"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

2/2 014

UNCLASSIFIED

CIRC ACCESSION NO--AP0115544 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SOLIDUS DIAGRAM OF THE KBH SUB4-KCL-KBR SYSTEM IS CONSTRUCTED BY DETN. OF TWO CROSS SECTIONS OF KBH SUB4 AND 60:40 MOLE PERCENT KBR:KCL AND AT 50 MOLE PERCENT KBH SUB4. THE DATA ARE TABULATED. THE SYSTEM FORMS A CONTINUOUS SERIES OF SOLID SOLNS. WITH A SADDLE POINT AT 610DEGREES AND A REGION OF HIGH KBH SUB4 CONCN. FAICLITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC: 547.26'118.07

NIKOLENKO, L. N., RATMANOVA, K. I., TOLMACHEVA, N. S.

"A Method of Synthesizing Thymidine 5'-Monophosphate"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 13, May 72, Author's Certificate No 335251, Division C, filed 13 Jul 70, published 11 Apr 72, p 88

Translation: This Author's Certificate introduces a method of synthesizing thymidine 5'monophosphate by phosphorylating the corresponding nucleoside. As a distinguishing feature of the patent, the process is simplified by phosphorylating the unsubstituted nucleoside with an excess of β-cyanethyl phosphate in the presence of mesitylene sulfochloride.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 547.963.3+547.853

NIKOLENKO, L. N., RATMANOVA, K. I., TOLMACHEVA, N. S.

"Synthesis of Thymidine-3',5'-diphosphate"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2136-2137

Abstract: Phosphorylation of unprotected thymidine was carried out by excess β-cyanoethylphosphate in the presence of dicyclohexylcarbodiimide or mesitylene sulfochloride at 20° in pyridine. After ammoniacal hydrolysis the reaction mixture was separated on a cellulose column in a linear gradient of ammonium bicarbonate. Thymidine-3',5'-diphosphate can also be obtained by phosphorylation of thymidine-3'-(β-cyanoethyl)phosphate with an equimolar quantity of β-cyanoethylphosphate in the presence of mesitylenesulfochloride. The authors thank R. I. TATARSKIY for providing the enzyme S-nucleotidease.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC: 576.851.42:576.858.9

OSTROVSKAYA, N.N., MANYKIN, A.A., and TOIMACHEVA, T.A., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Electron-Microscope Study of Br. abortus and B. suis Cells at Different Periods of Interaction with Tb Phage Particles"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 2, 1970, pp 76-78

Abstract: A fundamental difference was noted in the interaction of Tb phage particles with cells of the two Brucella species. In preparations of ultra-thin sections of Br. abortus, cells with adsorbed phage particles were seen after $1\frac{1}{2}$-3 hours of contact. After 6-9 hours of contact, reproduced particles were clearly visible within the cells against the background of cytoplasm. There were also ultrastructural changes in the nucleus and cell wall. The effect of the phage on B. suis was quite different. The preparations contained phage-free, unaltered cells or cells with adsorbed particles. Experiments with several B. suis strains failed to reveal the presence of phage particles within the cells. Large quantities of detritus observed in several visual fields were indicative of destruction of the cells, possibly caused by "lysis from without."

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

Acc. Nr: AP0044187 Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp 76-78

ELECTRON MICROSCOPIC STUDY OF THE SECTIONS OF BR. ABORTUS AND SUIS CELLS AT VARIOUS PERIODS OF THEIR INTERACTION WITH THE CORPUSCLES OF Tb PHAGE

N. N. Ostrovskaya, A. A. Manykin, T. A. Tolmacheva

In ultra-thin sections of Br. abortus and suis cells prepared after a different period of contact with corpuscular Tb phage there was revealed a principal difference in the interaction of the phage and cells of the mentioned species of brucella. Various periods of interaction of the phage and cells were revealed in the sections of Br. abortus cells: the time of adsorption, the intracellularly localized reproduced corpuscles of the phage and their exit; changes in submicroscopic structure of Br. abortus cells were also noted. Interaction of Br. suis cells with the corpuscles of Tb phage were limited by the process of adsorption. This pointed to the fact that the lysis of Br. suis cells observed in the presence of multiplicity of infection is conditioned by «lysis from without».

1/1

6

DI

REEL/FRAME 19770672

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

1/2 013 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--DYNAMICS OF ANION EXCHANGE IN ALCOHOLIC AQUEOUS MEDIA -U-

AUTHOR-(03)-TOLMACHEVA, YU.A., DAVYDOV, A.T., DROBNITSKAYA, N.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1) 194-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ION EXCHANGE RESIN, ETHANOL, AQUEOUS SOLUTION, CHLORINATED ORGANIC COMPOUND, NITRATE, THIOCYANATE/(U)AB17 ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0474 STEP NO--UR/0076/70/044/001/0194/0197

CIRC ACCESSION NO--AP0107080

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

013

CIRC ACCESSION NO--AP0107080 UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE ION EXCHANGE CONSTS. OF THE SYSTEMS RCL-NO SUB3 PRIME NEGATIVE AND RCL-NCS PRIME NEGATIVE ON THE COMPN. OF H SUB2 O-ETOH MIXTS. WAS DETD. BY USING THE AB-17 ION EXCHANGE RESIN. INCREASED ETOH CONTENT LEADS TO A BROADENING OF THE SORPTION FRONT, ASCRIBED TO A REDN. OF THE ION DIFFUSION RATE IN THE RESIN GRAIN.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 542.91+542.742+547.834.2

SHIROYAN, F. R., AVETYAN, V. T., TOLMAYAN, A. G., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences of the ArmSSR, Yerevan

"Indole Derivatives. XLII. 3-Alkyl-9-Methoxy-12b-Methyl-1,2,3,4,6,7,12,12b-Octahydroindolo(2,3-a)quinolizines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 26, No 2, 1973, pp 147-152

Abstract: The paper describes synthesis of 3-alkyl-9-methoxy-12b-methyl-1,2,3,4,6,7,12,12b-octahydroindolo(2,3-a)quinolizines. It was found by thin-layer chromatography that these bases form two diastereomers. The IR spectra show the trans configuration of the quinolizidine fragment in one or both diastereomers. The hydrochlorides of these bases were pharmacologically tested, and the results will be given in a future paper.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--A METHOD FOR COMPUTING CURRENTS AND WATER EXCHANGE IN THE KERCH STRAIT -U-

AUTHOR-(02)-ALTMAN, E.N., TOLMAZIN, D.M.

COUNTRY OF INFO--USSR, BLACK SEA

SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 3, PP 438-447

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--OCEAN CURRENT, WATER, WIND, WIND WAVE INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1845 STEP NO--UR/0213/70/010/003/0438/0447

CIRC ACCESSION NO--AP0129207

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

2/2 012 UNCLASSIFIED

CIRC ACCESSION NO--AP0129207 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THEORETICAL METHOD IS SUGGESTED FOR COMPUTING SEA CURRENTS AND WATER EXCHANGE BETWEEN THE BLACK AND AZOV SEAS THROUGH THE KERCH STRAIT. THE METHOD ENABLES ONE TO TAKE INTO CONSIDERATION WIND STRESS AT THE WATER SURFACE. BASED ON THE ASSUMPTION OF THE VERTICAL HOMOGENEITY OF FLUID AND SMALL VALUES OF THE LINEAR TERMS IN THE EQUATION OF MOTION, AN EXPRESSION WAS OBTAINED FOR THE AVERAGE CURRENT VELOCITY AND LEVEL RISE ABOVE UNDISTURBED SURFACE AT ANY POINT OF THE STRAIT. OF THE MOTIVE FORCES, ACCOUNT WAS TAKEN OF THE LONGITUDINAL PRESSURE GRADIENT CAUSED BY THE SEA LEVEL DIFFERENCE, TANGENTIAL WIND STRESS AT THE WATER SURFACE AND HORIZONTAL MOMENTUM EXCHANGE. A SCHEME IS PRESENTED ILLUSTRATING THE COMPUTATION OF CURRENT, SLOPES, VELOCITY AND DISCHARGE. A NOMOGRAM IS SUGGESTED FOR COMPUTING CURRENTS AND WATER EXCHANGE FROM SEA LEVEL DIFFERENCES AT THE ENDS OF THE STRAIT, AVERAGE WIND ABOVE THE STRAIT AND THE GENERAL SEA LEVEL BACKGROUND IN THE BASIN. FACILITY: BASSEYNOVAYA GIDROMETEOROLOGICHESKAYA OBSERVATORIYA CHERNOGO I AZOVSKOGO MOREY SEVASTOPOL.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC: 669.15'782'743'295-196

ZHIRONKIN, A. N., BURKANOV, A. G., RAYNES, L. S., BOROVIKOV, A. A., SOKOLOV, V. L., PERSIDSKAYA, L. V., GABERTSETTEL', A. I., TOLOCHIN, V. G., TARAPATIN, P. S., Leningrad Kirov Plant

"Graphitized Steel"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334272, Division C, filed 15 Sep 69, published 30 Mar 72, p 104

Translation: This Author's Certificate introduces a graphitized steel which contains carbon, silicon, manganese, titanium and iron. As a distinguishing feature of the patent, friction properties are improved by adding copper and taking the components in the following proportions in percent: carbon--1.3-1.5; silicon--1.3-1.6; manganese--0.3-0.5; copper--1.2-1.6; titanium--0.25-0.4. Impurities are as follows (in percent): sulfur--less than 0.03; phosphorus--less than 0.035; chromium--0.20; nickel--less than 0.29; the remainder iron.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

TOLOCHKO, A. A.

Coal Chemistry

(8)

JPRS 57649 1 Dec 72
Trans. of USSR Ind. Affairs
#215

UDC 338.4:662.741

COMPARATIVE EFFICIENCY OF COKE CHEMICAL PRODUCTION STUDIED

[Article by [illegible], A. M. Akhtychenko, N. I. Shilina, [illegible] Tolochko, Scientific Research Institute of Coal Chemistry, [illegible] Borodin, [illegible] Shtern, and [illegible] Bondar' (State Institute for Planning Enterprises of Coke Chemical Industry): "The Economic Advisability of Producing Chemical Products in the Coke Chemical Industry"; Moscow, Koks i Khimiya, Russian, No 10, October 1972, pp 51-54]

The May 1958 Plenum of the CPSU Central Committee was a turning point in the development of the chemical wing of the coke chemical industry, as it was for the chemical industry as a whole. Since 1959 a number of government decrees concerning supplying the chemical industry and other sectors of the national economy with raw materials and semi-finished coke chemical products and concerning steps to expand the assortment of chemical products of coking have been published to develop the decisions of this Plenum.

In the period between 1959 and 1970, 98 chemical shops and departments have been built and put into operation at base coke chemical enterprises (25 to catch chemical products of coking, 14 to remove hydrogen sulfide from coke gas and to produce sulfuric acid, 15 to remove phenol from effluents, eight to process coal tar, five to process crude benzene, five to produce [illegible], nine to coke pitch, two to produce polymer resins, and 15 others).

A characteristic feature of the development of chemical production facilities of the coke chemical industry during this time was the increasingly comprehensive processing of raw material, leading to an increase in the assortment of chemical products of coking and to obtaining higher quality products.

Whereas during 1959-1965 about 65 percent of the units introduced were shops to catch the chemical products

- 22 -

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 547.341

SHEVCHUK, M. I., TOLOCHKO, A. F., and DOMBROVSKIY, A. V., Chernovtsy State University

"Aroyl- α(p-nitrobenzyl)methylenetriphenylphosphoranes"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 540-545

Abstract: The reaction of aroylmethylenetriphenylphosphoranes with p-nitrobenzyl bromide gave a series of aroyl-α-(p-nitrobenzyl)methylenetriphenylphosphoranes (I). Analogously, starting with carbomethoxymethylenetriphenylphosphorane and p-nitrobenzyl bromide, the carbomethoxy-α-(p-nitrobenzyl)-methylenetriphenylphosphorane (II) was obtained. Aroyl-α-(p-nitrobenzyl)-methyltriphenylphosphonium bromide and aroyl-α-chloro-α-(p-nitrobenzyl)-methyltriphenylphosphonium chloride were obtained from the reaction of α-p-nitrobenzyl substituted aroylmethylenetriphenylphosphoranes with hydrogen bromide and phosphorus pentachloride. It was shown that (I) does not react with carbonyl compounds. Reaction of (II) with phenylglyoxal gave the methyl ether of α-(p-nitrobenzyl)-β-benzoylacrylic acid.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC: 547.341

SHEVCHUK, M. I., TOLOCHKO, A. F., and DOMBROVSKIY, A. V., Chernovtsy State University

"Alpha-Substituted Alkoxycarbonylmethylenetriphenylphosphoranes." New Reactions of Phosphoranes with Phenylglyoxal

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 57-66

Abstract: Twelve crystalline alpha-substituted carbomethoxy- and carbethoxymethylenetriphenylphosphoranes were prepared by transacylation, with formation of intermediate phosphonium salts. Thus, treating carbomethoxy- or carbethoxymethylenetriphenylphosphoranes (Ia or Ib) with iodine bromide in chloroform with cooling gave oily phosphonium salts which with saturated sodium carbonate, gave 91-92% yields of alpha-iodinated Ia or Ib. The latter exchanged iodine for the thiocyano group in the reaction with potassium thiocyanate in methanol to give a 73% yield of the alpha-thiocyano analogs, previously unknown. Heating Ib with allyl bromide or methyl bromoacetate in benzene yielded crystalline carbethoxymethyltriphenylphosphonium bromide (II) and alpha-allyl-or alpha-carbomethoxymethyl-substituted Ib. Similarly, adding benzyl iodide to a boiling solution of Ia or Ib in anhydrous ethyl acetate gave crystalline iodine analogs of II, while the filtrates gave 86-84.7%

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

SHEVCHUK, M. I., et al, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 57-66

yields of alpha-benzyl-substituted Ia and Ib, respectively. Ia and Ib reacted similarly with acyl chlorides in benzene to give chlorine analogs of II and 73-97% yields of alpha-acyl-substituted Ia and Ib, where acyl is alpha-toluyl, benzoyl, p-nitrobenzoyl, or 2-furoyl. The exothermic reactions of Ia, Ib, alpha-carbomethoxy methyl-substituted Ib, or alpha-benzyl-substituted Ia and Ib with phenylglyoxal gave triphenylphosphine and ketoesters: methyl and ethyl beta-benzoylacrylates, ethyl alpha-carbomethoxymethyl-(III), methyl alpha-benzyl-, and ethyl alpha-benzyl-(IV)beta-benzoylacrylates, respectively. Crystalline carbomethoxy-3-carbethoxy-5-phenyl- and 3-carbethoxy-2,5-diphenyl-2,3-dihydrofuranes were obtained in 32-33% yields by distillation in vacuo of III and IV, respectively. The above beta-benzoylacrylates except IV were identified by the melting points of their 2,4-dinitrophenylhydrazones. The ketoesters differed from dihydrofurane derivatives with respect to their IR and UV spectra.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UNCLASSIFIED

TITLE--REACTION OF DIAROYLETHYLENES WITH HYDRAZINE HYDRATE AND O,PHENYLENEDIAMINE -U-

PROCESSING DATE--13NOV70

AUTHOR-(03)-SHEVCHUK, M.I., TOLOCHKO, A.F., DOMBROVSKIY, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1108-13

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NUCLEAR MAGNETIC RESONANCE, ISOMER, BENZENE DERIVATIVE, HYDROGEN BONDING, ORGANIC AZO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1278

STEP NO--UR/0366/70/006/005/1108/1113

CIRC ACCESSION NO--AP0134952

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

2/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134952

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NMR SPECTRA OF CIS AND TRANS ISOMERS OF BZCH:CHBZ (I) SHOWED THAT THERE IS NO H BONDING BETWEEN CO GROUPS AND THE H OF THE CH CH GROUP. THE REACTION OF TRANS I WITH N SUB2 H SUB4.H SUB2 O GAVE 3,PHENYL,6,(R,SUBSTITUTED),PYRIDAZINE (R EQUALS PH) (II). SIMILARLY OTHER II (R EQUALS 4,MEC SUB6 H SUB4, 4,MEOC SUB6 H SUB4, 4,CLC SUB6 H SUB4, 4,BR, C SUB6 H SUB4, OR BETA,NAPHTHYL) WERE PREPD. HEATING O,H SUB2 NC SUB6 H SUB4 NH SUB2 WITH TRANS,BZCH:CHR (R AS ABOVE) GAVE 2,PHENYL,5,(R,SUBSTITUTED), 1,6,BENZODIAZOCINES.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

Acc. Nr: AP0049511 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR 0079

100818c α-Substituted alkoxycarbonylmethylenetriphenylphosphoranes. New reactions of phosphoranes with phenylglyoxal. Shevchuk, M. I.; Tolmachev, A. A.; Dombrovskii, A. V. (Chernovits. Gos. Univ., Chernovtsy, USSR). Zh. Obsch. Khim. 1970, 40(1), 57-66 (Russ). Adding 0.114 mole freshly prepd. IBr in 15 min to 0.114 mole $Ph_3P:CHCO_2R$ (Ia) in $CHCl_3$ with ice cooling gave after 30 min an oily phosphonium salt, which, with satd. Na_2CO_3 20 min, gave $Ph_3P:CXCO_2R$ (X = I, R = Me), m. 165.5-6.0°; similarly was prepd. the R = Et analog, m. 134-5°. The former and KCNS in MeOH gave the analog with X = CNS, R = Me, m. 166-6.5°; similarly was prepd. 73% analog (CNS, Et) m. 140-1°. Heating 3.4 g $BrCH_2CH:CH_2$ 7 hr with 10.5 g $Ph_3P:CHCO_2Et$ in C_6H_6 gave 78% $Ph_3PCH_2CO_2Et.Br$ (I), while the filtrate, freed of C_6H_6 and taken up in EtOAc, gave in 1 day at room temp. 62.5% $Ph_3P:C(CH_2CH:CH_2)CO_2Et$, m. 119-20°. $Ph_3P:CHCO_2Et$ and $BrCH_2CO_2Me$ heated 4 hr in C_6H_6 gave 84% I and 80.5% $Ph_3P:C(CH_2CO_2Me)CO_2Et$ m. 133-4°. Similar reaction of Ia with $PhCH_2I$ in hot EtOAc in the absence of moisture gave 92-3% iodide analog of I (or its methoxy analog), while the filtrates gave $Ph_3P:$-

1/2

REEL/FRAME
19801363

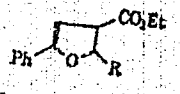
7

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

AP0049511

$C(CH_2Ph)CO_2R$ (R = Me, 86%, m. 187–8°; R = Et, 84.7%, m. 143–4°). Similar reaction with acyl chlorides in C_6H_6 gave 80–98% I or its EtO analog, and 73–96% $Ph_3P{:}CXCO_2R$ (X, R and m.p. shown): $PhCH_2CO$, Et, 137–8°; Bz, Et, 136–7°; p-$O_2NC_6H_4CO$, Me, 198.5–5–9°; 2-furoyl, Et, 112–13°. Treating the unsatd. phosphorane, Ia, and its analogs above with phenylglyoxal (10% excess) gave Ph_3PO and $BzCH{:}CXCO_2R$ (X and R shown): H, Me, 63.7%, m. 32–3°; $PhCH_2$, Me, 89.5%, m. 62–2.5°; H, Et, 50%, b_4 147–8°, n_D^{20} 1.5490; $PhCH_2$, Et, 22%, b_3 227–9°; MeO_2CCH_2, Et, 20%, b_2 196–7°, n_D^{20} 1.5510. The last 2 esters on being distd. cyclize to 33% II (R = Ph) b_1 230–5°, m. 148–9°; and 32% II (R = CO_2Me), m. 78–9°, b_1 190–210°. The following 2,4-dinitrophenylhydrazones were prepd. from the above benzoylacrylates and dinitrophenylhydrazine in aq. H_2SO_4-EtOH and $BzCH{:}CXCO_2R$ (X, R, and m.p. shown): H, Me, 161.5–2.5°; $PhCH_2$, Me, 156–7°; H, Et, 167.5–9°; MeO_2CCH_2, Et, 166.5–7.5°.



(II)

G. M. Kosolapoff

19801364

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 582.288.42:633.511:632.938

SHVETSOVA, L. P. and TOLOK, P. P., Scientific Research Institute of Plant Protection, Tashkent

"Content of Free SH-Groups in Protein of Cotton Seeds Depending on Resistance to Verticillium Wilt"

Leningrad, Mikologiya i Fitopatologiya, No 4, 1971, pp 407-408

Abstract: Shifts in the content of SH-groups in cotton seeds following the use of large amounts of mineral fertilizers were studied. The protein content of seeds from healthy cotton plants (varieties 8,196 and Akala 4-42) increased in the course of maturation, but decreased sharply in seeds from wilt-infected plants after they were 50 days old. When the fertilizer rates were stepped up, the protein content of both healthy and diseased plants increased substantially. The content of SH-groups decreased as the seeds matured, but the amount was much higher in seeds from diseased plants. The increase in protein content with decrease in free SH-groups was correlated with increased resistance to wilt in the offspring. Plants grown from such seeds were more resistant to the disease. For example, in the Akala 4-42 variety with a disease rate of 68% among the mother plants, the incidence of wilt in the offspring dropped to 52.7%, as compared with 70% in the control.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

KABULOV, V. K., TOLOK, V. A. UDC: 681.3.06:51

"An Arithmetic System for Computer Solution of Problems in the Theory of Elasticity and Plasticity"

V sb. Vopr. vychisl. i prikl. mat. (Problems of Computational and Applied Mathematics--collection of works), vyp. 4, Tashkent, 1971, pp 3-102 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V950)

Translation: A method is proposed for automating solution of problems in the theory of elasticity and plasticity. The procedure is based on a special input language developed by the authors (FORTU) for describing formulas of elasticity theory. The language is designed for exchange of information between a standard set of operators.

The article consists of four chapters. The FORTU language is presented in the first chapter. An interpreting system is described in the second chapter. The interpreting system is separate from the general system of automation, and its basic purpose is to derive all necessary mathematical relations; the information for these relations is the mathematical expression of the computational model and the plan of derivation. The plan

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

KABULOV, V. K., TOLOK, V. A., Vopr. vychisl. i prikl. mat., vyp. 4, Tashkent, 1971, pp 3-102

is a set of pseudocurves corresponding to the given analytical operation which must be carried out at a given moment on a given group of formulas (substitution, integration by parts, differentiation, etc.). The third chapter presents the basic tools of the method of automation, which are the standard procedures for calculating the formulas in the FORTU language. Each formula is computed strictly according to definite rules by a single generalized operator which combines automatic programming methods of both the compiling and interpreting type. This operator itself is adjusted according to information which is given in a definite way to conform to the necessary coordinate functions by which the solution is approximated. The fourth chapter is devoted to the sense of the proposed method of automation. The effectiveness of the proposed method is demonstrated by a number of examples realized in the Institute of Cybernetics with Computing Center, Academy of Sciences of the Uzbek SSR on the M-220A computer. Bibliography of 39 titles. V. Mikheyev.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 533.92:621.039.61

ZUKOV, V. G., KARPUKHIN, V. I., RUDNEV, N. I., TOLOK, V. G.

"Study of the Stability of a Plasma Jet in the Magnetic Field of a Divertor"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 213-220 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G296)

Translation: The stability of plasma motion in the magnetic field of a divertor was studied. Observations with the aid of a plasmascope and measurements of radioelectrical fields in the plasma showed that the instability of the rotating plasma occurring in the longitudinal magnetic field of the solenoid is effectively stabilized by the divertor magnetic field.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

Coatings

USSR

UDC 621.793.72:533.9

ZEMSKOV, G. V., KOVAL'CHUK, YU. M., SHARIVKER, S. YU., and TOLOK, V. K., Odessa Polytechnical Institute, Kiev Institute of Civil Aviation Engineers, Institute of Problems of Material Science, Academy of Sciences UKrSSR

"Use of Substrata to Increase the Bonding Strength of Plasma Antifriction Coatings with the Base"

Kiev, Poroshkovaya Metallurgiya, No 12, Dec 73, pp 24-27

Abstract: The authors studied the influence of substrata of molybdenum and nickel aluminide on the bond strength of plasma coatings containing a solid lubricant with the base. The initial material used to apply the sublayer was molybdenum powder or a composite Al-Ni powder produced by chemical deposition of nickel on aluminum particles. It was found that the use of a substratum of nickel aluminide during plasma atomization of antifriction coatings containing molybdenum disulfide as the solid lubricant increased the bond strength by ~30%.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

SUPRUNENKO, V. A., SUKhOMLIN, Ya., and TOLOK, V. T.,

"Current Heating of a Dense Plasma with Collective Interactions in a High-Current Gas Discharge"

Kiev, Fizika Plazmy i Problemy Upravlyayemogo Termoyadernogo Sinteza, No 4, 1973, pp 5 - 15

Abstract: Previous studies have shown that the physical processes occurring in a high-current gas discharge in powerful electrical fields are substantially influenced by the collective interactions of plasma particles with the fields of excited waves. It has been shown that high-frequency instabilities accompanied by microwave radiation can arise, retarding the drift of electrons and stabilizing its velocity at a fixed level. Experiments have also shown the existence of anomalous plasma resistance, leading to the spread of the turbulent method of heating. The development of high-frequency instabilities has been shown to produce effective heating of the electron and ion components of the plasma.

Analysis shows that the anomalous resistance and effective heating of electrons and ions are the result of a complex combination of current instabilities which arise in sequence as various criteria are met in a high-current gas discharge.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 533.92:621.039.61

(12)

ALEKSIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V., GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. KH., KONOTOP, P. I., POGOZHEV, D. P., PELETMINSKAYA, V. G., SERGEYEV, Yu. F., SMIRNOV, V. G., SUPRUNENKO, V. A., TOLOK, V. T., and TARAN, V. M.

"Development and Synthesis of the "Uragan" Stellarator and Investigation of Magnetic Surfaces of High Shear"

Kiev, Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza (Plasma Physics and Problems in Controlled Thermonuclear Synthesis -- collection of works) "Naukova dumka," No 3, 1972, pp 73-112

Abstract: After an initial section devoted to a review of the literature on the magnetic surfaces of toroidal stellarators and the principles of stellarators in general, the authors analyze the "Uragan" specifically. In particular, this paper is concerned with the problems involved in choosing the parameters of the magnetic system for the racetrack stellarator to obtain magnetic surfaces with high shear. This last term is defined as the extent of crossing of the magnetic lines of force. The synthesis and adjustment of the magnetic system are also examined, and

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

(12)

ALEKSIN, V. F., et al., Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza, "Naukova dumka," No 3, 1972, pp 73-112

the results are given of an investigation into the instrument's magnetic surfaces. Computations worked out on an electronic computer for the design of the magnetic system are described, and differences between the "Uragan" and the "Sirius" stellarators are indicated. A comparative table of the parameters for various types of stellarator is given; it shows that the "Uragan" is one of the more powerful thermonuclear machines, with a high shear value for its substantial 10 koersted magnetic field intensity. This article is liberally illustrated with photographs and line drawings and has a bibliography of 51 titles.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

TOLOK, V. T. et al (Physicotechnical Institute, Ukrainian Academy of Sciences)

"Combined Heating of a Plasma by an Electron Beam and an Intense Ion-Cyclotron Wave"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; October, 1972; pp 1235-9

ABSTRACT: The authors present the results of an experimental investigation of the interaction between an electron beam and a plasma in which large amplitude ion-cyclotron oscillations are excited by external high-frequency currents. It is shown that electromagnetic radiation in the SHF range occurs which has a power of ~ 20 db greater than that of the SHF radiation from the usual beam-plasma interaction at the same plasma density. The SHF radiation frequency is the same as the electron plasma frequency. The amplitude of the radiation depends in a resonant manner on the strength of the external magnetic field, and its maximum coincides with that of the ion cyclotron wave amplitude. The polarization of the SHF radiation observed corresponds to that of the extraordinary wave ($E \perp H_0$). The SHF radiation is amplitude-modulated at a frequency of the ion cyclotron wave. When the frequency of the SHF radiation is the same as the harmonics of the electron cyclotron frequency, the amplitude of the SHF radiation drops sharply and the gas-kinetic pressure of the plasma increases by 50-70%.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC: 533.92:621.039.61

ZYKOV, V. G., KARPUKHIN, V. I., LOMIN, Yu. F., RUDNEV, N. I., TOLOK, V. T., Physicotechnical Institute of the Academy of Sciences of the UkrSSR, Khar'kov

"Investigation of Plasma Containment in the Magnetic Field of a Racetrack With Diverter"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 5, May 72, pp 939-945

Abstract: An experimental study is made of the time of containment of plasma particles in a racetrack with a diverter. The trap was filled with plasma by injection from a coaxial source through magnetic slits in the diverter. It was found that the diverter configuration ensures plasma equilibrium in a toroidal magnetic field without rotational transformation of the lines of force of the magnetic field. Two traps can be distinguished in the system: a corkscrew trap in the diverter, and a toroidal trap. The particles drift more rapidly in the diverter magnetic field because of plasma drift in the magnetic slits. The lifetime of the plasma in the diverter τ_1 is independent of the magnetic field H. In the toroidal magnetic field the lifetime $\tau_2 \sim H$, losses being due both to drift in the diverter and the development of instabilities. Since in this experiment a classical diverter with a continuous metal barrier between the central coil and the wall of the

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

ZYKOV, V. G., et al., Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 5, May 72, pp 939-945

chamber was used, all charged particles which drift into the magnetic slits of the diverter are neutralized by this barrier. To reduce plasma losses in the diverter, the central diverter coil should be held by local supports with a minimum cross sectional area. Plasma losses on the toroidal sections can be reduced by increasing the number of diverter cells.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 621.039.623

ALEKSIN, V. F., BIRYUKOV, O. V., GEORGIYEVSKIY, A. V., KITAYEVSKIY, L. KH., KOMAR, YE. G., LOGINOV, A. S., MALYSHEV, I. F., MONOSZON, N. A., POPKOVICH, A. V., ROZHDESTVENSKIY, B. V., SAKSAGANSKIY, G. L., SINEL'NIKOV, the late K. D., SOKOLOV, YU. A., SUPRUNENKO, V. A., TOLOK, V. T., CHURAKOV, G. F., and SHABEL'NIKOV, L. A.

"The Experimental Thermonuclear Device 'Uragan'"

Moscow, Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

Abstract: An urgent task of stellarator research is a definitive elucidation of the reasons for anomalous diffusion in a stellarator, as well as the effect of the shear and magnetic well on the confinement of a hot and dense plasma. These questions will be studied on the "Uragan" stellarator. Construction of the "Uragan" stellarator was begun at the suggestion of I. V. KURCHATOV and completed in 1967. The physical substantiation and technical assignment of developing and constructing the complex were developed at the Physicotechnical

1/3

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

ALEKSIN, V. F., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

Institute of the Academy of Sciences Ukrainian SSR under the direction of K. D. SINEL'NIKOV, who took an active part in the solution of theoretical and technical questions. Organizations taking part in the development of the project and the construction of the complex included the Scientific Research Institute of Electrophysical Equipment imeni D. V. Yefremov, the Elektrosila Electrical Engineering Combine, the Khar'kov Polytechnic Institute imeni V. I. Lenin, the Electromechanical Plant and NIIElektroapparat [Scientific Research Institute of Electrical Equipment] in Khar'kov. A considerable amount of work on the development, manufacture, and adjustment of the systems and components of the "Uragan" was done at the Physicotechnical Institute of the Academy of Sciences Ukrainian SSR.

The principal feature of the "Uragan" is high shear (of the order of 0.02 and 0.1) at a high level of magnetic field strength

2/3

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

ALEKSIN, V. F., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

H_0 (35 and 10 koe respectively). The stellarator is in the shape of a racetrack and uses a high-shear triplex helical field. The vacuum chamber of the trap consists of two semi-tori with an average radius R = 1100 mm and two rectilinear sectors, each 1725 mm long. The internal diameter of the chamber is 200 mm. On the outside of the chamber on the toroidal sectors are two helical windings and longitudinal magnetic field coils, distributed evenly along the device. The maximum strength of the magnetic field is 10 koe under steady-state conditions and 35 koe under pulsed conditions. Three windings are used; viz., longitudinal magnetic field, helical, and transverse magnetic field. All metallic elements are made of low-magnet steel 1Kh18N9T. The toroidal sectors of the vacuum chamber and part of the rectilinear sectors are made of stainless nonmagnetic alloy EP-125. The article gives a detailed description of the windings, cooling system, electric power supply system, vacuum system, and plasma diagnostic and heating system.

3/3

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 533.0

ZYKOV, V. G., KARPUKHIN, V. I., RUDNEV, N. I., TOLOK, V. T., Physicotechnical Institute, Academy of Sciences, Ukrainian SSR, Khar'kov

"Investigation of the Motion Stability of a Plasma Stream in the Magnetic Field of a Diverter"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 15, No 7, July 1970, pp 1135-1141

Abstract: Research has shown that the plasma in a longitudinal magnetic field is in a state of unstable equilibrium. Placing a diverter on a straight-line sector of the racetrack brings about considerable changes in the topology of the magnetic field of the track. The article deals with an experimental investigation of the motion stability of the plasma stream in the magnetic field of the diverter, which is an important unity of a race-track stellarator. It is shown that the magnetic field of the diverter is effective in stabilizing plasma motion in a longitudinal magnetic field.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 533.9

VISHNEVETSKIY, V.N., VOYTENKO, D. A., VOLKOV, YE. D., DIKIY, A. G., ZALKIND, V. M., KONOTON, P. I., MOISEYEV, S. S., PAVLICHENKO, O. S., PASHNEV, V. K., SUPRUNENKO, V. A., TOLOK, V. T., TERESHCHENKO, F. F., TONKOPRYAD, V. M., and TARASENKO, V. P., Physico-Technical Institute of Academy of Sciences Ukrainian SSR, Kharkov

"Energy Losses of Plasma in a 'Uragan' Stellarator With Large Shear"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 8, Aug 71, pp 1320-1323

Abstract: Investigations of the rate of energy losses in plasma have shown that the holding time of particles significantly exceeds the energy life time when the plasma is of collision type. This article discusses the results of investigations on the rate of energy losses of collision-type plasma for the "Uragan" stellarator. The authors study the dependence of energy life time of the plasma on the amount of shear and the angle of conversion. They make extensive use of graphs to illustrate their findings and find that the experimental points lie on a straight line. The authors conclude that the results may be explained on the basis that a temperature-drift instability develops in the plasma. The article contains 5 figures and 8 bibliographic entries.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

2

UDC 533.9

ATAMANOV, M. S., ZAIKIND, V. M., ZYKOV, V. G., IL'YENKO, B. P., LATS'KO, Ye. M., and TOLOK, V. T., Physicotechnical Institute of the Academy of Sciences Ukr SSR, Khar'kov

"Capture of Plasma Injected Into an Injector-Divertor Device of a Stellarator in the Case of a Short- and Long-Term Modulation of the Confining Magnetic Field"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 17, No 3, Mar 72, pp 368-371

Abstract: The experimental investigation of the capture of plasma by the magnetic field of an injector-divertor device of a stellarator is described. The capture of the plasma was investigated by modulation durations of the confining magnetic field longer and shorter than the duration of plasma injection. By the use of a short-term pulse of the counter magnetic field, the forward part of the plasma flux, which is more valuable for the injection, can be trapped and, in the meanwhile, the rear part will split off by entering into the injection chamber. The length of the plasma flow captured in the trap can be controlled by changing the pulse duration of the magnetic field opposed to the field of the trap. The results are discussed by reference to an oscillogram of the probe saturation current of the captured plasma and dependence of the total number of captured charged particles and the density of captured plasma on the counter magnetic field intensity. Four illustr., six biblio. refs.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 533.916

SHVETS, O. M., KURILKO, V. I., TOLOK, V. T.

"Stochastic High-Frequency Ion Heating"

Kiev, Fizika plasmy i problemy upravlyayemogo termoyadernogo sinteza, 1971, Naukova dumka, pp 86-90

Abstract: Although the authors admit the efficiency of obtaining high-energy ions in a dense plasma by heating the latter with a high-frequency field, they find in that method the objection that the energy introduced into the plasma by a monochromatic high-frequency field is in the form of regular collective ion motion in the field of the wave. There is then no relative motion and collision of the ions, and a conversion of this regular collective ion motion into chaotic motion through thermalization of the energy introduced into the plasma becomes necessary. The article lists three fundamental effects leading to the thermalization and indicates how they can be achieved theoretically; they are: paired collisions of particles with various charge-mass ratios; collisionless collective attenuation caused by Cerenkov or Doppler

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

SHVETS, O. M. et al, Fizika plasmy i problemy upravlyayemogo termoyadernogo sinteza 1971, Naukova dumka, pp 86-90

absorption of the wave energy by particles in resonance with the wave; nonlinear effects causing fractionalization of the energy of the original wave. Conditions to be met to obtain these effects are found.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

TOLOK, V. T.; et al

"Study of the Capture of a Plasma in an Injector-Diverter of a Stellarator"

Leningrad, Zhurnal Tekhnicheskoy Fiziki; June, 1971; pp 1123-30

ABSTRACT: A description is given of experiments on the study of the capture of a plasma by the magnetic field of an injector-diverter of a stellarator (Indus). The injection of the plasma is accomplished by means of a coaxial source tangentially to one of the lines of force of the magnetic current partially or fully extracted from a trap in the injector chamber. The capture coefficient, radial distribution of the density, and other parameters of the captured plasma as functions of the percentage modulation of the basic magnetic field by the reverse field of the coil were measured. It is shown that an efficient input of the plasma into magnetic traps is possible with the use of local pulse weakening of the magnetic field and injection of the plasma in a direction tangent to one of the magnetic lines of force.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

TOLOK, V. T.; et al (Physics-Engineering Institute of the Ukrainian Academy of Sciences, Khar'kov)

"Study of the Drift and Equilibrium of a Plasma in a Toroidal Magnetic Field with a Divertor"

Kiev, Ukrainskiy Fizicheskiy Zhurnal; February, 1971; pp 303-8

ABSTRACT: A study was made of the drift and equilibrium of a plasma jet with axial injection in the magnetic system of a divertor connected to a toroidal magnetic field which produced a 180-degree turn of the lines of force. A comparison was made of the passage of the plasma along the toroidal portion, with the presence and absence of the divertor configuration. It was shown experimentally that the divertor magnetic field, joined with the toroidal magnetic field, sharply reduces the toroidal drift of the plasma jet, thanks to the removal of the transverse electrical polarization field of the plasma by currents passing along the magnetic lines of force and closing through the circular region of the divertor, where the magnetic field is equal to zero.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 533.92:621.039.61

ALEKSIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V., GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. Kh., KONOTOP, P. I., POGOZHEV, D. P., PELETMINSKAYA, V. G., SERGEYEV, Yu. F., SMIRNOV, V. G., SUPRUNENKO, V. A., TOLOK, V. T., TARAN, V. M.

"Development and Production of the Magnetic System of the 'Uragan' Stellarator and a Study of Magnetic Surfaces With Large Sheer"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 73-112 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G279)

Translation: This paper concerns the study of the magnetic system of the three-loop "Uragan" stellarator-racetrack. Considerations concerning the selection of optimal parameters of the magnetic system of the stellarator are discussed. The equipment of the "Uragan" is briefly described. An experimental study of the magnetic surfaces made with the aid of low-energy electron beams showed that in the "Uragan" stellarator-racetrack with

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

(12)

ALEKSIN, V. F., et al, Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb., 1972, No. 3, pp 73-112

individually controlled cylinders there are closed magnetic surfaces with high sheer values (∿0.09) and angle of rotational conversion (∿240°). The experimental data are compared with calculated values obtained on the BESM-6 computer.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

IVAKHNENKO, A. G., TOLOKNYANENKO, V. A., and YAREMENKO, A. G., Kiev

"Control with Optimization of Prediction with Discrete Linear Predicting Models of a Plant"

Kiev, Avtomatyka, Jan-Feb 74, pp 28-38

Abstract: As distinct from an article in issue #2, 1973, of this journal by Ivakhnenko and Toloknyanenko entitled "Control with Optimization of Prediction with Continuous Models of a Plant," this article considers systems with discrete, linear predicting models. Optimization is performed on a sliding prediction interval. Equations are obtained for the action of a closed system. The authors study the effect of the prediction time on the action and stability of closed-loop control systems with optimization of prediction. An asymptotic law is established according to which a decision taken at the current moment undergoes no changes with a further increase in the prediction time if the prediction time is sufficiently great. According to the principle of the Pontryagin maximum, optimal control is found which is possible with optimization of processes whose behavior can be predicted by means of linear Models.

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

IVAKHNENKO, A. G., et al., Avtomatyka, Jan-Feb 74, pp 28-38

In the case of problems of large dimension and with nonlinear filters, one should apply the principle of self-organization ["Self-Organization of Recognition Systems and Automatic Control," Kiev, 1969, by a A. G. Ivakhnenko].

The article includes 17 equations and two figures. There are six references.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

POTUDIN, O. V., TOLOKONNIKOV, L. A.

UDC 539.3.01

"Concerning the Three-Dimensional Problem of the Elasticity Theory of Materials of Different Moduli"

V sb. Raschet prostranstv. sistem v stroit. mekh. (Calculation of Three-Dimensional Systems in Structural Mechanics -- Collection of Works), Saratov, Saratov University, 1972, pp 55-58 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V16)

Translation: The solution of a system of equations of the axisymmetric theory of elasticity for bodies of materials of various moduli is constructed. The characteristics of the stressed state of a short continuous cylinder of a material of varying modulus loaded at the end surface with a piecewise-linear load is given as an example. V. S. Vol'pert.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

032

UNCLASSIFIED

TITLE--PLANE DEFORMATION OF AN ANISOTROPIC BODY -U-

PROCESSING DATE--30OCT70

AUTHOR-(03)-TOLOKONNIKOV, L.A., YAKOVLEV, S.P., KUZIN, V.F.

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MEKHANIKA, VOL. 6, APR. 1970, P. 86-92

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ANISOTROPY, STRESS ANALYSIS, DEFORMATION RATE, PLASTIC FLOW, NUMERIC INTEGRATION, COLD DRAWING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1181

STEP NO--UR/0195/70/006/000/0086/0092

CIRC ACCESSION NO--AP0124835

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

CIRC ACCESSION NO--AP0124835 UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE PLANE STRAIN STATE EQUATIONS FOR STRESSES AND RATES OF STRAINING OF AN ANISOTROPIC RIGID PLASTIC NONSTRAIN HARDENABLE MATERIAL, UNDER THE ASSUMPTION THAT HILL'S (1956) YIELD CONDITION AND ASSOCIATED FLOW LAW ARE VALID. THE PROBLEM OF THE DRAWING OF AN ANISOTROPIC STRIP THROUGH A WEDGE SHAPED DRAW HOLE IS SOLVED, WITHOUT AND WITH ALLOWANCE FOR FRICTION, BY NUMERICAL INTEGRATION OF THE CHARACTERISTIC EQUATIONS.

FACILITY: TUL'SKII POLITEKHNICHESKII INSTITUT, TULA, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC: 621.373

GRISHIN, Yu. P., NOVOSEL'TSEVA, T. Ya., TOLOKONNIKOV, S. V., CHIRITSO, R. L., YURCHENKO, Yu. S.

"A Precision Delayed-Pulse Oscillator"

V sb. Obmen opytom v radiopromyshlennosti (Experience Pooling in the Radio Industry--collection of works), Vyp. 6, Moscow, 1970, pp 63-67 (from RZh--Radiotekhnika, No 11, Nov 70, Abstract No 11A332)

Translation: Multichannel delay circuits with interpolation scale made in the form of a digital phase shifter are used for constructing a digital delayed pulse oscillator. A delay setting discreteness of 10 nsec is attained. Individual descriptions are given of the cadence pulse generator and the digital phase shifter as the elements which are of the greatest interest. E. L.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

IVAKHNENKO, O. G. and TOLOKNYANENKO, V. O. (Kiev)

"Control with Prediction Optimization in Simple, Continuous Models of a Plant"

Kiev, Avtomatyka; March-April 1973, pp 64-72

Abstract: A control system with prediction optimization responding to the basic principles of self-organization is investigated. A simple linear predicting model acting only in a local (limited) interval of time equal to the prediction time is applied to the system. Because of the simplicity of the model, the authors are able to apply the Pontryagin principle of the maximum to optimization and to clarify the basic properties of the above-mentioned system; in particular, to discover an asymptotic law according to which, with an increase in prediction time, optimal control varies less and less and stability of the control system increases (monotonically or with damping oscillations) to some steady-state value.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 534.222.2:533.27

TOLOKONNIKOV, L. A., and VOLODIN, G. T., Tula Polytechnical Institute

"Calculation of a Point Explosion in Various Active Media"

Kiev, Prikladnaya Mekhanika, Vol 9, No 1, Jan 73, pp 15-19

Abstract: Consideration is given to the calculation of a point explosion in various active media, that is to say, in media with the release or absorption of finite energy at the shock-wave front. The solution is conducted over the entire range of the change of intensity of the shock wave, from a strong shock wave to one that is degenerating into a sonic wave, and is conducted for plane, cylindrical, and spherical symmetry within a wide range of the adiabatic exponent and the density of the energy released or absorbed at the shock-wave front. The numerical calculations were conducted on the "Minsk-22" electronic digital computer. 1 figures, 6 references.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 539.3

POTUDIN, O. V. and TOLOKONNIKOV, L. A. (Tula)

"On the Theory of Heteromodular Shells of Revolution"

Kiev, An UkrSSR, Prikladnaya mekhanika, Vol 6, No 1, 1970, pp 22-26

Abstract: Relationships of heteromodular shell theory are used in studying the stress distribution in a shell of revolution made of a material with different elasticity moduli in tension and compression, and subjected to axisymmetrical uniform loading with moments and forces acting at the shell's face edges. It is assumed that the dependence of shell-material rigidity on deformation is described by a continuous function. The stress and displacement functions are given in form of expansions in series in powers of a small heteromodularity parameter taking into account the terms of the zero and first powers. An asymptotic expansion is used in reducing the three-dimensional problem to its approximate two-dimensional description. Some results of numerical stress analysis in a thin heteromodular shell are given in a table showing the effect of the heteromodularity of the shell's material on the stress distribution. Orig. art. has: 1 table, 19 formulas and 6 references.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

TOLOMANENKO, A. F.

UDC: 621.375.9

"Calculating the Transfer Constant of a Transistorized Parametric Microwave Multiplier"

Kiev, IVUZ: Radioelektronika, Vol 15, No 3, Mar 72, pp 391-393

Abstract: It is shown that the transfer constant of a transistorized parametric multiplier is equal to the transfer constant of an equivalent power amplifier multiplied by the transfer constant of a series-connected varactor multiplier based on the nonlinear capacitance of a collector PN junction. The transfer constant of the power amplifier is calculated by conventional methods, and an expression is derived for the transfer constant of the varactor multiplier by using a T-network transistor substitution circuit. The final expressions are written for the case of resonances in the loops of the multiplier. A comparison of experimental data for a frequency tripler with the results of calculation by the proposed method shows satisfactory agreement.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

TOLCMANENKO, A. F.

UDC 621.3.082.266

"Dependence Of Settling-Down Of The Electrons Of A Ribbon Beam At The Sides Of A Channel Of Rectangular Cross Section, On The Distance Between The Beam And The Channel Sides"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), No 5, pp 156-158 (from RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract No 8A15)

Translation: The results are described of an investigation of the settling-down [osedaniye] of the electrons of a ribbon beam at the side of a channel of rectangular cross section, with various distances between the beam and the walls of the channel. Graphs are presented of the dependence of the distance at which settling-down of the electrons of the beam at the sides of the channel is initiated, on the geometry of the channel. Summary.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

SOV/JPRS 59279
14 June 73

EPITAXIAL LAYERS OF SILICON OBTAINED BY PYROLYSIS OF HYDRIDES

[Article by T. A. Zeveke, V. A. Tolmasov, Novosibirsk, Protsessy Rosta i Struktura Monokristallicheskikh Sloyev Poluprovodnikov -- Trudy Simpoziuma, Russian, Part 2, 1969, pp 122-128]

The epitaxial deposition of thin layers of semiconducting materials, in particular, silicon, from the gas phase is attracting the attention of many researchers. Halide [1, 2] or hydrogen [3-5] compounds of silicon are used as the initial product.

The method of pyrolysis of the hydrides has a number of advantages over the method of reduction of the chlorides. First, the technological process of obtaining the silicon hydrides insures a higher degree of their purity. Secondly, as a result of the high vapor pressure at room temperature, it is possible to store the hydrides in steel cylinders and introduce them into the reaction volume with direct control using flow meters. Thirdly, a byproduct during thermal decomposition of the hydrides is hydrogen which does not change the conditions of the growth process. Fourthly, the introduction of an alloying agent by means of phosphorus, boron or arsenic hydrides gives clearer p-n junctions than in the chloride method as a result of low adsorption of the hydrides by the walls of the apparatus. Fifth, the diffusion of the admixtures from the substrates to film is less in the hydride method than in the chloride method as a result of the lower growth temperature.

However, the autocatalytic nature of the pyrolysis action of the hydrides imposes requirements on the surface quality of the substrate which are more rigid by comparison with crystallization from chlorides.

The papers on obtaining thin autoepitaxial layers of silicon by the pyrolysis of monosilane have appeared since 1963 [6]. The study of the kinetics of the process was the topic of reference [3], and obtaining semiconductor devices and investigating their properties was the topic of the paper [5]. Obtaining epitaxial layers with satisfactory characteristics has become possible only after the single seed crystals began to be processed by gaseous hydrogen chloride before the beginning of growth. With the development of solid state electronics one of the most important goals has become the development of a method of obtaining heteroepitaxial layers. The use of insulating materials as the single seed crystal should insure the possibility of

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

TOLOMASOV, V.A., ABROSIMOVA, L.N., SERGIYEVSKAYA, T.N.

UDC 621.382.2

"Study Of Four-Layer Epitaxial High-Voltage Silicon Of p^+-n-p-n^+ Structure (Short Communication)"

Elektron.tekhnika. Nauch.-tekhn.sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 66-67 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B224)

Translation: Epitaxial structure of the p^+-n-p-n^+ type were prepared by sublimation of Si in a vacuum. Disks of Si doped with phosphorous were used as substrates, performing the role of a n-type base. The p-type bases were prepared from a source of Si doped with boron, and the p^+-n^+ emitters from Si doped with boron and phosphorous respectively. The current-voltage characteristics of the structure has a section with negative resistance. The reverse voltage of the structure is 2000--2400 V, and the switching voltage is 1200--1500 V. The large residual voltage (2--5 V) is explained by the high resistance of the applicable contacts and n-base. 2 ref. 1 tab. N.K.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

JPRS 59208

6-73

X-13. CONCENTRATION PROFILES IN AUTOEPITAXIAL LAYERS OF SILICON

[Article by V. A. Tolomasov, T. N. Sergiyevskaya, L. N. Abrosimova, T. A. Zeyeke, Gor'kiy; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 142]

1. The volt-capacity method and the method of interstitial etching were used to study the concentration distribution of the charge carriers in autoepitaxial layers of silicon of p and n-type conductivity grown by pyrolysis of hydrides and by sublimation in a vacuum on substrates alloyed with B, P and Sb to a concentration of ~ 10^{19} cm^{-3}.

2. The width of the concentration $p-p^+$ and $n-n^+$ junctions obtained at temperatures of 700-1000°C in a vacuum and 1100°C by pyrolysis of hydrides does not exceed 0.2 microns and can be caused by diffusion of the admixture from the substrate.

3. On the concentration curves from autoepitaxial layers of silicon grown at 1000-1100°C on substrates alloyed with phosphorus, tails up to one micron long are observed which are unexplainable by phosphorus diffusion from the substrate.

4. The nature of the observed profiles can be explained by the peculiarities of the hybrid and vacuum technology of obtaining autoepitaxial silicon layers.

TOLOMASOV, V.A.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

JPRS 59208

6-73

5

XII-8. STUDY OF THE AUTOEPITAXIAL LAYERS OF GERMANIUM OBTAINED FROM HYDRIDES

[Article by T. A. Zeveke, V. A. Tolomasov, O. A. Kuznetsov, L. N. Kornev, A. A. Ruhtsov, Gor'kiy; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 171]

1. Layers of germanium were grown by the hydride method in a quartz reactor with high frequency heating and in a metal reactor with direct filament heating on strongly alloyed germanium substrates.

2. The alloyed layers of germanium were grown from a mixture of hydrides (germanium with diborane or phosphine).

3. The morphology, the structure and the electrical parameters of the germanium layers were investigated as functions of the crystallization conditions: the growth temperature, the hydride concentration, the linear flow rate, and the state of the substrate surface.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UNCLASSIFIED

430-600DEGREES -U- ...ERS OF SILICON OBTAINED BY IN VACUO SUBLIMATION AT

PROCESSING DATE--30OCT70

AUTHOR-(03)-KUZNETSOV, V.P., POSTNIKOV, V.V., TOLOMASOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 391-2

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SILICON, METAL COATING, METAL FILM, ELECTRIC RESISTANCE, VACUUM SUBLIMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1564

CIRC ACCESSION NO--AP0125190

STEP NO--UR/0070/70/015/002/0391/0392

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

CIRC ACCESSION NO--AP0125190 UNCLASSIFIED PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS A RESULT OF SI SUBLIMATION UNDER A VACUUM OF CONGRUENT TO 1 TIMES 10 PRIME NEGATIVE7 MM HG (TEMP. OF THE SUPPORT 550-600DEGREES), SI LAYERS WERE OBTAINED WITH HIGH ELEC. RESISTANCE OR OF N TYPE WITH HIGH CONCNS. OF ALLOYING ADDNS. (B, AS), CHARACTERIZED BY AN EXCELLENT STRUCTURE. AFTER EVAPN. OF SI WITH B ADDNS., SINGLE CRYSTAL LAYERS WERE OBTAINED IN WHICH THE STACKING FAULT D. WAS 10 PRIME2 NEGATIVE-10 PRIME2-CM PRIME2; THE DISLOCATION D. WAS 10 PRIME NEGATIVE3-10 PRIME NEGATIVE4-CM PRIME2; AND THE ELEC. RESISTANCE, WAS 60-70 OHM-CM.

FACILITY: GOR'K. ISSLED. FIZ.-TEKH. INST., GORKI, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 541.124/128

FEDEVICH, M. D., DOVBENCHUK, E. M. and TOLOPKO, D. K.

"Mechanism of Hydrochlorination of alpha-Unsaturated Carboxylic Acids and Their Derivatives"

Visnik L'vivs'k. politekhn. in-tu (Bulletin of the L'vov Polytechnic Institute), 1969, No 36, pp 41-45 (from RZh-Khimiya, No 1(I), 10 Jan 70, Abstract No 1 B 906)

Translation: A study was made of the reaction of HCl in addition onto alpha-unsaturated carboxylic acids in a number of solvents. The relative reaction rates for the case of acrylic acid increase in the following order: heptane < chlorobenzene (1.56) < glacial AcOH (49.7) < water (61.8) < dioxane (523.0) < DMFA [dimethylformamide] (1090.0). Acids are ranked in the following order by the rate of hydrochlorination in the different solvents: acrylic > crotonic > methacrylic > cinnamic. Experimental data indicate the nucleophilic nature of the addition of HCl to alpha-unsaturated acids.

E. F. Nosov

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

1/2 020 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--MUTUAL EFFECT OF OLEFINS ON THEIR OXIDIZABILITY OVER IRON ANTIMONY MOLYBDENUM OXIDE CATALYSTS -U-

AUTHOR-(03)-FEDEVICH, YE.V., ZHIZNEVSKIY, V.M., TOLOPKO, D.K.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(4), 400-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OLEFIN, CATALYTIC OXIDATION, IRON, ANTIMONY, MOLYBDENUM, BUTENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/B07 STEP NO--UR/0073/70/036/004/0400/0403

CIRC ACCESSION NO--AP0140351

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0140351 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATIO OF FE, SB, AND MO ATOMS IN THE OXIDE CATALYST WAS 1:0.06:1. ON THIS CATALYST THE RATE OF OXION. DECREASED FROM ETCH:CH SUB2 TO ME SUB2 C:CH SUB2, TO MECH:CH SUB2. IF AS MUCH AS 10 MOLE PERCENT OF BUTYLENE WAS PRESENT OXION. OF MECH:CH SUB2 WAS SUPPRESSED. THIS IS INTERPRETED AS INDICATING THAT CATALYSIS OPERATES BY AN ADSORPTION AND NOT BY A RADICAL MECHANISM. THE GREATER RATE FOR ETCH:CH SUB2 OVER THAT OF ME SUB2 C:CH SUB2 IS ATTRIBUTED TO THE GREATER REACTIVITY OF SECONDARY H ATOMS.

POLITEKH. INST., LVOV, USSR. FACILITY: L'VOV

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 616-036.882-08-06:616-002-036.1

SOBOLEVA, V. I., TOLOVA, S. V., GURVICH, N. L., SIDORA, A. K., TRUBINA, I. Ye., and MUTUSKINA, Ye. A., Laboratory of Experimental Physiology for Reanimation, Academy of Medical Sciences USSR, Moscow

"Characteristics of the Course of the Restoration Period in Animals Revived by Extracorporeal Circulation After Clinical Death"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 5, Sep/Oct 70, pp 24-27

Abstract: Forty-three adult dogs which had sustained clinical death from profuse hemorrhage for 7 to 12 min. were revived by use of extracorporeal artificial-circulation equipment. In nonanesthetized dogs, corneal reflexes were suppressed for only 10 min. after the onset of high-volume rate perfusion (not less than 100 mg/kg/min). The electrical activity of the cerebral cortex was reduced at first. For most anesthetized animals, revival could be accomplished even 12 min. after clinical death. It was concluded that artificial blood circulation equipment could be used to revive nonanesthetized dogs within 8 min. of clinical death from hemorrhage, in some cases even within 10 min. Anesthetized animals could be revived after 10 min. of clinical death, a fact which was attributed to moderate

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

SOBOLEVA, V. I., et al, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 5, Sep/Oct 70, pp 24-27

hypothermia accompanying the anesthesia. The body temperature of the anesthetized dogs dropped to a mean of 35°C before bloodletting and to 31.9°C before artificial blood circulation was stopped. Hypoxia during the resuscitation period was much less pronounced in these dogs.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

Therapy

USSR

UDC 616-036.882-02:616-005.1]-08-07:616.24-008.4

SIDORA, A. K. and TOLOVA, S. W., Laboratory of Experimental Physiology of Resuscitation, Academy of Medical Sciences USSR, Moscow

"The Effect of Methods of Resuscitation on the Dynamics of Restoration of the Structure of the Respiratory Act in Dogs After Ten Minutes of Clinical Death Caused by Acute Blood Loss"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 29-32

Abstract: Two methods of resuscitation were compared: (1) intra-arterial injection of blood plus epinephrine and artificial respiration and (2) extracorporeal circulation (using an AIK-RP-64 apparatus) and artificial respiration. Both methods were tested on anesthetized and nonanesthetized animals. Extracorporeal circulation at a relatively low volume rate of perfusion revived the animals significantly sooner than did intra-arterial injection of blood. A high volume rate of perfusion delayed restoration of the activity of the inspiratory and

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

SIDORA, A. K. and TOLOVA, S. V., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 29-32

expiratory center in the nonanesthetized animals due to hypocapnia. Anesthesia and the resulting moderate hypocapnia caused the activity of the inspiration center and the normal structure of the respiratory act to be restored sooner in anesthetized animals than in nonanesthetized animals, despite the high volume rate of perfusion and hypocapnia.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

ROMANKEVICH, A. M., RUKKAS, O. D., TOLPANOV, YU. A. [redacted]

UDC 621.396.6.013

"Matrix Recorder of Galvanic Couplings"

USSR Author's Certificate No 291205, filed 30 Jun 69, published 10 Jun 71 (from RZh—Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A529P)

Translation: A matrix recorder of galvanic couplings is proposed which contains coordinate switching units and two triode matrices. There are 3 illustrations.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 681.326.34

BUBNOV, A. I., ROMANKEVICH, A. M., RUKKAS, O. D., TOLPANOV, Yu. A., Kiev Electronic Computer and Controlling Machine Plant

"A Device for Troubleshooting an Electrical Installation"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288420, class 42, filed 14 Feb 69, published 3 Dec 70, p 156

Translation: This Author's Certificate introduces a device for troubleshooting an electrical installation. The device contains registers, input, output and control modules, a comparison circuit, logic elements, a pulse generator and a device for registration of electrical connections. As a distinguishing feature of the patent, the device is simplified and speed is increased by connecting the output of the input module to the input of one register, and through a coincidence circuit to the input of the other register. The second input of the coincidence circuit is connected to the output of the control module, and the outputs of the registers are connected to the inputs of the device for registration of electrical connections, the comparison circuit and the output module. The outputs of the output module are connected to the inputs of the input and control modules.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

GARIFULLINA, R. L., ZARIPOV, M. M., STEPANOV, V. G., TOLPAROV, Yu. N., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Exchange-Coupled Mn^{2+} Ion Pairs in NaCl"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 12, Dec 72, pp 3513-3516

Abstract: The electron paramagnetic resonance method is used to study exchange-coupled pairs of short-range, neighboring, bivalent manganese cations in sodium chloride crystals grown with sulfur dopants. It is shown that this pair is ferromagnetic. The constants of the spin hamiltonian are determined at room temperature for the multiplet with S=5: $g=2.004\pm0.0005$, $|D| = 0.0259 \pm 0.0001$ T, $|E| = 0.0029 \pm 5\cdot10^{-5}$ T, and $|A/2| = 0.0042 \pm 0.0002$ T. The variation of line intensity with temperature gives a constant of isotropic exchange interaction $J = -(63 \pm 17)$ cm^{-1}. A model is proposed for compensation of excess charges of the Mn^{2+} ions.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UNCLASSIFIED

PROCESSING DATE--23OCT70

...ICATION OF ELECTRIC SOUPLED STIMULATION TO IMPROVE THE EFFICACY OF CERTAIN METHODS OF SYNCHRONOUS AUXILIARY CIRCULATION -U-

AUTHOR-(04)-SHUMAKOV, V.I., KUVAYEV, A.YE., TOLPEKIN, V.YE., SVETLOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970, VOL 14, NR 2, PP 83-88

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART RATE, BLOOD CIRCULATION, HEART STIMULATOR, ELECTROPHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0033

STEP NO--UR/0396/70/014/002/0083/0088

CIRC ACCESSION NO--AP0105132

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

020

CIRC ACCESSION NO--AP0105132 UNCLASSIFIED PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT WAS SHOWN IN EXPERIMENTS ON 40 DOGS THAT APPLICATION OF COUPLED STIMULATION IN USING OF SOME METHODS OF SUXILIARY CIRCULATION (BY PASS SHUNTING OF THE LEFT CARDIAC VENRICLE AND COUNTERPULSATION) IN CASES OF MARKED TACHYCARDIA AND SOME TYPES OF ARRHYTHMIA, CONSIDERABLY INCREASED THE EFFICACY OF THESE METHODS.

FACILITY: LABORATORIYA ISKUSSTVENNOYE SERDTSE I KLAPANNYYE PROTEZY NAUCHNO ISSLEDOVATEL'SKOGO INSTITUTA KLINICHESKOY I ESKPERIMENTAL'NOY KHIRURGII MINISTERSTVA ZDRAVO OKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

FOSHIN, G.G., TOLPOLAR', Sh. Ye.

UDC 612.396.677.7

"Excitation of a Spirally Conducting Cone"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 12, Dec 70, pp 2496-2503

Abstract: Kontorovich-Lebedev integral transformation is used to find a strict solution for the problem of symmetric electrical dipole excitation of a conical surface which is ideally conductive along hyperbolic spirals. It is shown that the spectrum of waves excited in this system consists of an infinite set of homogeneous space waves and a single nonhomogeneous elliptically polarized delayed wave which propagates with variable phase velocity over the surface of a cone. Relationships are found between the parameters of a conical spiral and the frequency of the oscillator for which these waves exist. The investigation of the electrodynamic properties of hyperbolic spirals makes it possible to extend the results to arithmetical and logarithmic spirals which are widely employed in antenna technology since certain parameters bring the hyperbolic spiral close to an arithmetical or logarithmic spiral.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

016 UNCLASSIFIED

TITLE--GRADIENT ELASTIC TENSOR FOR A CUBIC CRYSTAL IN A MODEL OF SPHERICALLY SYMMETRIC RIGID IONS -U-

PROCESSING DATE--23OCT70

AUTHOR-(02)-GORBACHENKO, B.I., TOLPYGO, K.B.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1), 166-7

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TENSOR, NUCLEUS, CUBIC CRYSTAL, MODEL, ION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0561

STEP NO--UR/0185/70/015/001/0166/0167

CIRC ACCESSION NO--AP0121233

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

2/2 016

UNCLASSIFIED

CIRC ACCESSION NO--AP0121233 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPONENTS OF THE S TENSOR ON NUCLEUS A WERE EXAMD. FOR THE CASE INVOLVING THE EFFECT OF THE 6 CLOSEST NEIGHBORS OF A, WHICH ARE SPHERICALLY SYM. RIGID IONS OF TYPE B, EACH OF WHICH IS CHARACTERIZED BY A CHARGE D. Q(R). THE RELATION S SUB11 PLUS 2S SUB44 EQUALS 0 CAN ONLY BE FULFILLED FOR ALPHA P-ALPHA A EQUALS 0, WHERE A IS THE INTERIONIC DISTANCE IN A NONDEFORMED CRYSTAL, IF THE DEFORMATION DISTORTION OF THE ION SHELLS IS IGNORED. THIS RESULT IS APPLICABLE TO SINGLE ATOM CRYSTALS.

FACILITY: DONETS. GOSUNIV., DONETSK, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

TOLSTAYA, M. A., KHVOROSTUKHIN, L. A., LOGVINENKO, V. V., SOLODKINA, V. P., and MUKHINA, M. G., Moscow Aviation Technological Institute

UDC 620.195

"The Effect of Diamond Smoothing of the Surface of Kh18N9T Steel on its Corrosion and Electrochemical Behavior"

Moscow, Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp 16-21

Abstract: An experimental study was made of the corrosion and electrochemical behavior of relaxed specimens of 1Kh18N9T steel after processing their surfaces by the diamond smoothing method. To correlate properties of differently processed surfaces of 1Kh18N9T steel, smoothed and burnished specimens were tested together. The corrosion variations of the tested specimens in 3% NaCl and their anodic polarization curves in solutions of NaCl (0.1 and 3%) and H_2SO_4 are discussed by reference to diagrams. The surface of 1Kh18N9T steel subjected to diamond smoothing was found to possess, in comparison with burnished specimens, a considerably higher anodic polariability and resistance to general pitting corrosion. A mechanism of this phenomenon is suggested. The experimental data prove conclusively the increased stability of the passive condition of 1Kh18N9T steel in corrosive media after finishing treatment of its surface with a spherical diamond tip. Four figures, one table, eighteen bibliographic references.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC 620.195

TOLSTAYA, M. A., FLEGONTOVA, L. N., and SERBINOVSKAYA, YE. L., Moscow Aviation Technological Institute

"Electrochemical and Corrosion Behavior of SAP Metalloxide Composition in Electrolyte Solutions"

Moscow, Zashchita Metallov, Vol 7, No 5, 1971, pp 540-546

Abstract: A study was made of the electrochemical and corrosion behavior of unclad SAP-1 in electrolyte solutions by comparing its behavior with that of pure AVOO Aluminum and AD1 technical grade aluminum in similar solutions. The test were made in artificial sea water, Moscow tapwater, distilled water, and in one- and two-component solutions of KNO_3, Na_2SO_4, and NaCl. In synthetic sea water at pH 7.9-8.0, the corrosion losses of SAP-1 are sharply reduced compared with the losses of AVOO and AD1 not only at ordinary temperature, but also at the boiling point. However, in sea water with artificially increased alkalinity (pH 9.8-10) the corrosion resistance of SAP-1 is harply reduced. In neutral solutions, with a concurrent content of passivating and activating anions, the stability of the passive state of the SAP-1 material during anodic polarization is higher than in pure (AVOO) and technical grade (AD1) aluminum. (The comparison grades of aluminum were chosen because these

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

TOLSTAYA, M. A., et al., Zashchita Metallov, Vol 7, No 5, 1971, pp 540-546

materials are close to SAP-1 in chemical content, but differ sharply in structure.) It was suggested that the electrochemical and corrosion behavior of SAP-1 differs from the comparison metals because of its special distribution in the aluminum matrix of iron and silicon impurities, and also because of its content of γ - Al_2O_3 particles.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

UDC: 620.195

TOLSTAYA, M. A., FLEGONTOVA, L. N., and DMITRIYEV, Yu. V., Moscow Aviation Technological Institute

"Tendency of Clad SAP-1 (Sintered Aluminum Powder) to Crevice Corrosion"

Moscow, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 565-569

Abstract: Cladding of SAP-1 sheets with aluminum alloys markedly increases their weldability during contact spot and roll welding. In this experiment the working media were 3.5% natural sea salt solutions (pH 7.9-8.0, $Cl^- \approx 0.55$ n.) and salt solutions simulating sea water. The test materials were double spot-welded work pieces from SAP-1 sheets clad with commercial AD1 aluminum. Four months of sea water testing of double-spot welded test pieces revealed that the AD-1 aluminum cladding layer was affected by corrosion in the gaps between the welded sheet. The corrosion concentrated in the finest gaps. Some test pieces showed advanced crevice corrosion through the plastic zone without having affected the cast zone; the latter was confirmed by rupture testing of the spot welds.

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

TOLSTAYA, M. A., et al, Zashchita Metallov, Vol 6, No 5 Sep-Oct 70, pp 565-569

The propagation of crevice corrosion through the plastic zone might have been caused by the presence of micro-gaps due to low-quality welds of AD-1 layers. It is most probable that such micro-gaps are formed with the penetration of crevice corrosion through the plastic layer. It is concluded that commercial AD-1 aluminum, despite its good weldability and workability, is not well suited for cladding SAP-1. In this respect, pure AV000 aluminum and AMg-1 aluminum-magnesium alloys which act as anodic coatings for SAP-1 are more resistant to crevice corrosion and hold greater promise.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UNCLASSIFIED

PROCESSING DATE--11SEP70

FILLERS IN RUBBERS -U-

AUTHOR--BORODINA, V.N., TOLSTAYA, S.N., TAUBMAN, A.B., LEVINA, A.YU., NIKIFOROVA, A.P.

COUNTRY OF INFO--USSR

SOURCE--KOZH. POBUV. PROM. 1970, 12(2), 37-41

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FILLER, SILICA, KAOLIN, RUBBER, POLYSTYRENE RESIN/(U)SKS30R STYRENE RUBBER, (U)SKS30 STYRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0206

STEP NO--UR/0498/70/012/002/0037/0041

CIRC ACCESSION NO--AP0106862

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UNCLASSIFIED

...RACT/EXTRACT--(U) GP-0- ABSTRACT. A PHYSIOCOCHEM. METHOD WAS DEVELOPED FOR THE STUDY OF CROSSLINKING OF CONCD. SUSPENSIONS OF FILLERS (E.G. AEROSIL A-175(I), FINE SILICA FILLERS (II) (BS-150 AND BS-50), KAOLIN (III), AND CACO SUB3) IN DIL. SOLN. OF SKMS-30R (IV) AND SKS-30 (V) RUBBERS IN PHME. THE EXPTS. WERE CONDUCTED IN SMALL BEAKERS EQUIPPED WITH GROUND GLASS STOPPERS. A PORTION OF A FILLER WAS DRIED TO CONST. WT. AT 120-400EGREES, PLACED IN THE BEAKER AND COVERED WITH 10 ML IV OR V SOLN. IN PHME, THE MIXT. WAS CAREFULLY STIRRED, AND A GROOVED MICA PLATE (10 TIMES 10 MM) WAS PLACED IN THE PPT. AFTER THE CROSSLINKING HAS BEEN COMPLETED, THE MAX. STATIC SHEAR STRESS (P SUBM) WAS EVALUATED BY MEASUING THE TANGENTIAL DISPLACEMENT OF THE PLATE ON A WEILER REBINDER APP. A PLOT OF P SUBM EQUALS F(A) (WHERE A IS THE FILLER CONTENT-100 G V) SUGGESTED THAT THE ACTIVITY OF FILLERS IN ELASTOMERS DECREASED IN THE ORDER: I LARGER THAN II LARGER THAN III LARGER THAN CACO SUB3. OPTIMUM FILLER CONTENT CAN BE DETD. FROM AN APPROPRIATE GRAPH.

PROCESSING DATE--11SEP70

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

TOLSTEV, V. P.

"Parallel Algorithms for Multiplication of Matrices"

Sb. tr. In-t mat. Sib. Otd. AN SSSR [Collected Works of Mathematics Institute, Siberian Division, Academy of Sciences, USSR], 1972, No 6(23), pp 94-103 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V837 by the author).

Translation: This work studies four algorithms for multiplication of matrices, which can be effectively realized using multiprocessor computer systems. The algorithms are written in APL. Some comparative characteristics of the algorithms studied are presented.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UNCLASSIFIED

PROCESSING DATE--23OCT70

QUARTZ -U-

ISOTOPIC COMPOSITION OF HELIUM AND ARGON FROM MICROINCLUSIONS IN

AUTHOR-(02)-PRASOLOV, E.M., TOLSTIKHIN, I.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 653-5 (MINERAL)

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--HELIUM, ARGON, QUARTZ, NONMETALLIC INCLUSION, MINERAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1045

CIRC ACCESSION NO--AT0119912

STEP NO--UR/0020/70/191/003/0653/0655

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

ACCESSION NO--AT0119912 UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONTENT AND ISOTOPIC COMPN. OF HE AND AR WERE DETD. IN MICROINCLUSIONS EXTD. FROM 8 SAMPLES OF QUARTZ. THE DATA ARE COMPARED WITH LITERATURE ISOTOPIC COMPN. OF VARIOUS NATURAL GASES. THE VARIATIONS OF ISOTOPIC COMPN. OF HE AND PRIME40 AR-PRIME36 AR RATIO WERE SIMILAR IN MICROINCLUSIONS AND IN NATURAL GASES. THE PRIME36 AR CONTENT IN SOME SAMPLES WAS MUCH HIGHER THAN IN CONYROL EXPTS. THUS, PRIME36 AR WAS PRESENT IN ANCIENT GASES OF THE EARTH. THE HE-PRIME40 AR RATIO IN ALMOST ALL SAMPLES WAS MUCH HIGHER THAN FOR THE MOST NATURAL GASES. BUT A SMALL NO. OF DETNS. IS INSUFFICIENT TO CONSIDER THIS FACT AS A REGULAR PHENOMENON. IT WAS POSSIBLY CAUSED BY A STRONG AND DIFFERENT PERMEABILITY OF QUARTZ WITH RESPECT TO AR AND HE. THE VOLYN QUARTZ INCLUSIONS HAD HE WITH EXCEPTIONALLY HIGH VALUE OF PRIME3 HE-PRIME4 HE EQUALS 70 TIMES 10 PRIME NEGATIVE7. THIS COULD BE CAUSED BY THE FACT THAT (1) QUARTZ CAPTURED HE WITH INITIALLY LOW ISOTOPIC RATIO AND PRIME3 HE ISOTOPE WAS FORMED LATER BY NUCLEAR REACTION IN THE MINERAL, (2) THE SEPN. OF ISOTOPES OCCURRED DURING CAPTURING OF HE BY QUARTZ, AND (3) THE HE WITH HIGH ISOTOPIC RATIO WAS CAPTURED BY QUARTZ.

FACILITY: INST. GEOL. GEOKHRONOL. DOKEMBRIYA, LENINGRAD, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR Converters

ANISIMOV, A. S., TOLSTIKOV, A. S., Novosibirsk

UDC 621.3.083.8

"Effect of External Noise on the Parameters of Capacitive Primary Measuring Converters"

Novosibirsk, Avtometriya, No 3, 1971, pp 31-41

Abstract: When solving problems in measuring nonstationary physical processes by capacitive primary measuring converters (CPC) in the presence of nonstationary parametric noise in the case where the frequency spectra of the measured process and the noise and the pass band of the measuring circuit with the CPC coincide the authors discovered the need for analyzing the basic expressions relating the parameters of the CPC to the external effects most frequently appearing during the measuring process in the form of informative or disturbing factors. The results of their survey of published material on this subject is presented here. The discussion includes circuit diagrams of CPC, CPC with variable electrode spacing, CPC with variable area of the electrode overlap, and CPC with variable electric parameters of the dielectric: 1) the parameters of the CPC as a function of the volume of the dielectric, 2) the CPC parameters as a function of the dielectric temperature, 3) the dielectric density, 4) the dielectric moisture, and 5) the inertia of the CPC. For purposes of the

1/3

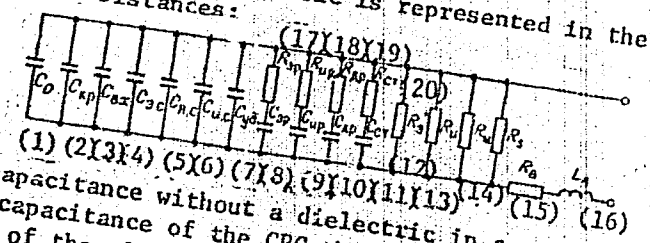
APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR

ANISIMOV, A. S., et al, Avtometriya, No 3, 1971, pp 31-41

discussion the CPC with a dielectric is represented in the form of a series of capacitances and resistances:



Key: 1. CPC capacitance without a dielectric in a vacuum
2. edge capacitance of the CPC the magnitude of which depends on the ratio of the electrode dimensions
3. stray capacitance of the input circuits of the measuring device
4,5,6,7. capacitances caused by polarizations of the electron, nuclear and ion displacement and the elastic-dipole polarization respectively
8,9,10,11. capacitances caused by the presence of electron-relaxation, ion-relaxation, dipole-relaxation and structural polarizations respectively
12,13,14. resistances to the electron, ion and molion currents through the dielectric respectively
15,16. resistance and inductance of the CPC outputs respectively
17,18,19,20. active resistances considering the energy losses for the electron-relaxation, ion-relaxation, dipole-relaxation and stru... polarizations respectively

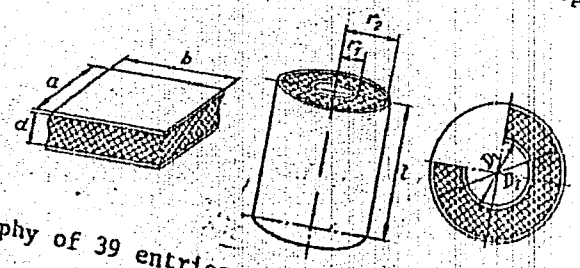
2/3

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

ANISIMOV, A. S., et al., Avtometriya, No 3, 1971, pp 31-41

The capacitances for the flat, cylindrical and spherical capacitors illustrated below are defined:



A bibliography of 39 entries is included as part of the survey.

3/3

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UNCLASSIFIED

PROCESSING DATE--20NOV70

AUTHOR-(05)-YERYEV, V.P., TOLSTIKOV, G.A., VASILYUK, S.M., ROMACHENKO, G.N., GORYAYEV, M.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 33-9

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--HORMONE, PROTON RESONANCE, PROTON SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0760

CIRC ACCESSION NO--AP0131355

STEP NO--UR/0360/70/020/002/0033/0039

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UNCLASSIFIED

CIRC ACCESSION NO--AP0131355 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIGNALS OF ME GROUPS 5 ALPHA AND 5 BETA SCLASOOANES WERE LCCATED IN THEIR PMR SPECTRA. THE RULE OF ADDITIVITY CF CHEM. SHIFTS OF ANGULAR ME GROUPS HCLDS IN THIS CLASS OF COMPDS. AS IN THE CASE OF ANDROSTANES.

FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UN0045485

Ref. Code: UR9012
JPRS 50052

Review of Soviet Antarctic Activities

(Summary: "The Ice Continent Reveals its Secrets," by Ye. Tolstikov, Chief, Main Administration of the Hydrometeorological Service; Moscow, Pravda, 27 January 1970, p. 6)

Five Soviet Antarctic stations are now in operation: Mirnyy, Vostok, Molodezhnaya, Novolazarevskaya and Bellinsgauzen. During the last 15 years there have been 15 Antarctic expeditions in which more than 2,000 men have participated. The mass of scientific data which they have collected has been processed at almost 20 scientific institutions in the country. Many important monographs have been written on the basis of these data, the Transactions of the Soviet Antarctic Expedition have been published, as well as many collections of articles. The second volume of the Atlas of Antarctica was recently published. This two-volume atlas is the World's first combined atlas and monograph which gives a thorough and detailed description of natural conditions in the southern polar region. On the basis of aerometeorological observations Soviet scientists have described the Antarctic climate and studied synoptic processes. Actinometric investigations have revealed an exceptionally great atmospheric transparency and

1
3

Reel/Frame
19780442

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

this results in very high receipts of solar energy. Much attention is being devoted to the theory of Antarctic glaciation. Many interesting results have been obtained in the study of cosmic rays, the ionosphere, auroras, earth currents and the earth's magnetic field. Seismic observations have revealed the occurrence of weak earthquakes on the Antarctic continent. Geological studies have been of great importance in revealing the geological structure and processes of development of ancient platform regions. In addition, the Antarctic continent has major concentrations of minerals, especially iron ores, rock crystal, muscovite, graphite and other minerals. Coal is present, as well as traces of copper and nickel; deposits of iron and copper pyrites are known. Samples of lead, zinc and molybdenum have been found. Uranium and thorium, gold and diamonds are presumably present. During the next few years it is unlikely that minerals will be exploited here, but as the decades pass this will doubtlessly take place (after all, Alaska and the Chukchee Peninsula were once regarded as "no man's land"). The relief of the continental shelf is very complex: it is intersected by deep trenches. Much new data has become available concerning the dynamics, thermal regime, physicochemical characteristics, ice conditions, and formation of bottom sediments in the Antarctic Ocean. Antarctic flora and fauna have been studied. Polar biologists have determined the species composition and geographic distribution of plants, marine algae, phyto- and zooplankton, birds, penguins and whales. Antarctica constitutes a distinct zoogeographic region. Particular attention is being given to krill. Specialists of the Scientific Research Institute of Fishing and

2/3

19780443

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

AN0045485

Oceanography have demonstrated the possibility of exploiting and using krill for food and fodder. Fodder meal produced from krill contains up to 55 percent protein and about 12 percent fat. A new stage of Antarctic research has now begun. Emphasis is on the planned and thorough study of phenomena and processes transpiring in Antarctica.

3/3

19780444

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UNCLASSIFIED

FEATURE ARTICLE ON NAVIGATION AND WEATHER --U--

PROCESSING DATE--13NOV70

AUTHOR--TOLSTIKOV, YE.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VODNYY TRANSPORT, 7 FEBRUARY 1970, P. 2

DATE PUBLISHED--07FEB70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, MECH., IND., CIVIL AND MARINE ENGR, SPACE TECHNOLOGY, NAVIGATION

TOPIC TAGS--SHIP NAVIGATION, METEOROLOGIC SHIP, METEOROLOGIC SATELLITE, DRIFT STATION, OCEANOGRAPHIC BUOY, AUTOMATIC METEOROLOGIC STATION, GLOBAL WEATHER FORECAST, METEOROLOGIC DATA, WEATHER FORECAST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1101

STEP NO--UR/9028/70/000/000/0002/0002

CIRC ACCESSION NO--AN0113883

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

ACCESSION NO--AN0113883 UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUCCESS AND SAFETY IN NAVIGATION IS DETERMINED TO A CONSIDERABLE DEGREE BY THE WEATHER AND THE STATE OF THE SEA. WITHOUT AN INFORMED ALLOWANCE FOR HYDROMETEOROLOGICAL CONDITIONS SEAMEN CANNOT MAKE VOYAGES AND OPERATE THEIR VESSELS NORMALLY. THAT IS WHY DURING RECENT YEARS EVERY MEASURE HAS BEEN TAKEN TO IMPROVE THE QUALITY OF FORECASTS AND HAVE TIMELY DATA ON THE ACTUAL WEATHER CONDITIONS FROM POORLY STUDIED REGIONS OF THE WORLD OCEAN. SUCH DATA ARE RECEIVED PRIMARILY FROM SCIENTIFIC RESEARCH VESSELS AND NAVAL AND FISHING SHIPS, MOSTLY FROM NAVIGATION LANES AND FISHING REGIONS. OTHER EXTENSIVE EXPANSES OF THE OCEAN ARE NOT COVERED BY OBSERVATIONS. NOW WE ARE BEING AIDED BY METEOROLOGICAL EARTH SATELLITES. THEY MAKE IT POSSIBLE TO OBTAIN INFORMATION FROM POORLY STUDIED REGIONS OF THE WORLD OCEAN. FROM TELEVISION PHOTOGRAPHS TAKEN IN THE VISIBLE PART OF THE SPECTRUM, PHOTOGRAPHS TAKEN IN THE INFRARED REGION OF THE SPECTRUM AND ACTINOMETRIC DATA IT IS POSSIBLE TO DETECT HURRICANES AND TYPHOONS, CYCLONES, FRONTS AND ZONES OF CLOUD COVER, AS WELL AS THE BOUNDARIES OF ICE FIELDS. DURING THE NEXT FEW YEARS MUCH MORE INFORMATION WILL BE OBTAINED FROM ARTIFICIAL EARTH SATELLITES. HOWEVER, NEW MEANS MUST BE EMPLOYED FOR COLLECTING SUCH INFORMATION. IN PARTICULAR, PLANS CALL FOR SETTING OUT BUOY STATIONS, BOTH WITH AND WITHOUT OBSERVERS, AND USING BUOY AND DRIFTING STATIONS. THE COLLECTION OF SUCH INFORMATION WILL BE BY SATELLITES, SHIPS AND SHORE STATIONS. AUTOMATIC STATIONS HAVE FOR MANY YEARS BEEN SET OUT IN THE ARCTIC OCEAN ON THE DRIFTING ICE. THEY HAVE PROVEN TO BE EFFECTIVE.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

UNCLASSIFIED PROCESSING DATE--13NOV70

3/6 035

CIRC ACCESSION NO--AN0113883

ABSTRACT/EXTRACT--IT SHOULD BE STATED THAT THE WORLD METEOROLOGICAL ORGANIZATION AND THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMITTEE ARE NOW TAKING MEASURES FOR IMPROVING THE GLOBAL OBSERVATION SYSTEM IN OCEAN REGIONS BY ADDING OTHER SYSTEMS TO SATELLITE OBSERVATIONS. AN INTERNATIONAL PROGRAM KNOWN AS THE UNIFIED GLOBAL SYSTEM OF OCEANIC STATIONS HAS BEEN FORMULATED. A NATIONAL COMMISSION ON THIS PROGRAM HAS BEEN ESTABLISHED IN OUR COUNTRY. GUIDANCE OF VESSELS ALONG RECOMMENDED COURSES HAS BECOME COMMONPLACE DURING RECENT YEARS. IN THIS WORK OCEANOLOGISTS AND WEATHERMEN, ON THE BASIS OF WEATHER AND WAVE FORECASTS FOR 3-5-7 DAYS IN ADVANCE, GIVE SHIP CAPTAINS RECOMMENDATIONS ON THE COURSES TO FOLLOW TO AVOID BAD WEATHER, HIGH WAVES AND COUNTERCURRENTS. HOW IS THIS ACTUALLY ACCOMPLISHED? THE SHIP CAPTAIN DIRECTS AN INQUIRY TO THE APPROPRIATE FORECASTING AGENCY NOT LATER THAN A DAY PRIOR TO APPROACH OF THE VESSEL TO THE SERVICED REGION. UPON RECEIVING SUCH A REQUEST, THE HYDROMETEOROLOGICAL CENTER OR WEATHER BUREAU FORMULATES AND SENDS TO THE SHIP ITS FIRST RECOMMENDATION WHICH CONTAINS A CONCISE REVIEW OF HYDROMETEOROLOGICAL CONDITIONS IN THE NAVIGATION REGION; COORDINATES OF THE RECOMMENDED TRACK FOR THREE OR FOUR DAYS IN ADVANCE; FORECAST OF WIND, WAVES, ICE CONDITIONS, ETC. ALONG THE VESSEL'S TRACK ON THE FIRST AND SECOND DAYS. AS THE SHIP CROSSES THE OCEAN THE FORECASTING AGENCY DAILY CONFIRMS, OR IF HYDROMETEOROLOGICAL CONDITIONS CHANGE, REFINES THE EARLIER RECOMMENDED COORDINATES OF THE TRACK AND ALSO TRANSMITS A FORECAST OF HYDROMETEOROLOGICAL CONDITIONS FOR THE NEXT TWO DAYS.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

4/6 035 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0113883

ABSTRACT/EXTRACT--IF THE HYDROMETEOROLOGICAL CONDITIONS ALONG THE VESSEL'S TRACK ARE SHARPLY DETERIORATING, THE HYDROMETEOROLOGICAL CENTER OR WEATHER BUREAU, WHICH IS GUIDING THE VESSEL, QUICKLY TRANSMITS TO THE VESSEL A RECOMMENDATION ON CHANGING THE TRACK AND APPROPRIATE INFORMATION. THE SHIP'S CAPTAIN CONFIRMS RECEIPT OF THE FIRST RECOMMENDATION AND DURING THE CROSSING REGULARLY COMMUNICATES TO THE FORECASTING AGENCY INFORMATION ON THE SHIP'S POSITION AND WEATHER IN THE NAVIGATION REGION. IF FOR ANY REASON THE SHIP DEVIATES FROM THE RECOMMENDED COURSE, THE CAPTAIN MUST REPORT THIS TO THE HYDROMETEOROLOGICAL CENTER OR WEATHER BUREAU. UPON COMPLETING THE VOYAGE THE CAPTAIN SENDS AN EVALUATION OF THE QUALITY OF THE RECOMMENDATIONS TO THE FORECASTING AGENCY. THE GUIDANCE OF VESSELS ALONG RECOMMENDED COURSES GIVES AN ENORMOUS SAVINGS IN BOTH MONEY AND IN SHIP DAYS. FOR EXAMPLE, DURING THE FIRST 11 MONTHS OF 1969 ALONE THE GUIDANCE OF 1,129 SHIPS BY THIS METHOD RESULTED IN THE SAVING OF 318 SHIP DAYS OR MORE THAN FIVE MILLION RUBLES. DURING RECENT YEARS THE HYDROMETEOROLOGICAL SERVICING OF SUCH OBJECTS AS CRANES, DOCKS, DAMAGED VESSELS, ETC. AND SMALL FISHING SHIPS IN OCEAN FISHING AREAS HAS BECOME COMMONPLACE. WEATHER TEAMS PARTICIPATE DIRECTLY IN THESE VOYAGES; RECEIVING, COMPILING, AND PROCESSING THE NECESSARY DATA ON VESSELS, THEY INFORM THE SHIP CAPTAINS CONCERNING THE IMPENDING WEATHER. NOW, IN ADDITION TO SERVICING WHALERS AND FISHING VESSELS IN FISHING REGIONS OF THE NORTH ATLANTIC AND NORTH PACIFIC OCEANS, WEATHER TEAMS ARE REGULARLY SERVICING THE FISHING FLEET IN ANTARCTICA, THE GULF OF GUINEA AND THE BERING SEA.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

5/6 035 UNCLASSIFIED

CIRC ACCESSION NO--AN0113863 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--IN 1969 THE WORKERS OF THE HYDROMETEOROLOGICAL SERVICE SERVICED 749 RUNS OF CRANES, DOCKS, DAMAGED VESSELS, ETC., SOME OF THEM BY SYNOPTIC TEAMS (FOR EXAMPLE, DURING RUNS OF SHIPS IN THE FAR EAST). WE FEEL THAT THIS TYPE OF SERVICING SHOULD BE EXPANDED IN EVERY POSSIBLE WAY. THE SERVICING OF SMALL SHIPS OPERATING IN THE COASTAL ZONE AND ORGANIZED FISHING FLEETS REQUIRES RADICAL IMPROVEMENT. IT IS NECESSARY THAT FORECASTS AND STORM WARNINGS BE SUPPLIED TO EVERY SMALL VESSEL AFLOAT. FOR EXAMPLE, CREATION OF THE FOLLOWING WARNING SYSTEM CAN BE VISUALIZED. THE MINISTRIES OF THE NAVY, FISHING INDUSTRY AND HYDROMETEOROLOGICAL SERVICE WILL SUPPLY RADIO STATIONS WHICH AROUND THE CLOCK WILL TRANSMIT DATA ON THE ACTUAL WEATHER, FORECAST THE WEATHER AND STATE OF THE SEA AND TRANSMIT STORM WARNINGS FOR THE REGIONS SERVICED BY THESE RADIO STATIONS. ALL SMALL SHIPS (AND ON SHORE, SHIP OWNERS) HAVE VERY SIMPLE RECEIVERS WHICH CAN RECEIVE WEATHER INFORMATION. STILL BETTER, THESE RECEIVERS COULD ALWAYS BE TURNED ON AND AT ANY TIME OF DAY COULD RECEIVE A CONVENTIONAL SIGNAL INDICATING THE ONSET OF TRANSMISSION OF A STORM WARNING. NOW THE HYDROMETEOROLOGICAL SERVICE IS DISSEMINATING ITS INFORMATION WIDELY. THE TRANSMISSIONS OF TNS OF RADIO STATIONS ARE PROVIDING SUMMARIES AND GIVING FORECASTS OF HYDROMETEOROLOGICAL CONDITIONS, TRANSMITTING SYNOPTIC AND HYDROSYNOPTIC MAPS BY PHOTOTELEGRAPH, REPORTING ON ICE CONDITIONS, WAVES, ETC. FOR SEAMEN AND FISHERMEN. BY RESOLUTION OF THE WORLD METEOROLOGICAL ORGANIZATION, THE ENTIRE WORLD OCEAN IS BROKEN DOWN INTO INDIVIDUAL REGIONS FOR SERVICING WITH HYDROMETEOROLOGICAL INFORMATION.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

6/6 035 UNCLASSIFIED

CIRC ACCESSION NO--AN0113883 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--THESE REGIONS ARE SERVICED BY DIFFERENT COUNTRIES. ACCORDINGLY, REGARDLESS OF THE REGION OF THE WORLD OCEAN WHERE OUR VESSELS MAY FIND THEMSELVES, THEY ALWAYS WILL BE ABLE TO RECEIVE THE NECESSARY HYDROMETEOROLOGICAL INFORMATION, PROVIDED, OF COURSE, THEY HEAR RADIO REPORTS FROM THE APPROPRIATE RADIOMETEOROLOGICAL CENTER.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

USSR UDC: 621.372.2+681.3:51

BOVA, N. T. and TOLSTIKOV, Yu. V.

"Application of the Multiple Reflection Method to Computing Microwave Range Nodes with the Electronic Computer"

Kiev, Izvestiya VUZ--Radioelektronika, Vol 13, No 11, 1970, pp 1297-1304

Abstract: This paper generalizes the results of an earlier paper (Bova, N. T., et al, Raschet odnorodnoy linii s proizvol'nym chislom sosredotochennykh neodnorodnostey -- Computation of Uniform Lines with an Arbitrary Number of Lumped Nonuniformities -- Izv. VUZ USSR--Radiotekhnika, 1962, 5, No 3, p 376) in which the nodecounting was considered from the point of view of a wave passing along a line with the multiple reflections between nonuniformities taken into account. The formulas obtained in the present paper are written in a form convenient for programming a computer. The authors consider the steady state in a line containing n nonuniformities, and make up an auxilliary matrix for further processing the results. To illustrate their methods, they discuss the practical problem of computing a uniform line containing n identical elements equidistant from each other. They claim for their method the advantage of being useful for transient as well as steadystate processes in microwave devices.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4

TOLSTOBROV, V. G.

UDC 551.509.313

DESCRIPTION OF PLANETARY WAVES BY THE DIFFERENCE METHODS

[Article by Candidate of Physical and Mathematical Sciences M. E. Gelin, V. G. Tolstobrov, Institute of Physics of the Atmosphere; Moscow, Meteorologiya i Gidrologiya, Russian, No 3, 1972, submitted 21 May 1971, pp 24-32]

A study was made of the numerical solution of the linear vorticity transfer equation in a hemisphere by difference methods. The errors connected with the transfer operator and the inversion of the Laplace operator are analyzed separately as a function of the scale of the disturbance. For the case of the central difference scheme, an exact solution of the difference transport equation of the current function ψ was constructed for a grid with 21 points. Various methods of integration with respect to time are compared.

In recent years, the methods of integrating the nonlinear equations of hydrodynamics for purposes of long-range forecasting of the pressure fields and the fields of other meteorological elements encompassing the entire Northern Hemisphere or a significant part of it have received significant development [1, 3, 5, 6]. The experiments performed with real initial conditions demonstrated the possibility of stable integration over prolonged periods. This arose to a significant extent from application of the Arakawa scheme [7] for difference description of the nonlinear advection of the vorticity. In the case of exact differentiation with respect to time, the indicated scheme insures retaining for the entire integration period certain quadratic invariants of the investigated fields.

In the case of the barotropic vorticity equation, these invariants will be the kinetic energy and the square of the absolute vorticity averaged over the region. It is clear that retaining the quadratic invariants is not consistent with exibition of infinite amplitudes in the wave components and, consequently, protects against nonlinear computation instability. However, replacement of exact differentiation with respect to time by the finite-difference analog can disturb the invariance of the above-mentioned quadratic characteristics and lead to computation instability. In addition, the application of finite-differences with respect to space and time even in the case of a stable calculation unavoidably leads to errors in determining the amplitude and phase of different waves.

JPRS 55899
5 MAY 72

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320005-4"