TITLE: Electron-optical device for electron image transmission

PERIODICAL: Byulleten' izobreteniy, no. 6, 1962, 40

TEXT: Class 21g, 2940. No. 145670 (666116/26 of May 12, 1960). An electron-optical device for electron image transmission in diminished size, the distinctive feature of which consists in that for ensuring high resolution within a large field of vision, the device consists of an immersion-type electrostatic lens and a short-focus magnetostatic lens.

Card 1/1

Jemenov, Ye. P.

~~the~~ Immunology

THE FIRST SCIENTIFIC CONFERENCE OF YOUNG SCIENTISTS  
OF THE INSTITUTE OF EXPERIMENTAL BIOLOGY AND MEDICINE  
SIBIRIAN BRANCH OF THE ACADEMY OF SCIENCES USSR

Following is the translation of an article by V. V. Ostrovsky, I. Ya. Ostrovskiy, and V. S. Chernyshevskiy in the Russian language publication Immunology (Sverdlovsk) No. 1, 1972, pages 11-12. (From the Journal of the Siberian Branch of the Academy of Sciences USSR), No. 1, November, 1972, pages 111-112.

The 20<sup>th</sup> for three days (5 - 8 December 1971) in the conference hall of the Academy of Sciences USSR, the first scientific conference of young scientists of the Institute of Experimental Biology and Medicine was held.

The conference was opened by an address from the director of the Institute, Academician V. N. Zhukovskiy, who wished to have young scientists in the conference process and to participate in the development of the new development of scientific workers, and to train the youth.

The organization committee of the conference deemed that all young scientists of the Institute who had published no more than ten scientific papers and did not have an academic degree could participate in the conference. In all the laboratories and departments of the Institute and candidates training in universities and academies of sciences were invited to participate in the conference.

Twenty-five reports were presented and presented, devoted to immunology, cytology, microbiology, physiology, pharmacology, histology, histology, and clinical surgery, immunology, virology, mathematics, immunology, and other divisions of modern biology. Theoretical methods of experimental, and clinical medicine.

In the section on theoretical medicine a great deal of interest was produced by the reports of Candidate G. V. Kovalovskiy, "The Pathogenesis and Hypogenesis of Some Autoimmune Signs of Acute Leukemia of the Bone Marrow," Candidate G. V. Alievskiy, "The Dynamics of Bone Marrow Tissue and the Role of the Bone Marrow in the Pathogenesis of Leukemia," and the report of the young scientist candidate G. V. Zhurav, devoted to the modification of the electroconductive properties of the use of compounds stimulating the central nervous system. In reports by Ye. P. Jemenov, I. N. Levenov and E. S. Shalikhin, the results of work on various questions of immunology were reported.

Ye. P. Jemenov on his own original modifications of laboratory equipment for freeze-drying of tissue. The report of G. V. Kovalovskiy.

SEMEENOV, Ye. P.

[[ Maj Gen Med Serv?]]

---, Ye. P.

Signed the obituary of Maj Gen Med Serv (Ret) M. S. MASLOV. (LP, 6 Jun 61) 51

USSR

UDC 629.7.036.3:536.46

GUSSAK, L. A., SAMOYLOV, I. B., SEMENOV, YE. S., MURASHEV, A. F., OZEROV,  
Ye. A., and STOTLAND, A. I.

"The Concluding Stage of the Turbulent Combustion of a Heterogeneous Mixture"

Moscow, Goreniye i Vzryv--Sbornik (Combustion and Explosion--Collection of Works), Nauka, 1972, pp 365-369 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 2, 1973, Abstract No 2.34.30. Resume)

Translation: This paper investigates a subsonic stream of gases in the nozzle zone of a model gas-turbine engine combustion chamber at temperatures from 700 to 1000°C. It is shown that the gas stream is not an equilibrium one, and consequently the thermodynamic approach may prove insufficient for determining the properties of such a stream. The work was conducted on an experimental combustion chamber in which diesel fuel was burned. The nonequilibrium state of the combustion products was established on the basis of ionization data of the gases and on the basis of their luminescence spectra. The mean temperature was simultaneously measured by thermocouples, and the composition of the gas-stream combustion products was determined. The obtained data permit the conclusion to be drawn that at regimes of 700 and 800°C, slow volume reactions of hydrocarbon burnout take place. The considerably large inequilibrium observed at regimes of 900 and 1000°C is caused mainly by removal of the

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USSR

GUSSAK, L. A., Goreniye i Vzryv--Sbornik, Nauka, 1972, pp 365-369

flame foci from the primary zone of the combustion chamber and, partially, by afterburning reactions within the volume. An attempt is made at an experimental justification of a possible mechanism which leads to the appearance of foci with a slow volume reaction. 2 figures. 7 references.

2/2

- 32 -

USSR

UDC 615.217.34.015.44:576.314

YELAYEV, N. R. and SEMENOV, Ye. V.

"Effect of Central Cholinolytics on Biological Membranes"

Moscow, Voprosy Meditsinskoy Khimii, No 3, 1973, pp 294-299

Abstract: Intraperitoneal injection of rats with typical cholinolytics -- benactyzine, its analog adiphenine hydrochloride, glipin [a central M-cholinolytic] and its analog tropazine -- and 5 minutes later with 1-C<sup>14</sup>-glucose resulted in almost immediate accumulation of the metabolite in the blood and brain. Addition of the cholinolytics to cerebrocortical slices and incubation of the latter with 1-C<sup>14</sup>-sodium acetate had a similar but less pronounced effect on accumulation of the isotope. The rapid stimulation of metabolite transport to the tissues is attributed to functional changes in the cell membranes after interacting with the cholinolytics. The structure of the latter indicates that this interaction is due to the presence of hydrophobic groups.

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USSR

UDC 51

SEMENOV, Ye. V., SOKOLOVA, N. N., SHIL'NIKOVA, G. M.

"Solution of the Problem of Displaying Finished Production on an Hourly Graph"

Tr. VNIИ moloch. prom-sti. (Works of the All-Union Scientific Research Institute of the Dairy Industry), 1972, No. 28, pp 56-75 (from RZh-Matematika, No 11, Nov 72, Abstract No 11V496)

Translation: The problem of displaying whole-milk production on an hourly graph is solved using a heuristic method. Programs for achieving a computer algorithm are described. Block diagrams are given. The order of the handling and processing of information under actual conditions is described. Authors abstract.

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- 74 -



USSR

UDC 51

SEMENOV, Ye. V., SOKOLOVA, N. N.

"The Problem of the Allocation of Enterprises of the Dairy Industry Using Mathematical Economics Methods and Computer Techniques"

Tr. VNII moloch. prom-sti (Works of the All-Union Scientific Research Institute of the Dairy Industry), 1972, No. 28, pp 5-14 (from RZh-Matematika, No 11, Nov 72, Abstract No 11V486)

Translation: The problem of the allocation of enterprises of the dairy industry is solved using methods of mathematical programming. An alternate formulation of the problem is given in which models of transportation problems are used. Authors abstract.

1/1

- 63 -

Theoretical Automation

USSR

UDC 51

SEMENOV, Ye. V., KARPILOVSKIY, Ye. B., REDIN, Yu. A.

"Organization of the Repair of Basic Equipment Using Mathematical Methods"

Tr. VINII Moloch. prom-sti (Works of the All-Union Scientific Research Institute of the Dairy Industry), 1972, No. 28, pp 25-36 (from RZh-Matematika, No 11, Nov 72, Abstract No 11V488)

Translation: Problems of the organization of repair work in enterprises using exact methods in which linear programming is used are discussed. Several simple examples are calculated. Authors abstract.

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USSR

UDC: 51

~~SEменов, Ye. V.~~ SOKOLOVA, N. N., SHIL'NIKOVA, G. M.

"Solution of the Problem of Delivery of Finished Products According to an Hourly Schedule"

Tr. VNII Moloch. Prom-sti [Works of All-union Scientific Research Institute of the Milk Industry], 1972, No 28, pp 56-75 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V496, by the authors)

Translation: A solution is suggested for the problem of delivery of whole milk products according to an hourly schedule using a heuristic method. Programs for realization of the algorithm on a computer are described. Flow charts are presented. The order of transmission and processing of information under actual conditions is described.

1/1

- 27 -

USSR

UDC: 51

SEMENOV, Ye. V., KARPILOVSKIY, Ye. B., REDIN, Yu. A.

"Organization of Repair of Basic Equipment Using Mathematical Methods"

Tr. VNII Moloch. Prom-sti [Works of All-union Scientific Research Institute of the Milk Industry], 1972, No 28, pp 25-36 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V488; by the authors)

Translation: Problems of organization of repair work at enterprises using precise methods are studied. The apparatus of linear programming is used. Several simple examples are calculated.

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USSR

UDC: 51

SEMENOV, Ye. V., SOKOLOVA, N. N.

"Problem of Placement of Milk Industry Enterprises using Mathematical Economics Methods and Computer Equipment"

Tr. VNI Moloch. Prom-sti [Works of All-union Scientific Research Institute of the Milk Industry], 1972, No 28, pp 5-14 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V486, by the authors)

Translation: The problem of placement of milk industry enterprises is solved using mathematical programming methods. A variant statement of the problem is given, using the methods designed for transport problems.

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USSR

UDC 669.18.046.554

KIRICHENKO, I. D., SOSIPATROV, V. G., SMOLYARENKO, D. A., and  
SEMEV, YU. N.

"Production of Manganese-Aluminum Alloy, Stable During Storage,  
and Its Application for Deoxidation of Low-Carbon Steel Outside  
the Furnace"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals -  
Collection of Works), No 75, Metallurgiya Press, 1970, pp 84-88

Translation: Manganese-aluminum alloys produced from primary  
aluminum (99% Al) and metallic type Mn<sub>2</sub> manganese (over 93% Mn),  
containing not over 27% or over 50% aluminum have long-term  
storage qualities..

Homogeneity and decreased liquation of the alloys is pro-  
vided by careful mixing and pouring at temperatures 40-60° above  
the liquidus point of the alloy into massive molds.

The use of manganese-aluminum alloy for deoxidation of  
low-carbon non-aging steel outside the furnace increases the  
homogeneity of the chemical composition and constancy of pro-  
perties from melt to melt and ingot to ingot; higher purity than

USSR

UDC 669.14

SMOLYARENKO, D. A., KAPUSTIN, K. A., SEMENOV, Yu. N., D'YAKONOVA, V. S. and  
ALYMOV, A. A.

"Investigation and Modern Production of Quality Low-Carbon Nonaging Steel for  
Cold Rolling, in High-Capacity Martin Furnaces"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIS) (Collection of  
Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys),  
Izd-vo "Metallurgiya," No 61, 1970, pp 92-101

Translation of Abstract: Results are presented of an investigation of test  
smeltings of A8FKP steel. The most promising way of improving homogeneity of  
low-carbon nonaging steel, the surface quality and the complex of physico-  
chemical properties, including its propensity to aging is the deoxidation of  
the steel in a ladle by ferrovanadium and electric furnace ferromanganese. 5  
figures, 1 table, 6 references.

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- 44 -

USSR

UDC 621.039.51

VASIL'EV, G. YA., KONOPLEV, K. A., and SEMENOV, YU. P.

"Measurement of Total Fluxes of Thermal and Fast Neutrons in the Active Zone and in the Experimental Channels of the VVR-M Reactor"

Moscow, Metrology of Neutron Radiation on Reactors and Accelerators, 71, p 113  
(from RZh-Yadernyye Reaktory, Otdel'nyy Vypusk, No 1, 1972, Abstract No 1.50.109)

Abstract: Methods and results of measuring total fluxes of thermal neutrons of from  $10^{16}$  to  $10^{21}$  neutr/cm<sup>2</sup> when activating Co-59 and Fe-58 by the (n,  $\gamma$ ) reaction and fluxes of fast neutrons of from  $10^{16}$  to  $10^{21}$  neutr/cm<sup>2</sup> when activating Fe-54 by the (n, p) reaction are examined.

1/1



USSR

UDC: 621.317.335:539.216.2

SEMENOV, Yu. P., GUSHCHINA, T. M., EPSHTEYN, S. L., SHVEDOV, O. A.

"Determination of the Dielectric Characteristics of Thin Films"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 110-115 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A355)

Translation: Methods of determining the permittivity and loss angle of dielectric films used in capacitor construction are briefly classified. The peculiarities of various groups of methods are examined; the authors propose and study a noncontact method which does not require a preliminary determination of film thickness. The procedure is described and its error is indicated. Contact methods using electrodes in the molten state are most suitable for single-layer thin film specimens. A measurement cell with special electrodes of In-Ga-Zn alloys has been developed for use with this method; the design of the cell is described, and its basic technical characteristics are given. A table of measurement results is presented. Bibliography of one title. E. L.

1/1

USSR

NIKOLAYEV, O.A., ~~SEMENOV, Yu. V.~~, and TARUSHKINA, L.T.

"Constructing a Stochastic Diagnostics Test of Digital Computers in the Process of Solving Linear Differential Equations"

Moscow, V sb. Tekhn. diagnostika (Technical Diagnostics -- collection of works) "Nauka," 1972, pp 261-264 (from RZh -- Matematika, No 8, 1972, Abstract No 8V631)

Translation: The authors examine a stochastic diagnostics method for digital computer devices in the process of diagnostics method for digital computer devices in the process of solving linear differential equations with the help of the introduction of additional random action with Gaussian distribution and known statistical characteristics. The diagnosis is conducted on the basis of the system reaction to a given stimulus. Authors' abstract

1/1

USSR

UDC: 8.74

NIKOLAYEV, O. A., SEMENOV, Yu. V., TARUSHKINA, L. T.

"On Construction of a Stochastic Test for Diagnosis of Digital Computer Devices in the Process of Solving Linear Differential Equations"

V sb. Tekhn. diagnostika (Technical Diagnostics--collection of works), Moscow, "Nauka", 1972, pp 261-264 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V631)

Translation: The article deals with synthesis of a stochastic method of diagnosing digital computer devices in the process of solving linear differential equations by introducing an additional random action with Gaussian distribution and unknown statistical characteristics. The diagnosis is done on the basis of reaction of the system to the given action. Authors' abstract.

1/1

USSR

UDC: 53.07/.08+53.001.5

DMITRIYEVSKIY, I. M., SEMENOV, Yu. V., FROLOV, V. V.

"A Method of Determining the Coefficient of Quality and Equivalent Dose in Mixed n- $\gamma$  Fields"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding---collection of works), Moscow, Atomizdat, vyp. 12, 1971, pp 53-56 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A697)

Translation: The paper describes a method of determining the equivalent dose of neutrons and the quality coefficient of neutron radiation. Three ionization chambers are used: a tissue-equivalent chamber (current  $I_{n+\gamma}$ ); a tissue-equivalent chamber with walls covered on the inside by a thin layer of conductive material containing no hydrogen (current  $I_{n'+\gamma}$ ); and a chamber with aluminum walls (current  $I_{\gamma}$ ). A loss of energy of the recoil protons leaving the walls of the chamber takes place in the layer of material which contains no hydrogen. The fraction of energy lost depends on the maximum mean free path of the protons and is thus related to the quality coefficient. It is found that the quantity  $(1-\gamma)$  is a linear  
1/2

USSR

DMITRIYEVSKIY, I. M. et al., Vopr. dozimetrii i zashchity ot izluch.,  
Moscow, Atomizdat, vyp. 12, 1971, pp 53-56

function of the quality coefficient, where  $\gamma = (I_{n+\gamma} - I_{\gamma}) / (I_{n+\gamma} - I_{\gamma})$ . The fraction of photon radiation is determined from  $I_{\gamma}$ . The neutron dose  $D_n$  is determined from  $(I_{n+\gamma} - I_{\gamma})$ . The equivalent dose is defined as the product of the neutron dose and the quality coefficient, where the quality coefficient is a function of  $(1-\gamma)$ . The accuracy of determining the quality coefficient is evaluated at  $\pm 30\%$ . The ionization chambers are used in the saturation current mode. The method is distinguished by simplicity and a wide range of measurable dose rates. A. V.

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--DOSE FIELD CREATED BY PROTON BEAM IN THE IRRADIATED BODY -U-

AUTHOR--(05)-VAYNBERG, M.SH., DNITRIYEVSKIY, I.M., SEMENOV, YU.V., TELKOV,  
YU.M., FROLOV, V.V.  
COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 69-73

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MEDICAL APPARATUS, PROTON RADIATION BIOLOGIC EFFECT, RADIATION  
DOSAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/1959

STEP NO--UR/0241/70/015/005/0069/0073

CIRC ACCESSION NO--AP0120602

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120602

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF CALCULATION OF DOSE FIELDS CREATED IN THE IRRADIATED BODY BY A MEDICAL PROTON BEAM OF THE LABORATORY OF NUCLEAR PROBLEMS OF THE JOINT INSTITUTE FOR NUCLEAR RESEARCH IS DISCUSSED. THE RESULTS OF THE EXPERIMENT CONCERNED WITH THE DETERMINATION OF THE INFLUENCE ON THE DOSE FIELD OF HETEROGENEITIES AND CURVATURE OF THE BODY SURFACE ARE GIVEN. FACILITY: OTDEL RADIOLOGII INSTITUTA EKSPERIMENTAL'NOY I KLINICHESKOY ONKOLOGII AMN SSSR. FACILITY: MOSKOVSKIY INZHENERNO-FIZICHESKIY INSTITUT.

UNCLASSIFIED

Epidemiology

USSR

UDC 616.931.455-036.21(282.247.33:282.6)

SEMENOV, M. Ya., BADALOV, M. Ye., SEMENOVA, A. P., and KOYBICHIDI, Ye. K.,  
Rostov oblast Sanitary Epidemiological Station

"The Existence of Local Tularemia Foci in the Don Delta"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 5, 1970, pp 37-40

Abstract: The building of Tsimlyansk dam on the Don River made it possible to regulate the drainage of flood water. This led to a reduction in the number of dwelling sites for *Arvicola terrestris*, a small murine rodent, and a decrease in their population. Because of this, the incidence of tularemia declined, and only 25% of the usual number of tularemia cultures were isolated in that territory. However, the flood lands on the Don delta began to be used as fish hatcheries and turned into fields surrounded by banks. This created favorable conditions for rodents' nests and new tularemia foci. An accumulation of small rodents, water rats, and *D. marginatus* ticks was noted in this region. The density of rodents is particularly great when the lands are flooded, and as a result the possibility of a reactivation of the tularemia focus in this area is not excluded. Therefore, special attention should be paid to these territories in conducting a complex program of prophylactic measures for eradication of tularemia foci.

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Therapy

2

UDC: 616.981.553-036.22

USSR

PAK, S. G., ANDRONNIKOV, V. A., NEKHAeva, N. D., SHEVTSOVA, Y. S., KARNOVA, S. K.,  
and SEMENOVA, D. V., First Moscow Medical Institute imeni I. M. Sechenov and Chuvash  
Republic Sanitary-Epidemiological Station

"Observation of Group Infection With Type E Botulism"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan 71,  
pp 59-63

Abstract: A trend toward increased occurrence of type E botulism has been observed all over the world. In the fall of 1967, 5 of 24 persons in the Chuvash ASSR who this type of botulism from salted fish (carp) died. Fourteen of the afflicted persons were seriously ill, seven had moderately severe cases, and only three had mild cases. The incubation period was short: in 22 cases, it varied from 4 to 12 hr, in one case it was 18 hr, and in another case it lasted 7 days (a mild case). In the five fatal cases, the incubation period did not exceed 4 hr. Vaccination with antitoxin is the first therapeutic measure. Four patients of the above group were not treated with the serum and died, since botulism had not been diagnosed. Although introduction of the serum in the early stages of the disease has

1/2

USSR

PAK, S. G., et al, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan 71, pp 59-63

the most beneficial effects, the serum can be administered at any stage in which botulism has been recognized and intoxication phenomena are observed. Comprehensive treatment must cover all fundamental pathogenetic factors, including suppression of growth of the pathogen, detoxification, and changes in the biochemistry of the neuromuscular system. To this end, the remaining 19 patients of the above group were treated by gastric lavage, parenteral introduction of salt solutions, glucose, and blood substitutes; one person received blood plasma and four were treated with polyvinylpyrrolidone. Botulism must be regarded as a toxicoinfectious process; hence levomycin was administered to all 19 patients to cut down further growth of the pathogen. Adenosine triphosphoric acid and cocarboxylase were administered also.

Acc. Nr.

AP0045175

Abstracting Service  
CHEMICAL ABST.

5-70

Ref. Code  
UR0191

91097n New hardener which increases the thermal stability of epoxy resins. Khrustaleva, E. N.; Golubkov, G. E.; Zhinkin, D. Ya.; Semenova, E. A.; Markova, N. V.; Lushnikova, M. N. (USSR). *Plast. Massy* 1970, (1), 12-14 (Russ). The thermal stabilities of epoxy resins ED-5 and ED-6 hardened with hexamethylcyclotrisilazane, poly(methylsilazane) (resin MSN-7) (I), and poly(methylphenylsilazane) were detd. Thus, ED-6 was hardened with I (0.8 active H present in I per epoxy equiv. ED-6) at 120° for 3 hr followed by addnl. heating at 150-200° for 2 hr. ED-6 hardened with I had higher tensile strength, impact elasticity, and thermal stability than ED-6 hardened with Endic Anhydride. CKJR

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REEL/FRAME

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