ACCESSION NR: AP4038606

basis of the square-law loss function. It is expected that the same method can be extended over the cases of signals depending on several parameters, signals of several known classes, arbitrarily grouped signals, etc. Orig. art. has: 22 formulas.

ASSOCIATION: none

SUBMITTED: 30Jan63 DATE ACQ: 05Jun64 ENCL: 00

SUB CODE: DC NO REF SOV: 003 OTHER: 001

Card 2/2

S/035/62/000/002/012/052
A001/A101

3,1400

AUTHORS: Vatolin, V. V., Bogdanov, A. V.

TITLE: On dynamics of stellar systems

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 2, 1962, 41, abstract 2A354 ("Tr. Vses. zaoch n. energ. in-ta", 1961, no. 17, 37-44)

TEXT: The authors study small deviations of a stellar system from the steady state. For this purpose, the authors assume some law of distribution of additional density (without explaining its selection); this law contains unknown parameters which are selected in such a way that Boltzman's equation should be satisfied as precise as possible. (The paper contains errors: some terms are omitted in the linearization of Boltzman's equations; parameters k, m and l are assumed now constant, now dependent on coordinates; the real part in formula 7 is separated in a wrong way; addition of forces of gravitation and light pressure, introduced by T. A. Agekyan for certain conditions, p. 37, cannot be applied to the entire Galaxy. Reviewer). There are 6 references.

V. Antonov

[Abstracter's note: Complete translation]

Card 1/1

SHAKHPARONOV, Mikhail Ivanovich; VATOLLO, V.V., redaktor; MURASHOVA, N.Ya., tekhnicheskiy redaktor

[Introduction to the molecular theory of solutions] Vvedenie v molekuliarnuiu teoriiu rastvorov. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 507 p. (MLRA 9:11)
(Solution (Chemistry))

ACC NR: AR7008640 SOURCE CODE: UR/0372/66/000/012/V019/V020

AUTHOR: Vatollo, V. V.; Peskov, Ye. P.; Khutorovskiy, Z. N.

TITLE: Some recurrent schemes for estimation of parameters in problems of optimum linear filtration

SOURCE: Ref. zh. Kibernetika, Abs. 12V110

REF SOURCE: Sb. 2-ya Vses. konferentsiya po teorii kodir. i yeye prilozh. Sekts. 5. Ch. 2. M., b. g. 11-19

TOPIC TAGS: Markov process, ~~optimal automatic control, estimation~~ LINEAR SYSTEM, VECTOR FUNCTION, MATRIX FUNCTION, PARAMETRIC EQUATION

ABSTRACT: The authors consider the regression scheme

$$x_n = F_n a + \xi_n,$$

where F_n is a known matrix of order $n \times s$ and rank s, a is the vector (with s components) of the unknown parameters, ξ_n is the vector (with n components) of random quantities with $\partial u_\nu = 0$ and correlation matrix $M\xi_n \cdot \xi_n^* = K_n$ of rank n. The problem of representation of an estimate

$$A_n = \left(F_n^* K_n^{-1} F_n\right)^{-1} F_n^* K_n^{-1} x_n$$

UDC: 519.281

Card 1/2

ACC NR: AR7008640

of the vector a in the form

$$A_n = p_{1n}T_{1n}(x_n) + \ldots + p_{rn}T_{rn}(x_n) \quad (1)$$

is studied, where $p_{1n}, \ldots, p_{rn}$ are independent of observations x_n. Three types of conditions are given which may be imposed on the random vector ξ_n to give a simple representation of form (1). For instance, in the case where the component $y_1, y_2, \ldots, y_n, y_{n+1}$ of the vector x_{n+1} form a Markov chain, the estimate A_{n+1} may be expressed in terms of the functions A_n, y_n, y_{n+1} of observations x_{n+1}. A. Dorogovtsev. [Translation of abstract]

SUB CODE: 12

Card 2/2

L 30092-66 EWT(1) IJP(c) GG/AN

ACC NR: AP6012519 SOURCE CODE: UR/0181/66/003/004/1309/1311

AUTHORS: Buishvili, L. L.; Vatova, L. E.; Giorgadze, N. P.

ORG: Institute of Cybernetics, AN GruzSSR (Institute kibernetiki AN GruzSSR); Institute of Physics, AN GruzSSR, Tbilisi (Institut fiziki AN GruzSSR)

TITLE: Forbidden magnetic resonance in ferrodielectrics

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1309-1311

TOPIC TAGS: electron spin, electron paramagnetic resonance, nuclear spin, magnetic susceptibility, Green function, magnetodielectric

ABSTRACT: Forbidden resonance, wherein the radio frequency field (perpendicular to a constant magnetic field) acts on the spin of the electron shell of a paramagnetic atom, but tensor coupling between the spins of the electron shell and the nucleus causes simultaneous reversals of both the electron and the nuclear spins (flip-flop and flip-flip transitions), is considered in the present article for the case of ferrodielectrics in which the electron spins, unlike in paramagnets, constitute a collective system as a result of the strong exchange interaction between them. By expressing the magnetic susceptibility in terms of double-time

Card 1/2

L 30092-66

ACC NR: AP6012519

Green's functions, the authors show that the first term in the susceptibility describes ordinary electronic resonance, while the second two contain forbidden resonance at frequencies $\omega = \omega_e \pm \omega_n$ (e and n stand for the electron and nuclear spins). The absorption intensity in forbidden resonance is found to be $(\omega_n/|B|)^2$ times smaller than the absorption intensity in electron resonance. Unlike in paramagnets, the intensity of absorption in the forbidden resonance is independent of the external field. In order for fobidden resonance to be observable, it is necessary that the line width be smaller than ω_n. This may be the situation in yttrium-iron-garnet. If the line width is larger than ω_n, forbidden resonance may be observable by dynamic polarization of the nuclei. The authors thank G. A. Kharadze for valuable hints and a discussion of the work. Orig. art. has: 3 formulas.

SUB CODE: 20/ SUBM DATE: 05Aug65/ ORIG REF: 003/ OTH REF: 003

Card 2/2

L 3339-66 EWT(1)/EPA(s)-2/EPF(c) IJP(c) WW/GG

ACCESSION NR: AP5017310 UR/0181/65/007/007/2133/2135

AUTHOR: Vatova, L. B. 41,55

TITLE: Calculation of the fourth moment for nuclear magnetic resonance in ferrodielectrics 21,44,55

SOURCE: Fizika tverdogo tela, v. 7, no. 7, 1965, 2133-2135

TOPIC TAGS: nuclear magnetic resonance, line broadening, line shift, nuclear magnetic moment

ABSTRACT: The author calculates the fourth moment of the line corresponding to the indirect Suhl-Nakamura interaction (J. Phys. Rad. v. 20, 333, 1959), and the ratio of the fourth moment to the second moment. The calculation of the moments is necessitated by the fact that a direct determination of the shape of the nuclear magnetic resonance line entails great mathematical difficulties, but conclusions with respect to the line shape can be drawn from the first few moments and the relations between them. A value of 6 is obtained for

Card 1/2

L 3339-66

ACCESSION NR: AP5017310

12

the ratio of the fourth moment to the second, as compared with a value of 3 for a Gaussian line. 'The author is grateful to L. L. Buishvili and N. P. Giorgadze for directing the work and G. R. Khutsishvili for a discussion of the results.' Orig. art. has: 11 formulas

ASSOCIATION: Tbilisskiy gosudarstvennyy universitet (Tbilisi State University)

SUBMITTED: 09Feb65 ENCL: 00 SUB CODE: NP, EM

NR REF SOV: 000 OTHER: 006

Card 2/2 DP

ACC NR: AP6033573 SOURCE CODE: UR/0181/66/008/010/3075/3078

AUTHOR: Buishvili, L. L.; Vatova, L. B.

ORG: Institute of Cybernetics, AN GruzSSR, Tbilisi (Institut kibernetiki AN GruzSSR)

TITLE: Contribution to the theory of broadening of forbidden resonance

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 3075-3078

TOPIC TAGS: line broadening, forbidden transition, electron spin resonance, absorption line, nuclear spin, electron polarization

ABSTRACT: The authors investigate quantitatively the change in forbidden-resonance line shape brought about by exchange interaction between electron spins. The calculations involve a determination of the absorption energy from the imaginary part of the complex susceptibility, and account is taken of the fact that the Hamiltonian assumes different values for isotropic and tensor interactions between the electrons and the nuclear spins. The second and fourth moments, are calculated. The calculations show that when the interaction is isotropic, there is nc dynamic polarization of the nuclei, but the Overhauser effect can result when the exchange interaction is saturated. When the interaction has a tensor character, as is the case at low temperatures, there is dynamic polarization, but no Overhauser effect. This agrees with recent experimental data. Orig. art. has: 9 formulas.

SUB CODE: 20 / SUBM DATE: 22Jan66 / ORIG REF: 003 / OTH REF: 004

Card 1/1

VATHALOV, Iv.; KHADZHIIANAKIEV, Asp.

Soils at the Experiment Station for Vegetable Growing near Nogovan, Sofia District. Izv Inst "Nikola Pushkarov" 7: 187-203 '63.

VATRALOV, Iv.; KHUBENOV, G.

Soils of the Experimental Hydromeliorative Station of Stara Zagora. Izv Inst "Nikola Pushkarov" 1:97-106 '61.

24857 S/106/61/000/005/005/006
A055/A133

9,7910
6,5200

AUTHORS: Vatsenko, V. A. and Gitlits, M. V.

TITLE: Determining the irregularities in the efficiency of ferromagnetic carriers for phototelegram reproduction.

PERIODICAL: Elektrosvyaz', no. 5, 1961, 58

TEXT: The serial production of magnetically rerecorded phototelegram reproducers using the standard 6.25 mm tape is being prepared this year in the USSR. As amplitude modulation is used, the elimination of irregularities in the efficiency of the tapes becomes an important problem. Distortions are caused above all by parasitic amplitude modulation connected with the presence of defects in the ferromagnetic coating of the tapes. In the present article, the authors examine these defects and describe a device allowing to count the exact number of defects in the tape. For the examination of the defects, the authors divide the defects into two groups according to the nature of the distortion they cause in the recorded signal. To the first group belong the defects connected with the non-uniformity of the magnetic characteristics of elementary sections of the magnetic carriers. To the second group belong the defects the consequence of which is an interrupted

Card 1/7

Determining the irregularities ...

contact between the tape and the recording head. The appearance of a gap between the tape and the head brings about a considerable fluctuation of the signal level, especially when short wavelengths are recorded. Therefore, when defects of the second group are present, the depth of the dip in the reproduced signal depends on the recorded wavelength. The geometrical dimensions of the defects of the first group in the direction of scanning ($\Delta l_{longit.}$) are given by the relation:

$$\Delta l_{longi.} = vt \qquad (1)$$

v being the velocity of the tape and t the duration of the decrease of the reproduced signal level. If the depth of the dip in the reproduced signal is determined by the geometrical dimension in the direction perpendicular to scanning, this dimension is given by:

$$\Delta C = C\,(1 - 10^{-b/20}) \qquad (2)$$

where C is the width of the path of the record, and b is the depth of the dip in reproduction. The determination of the geometrical dimensions of the defects of the second group is much more difficult. The real geometrical dimension of the defect (Δl) is, however, much smaller than the section of the band ($\Delta l_{equiv.}$) along

Card 2/7

Determining the irregularities ...

which the contact between the tape and the recording head is interrupted. Since the duration of the dip in the reproduction is determined by $\Delta l_{equiv.}$, it is appropriate to evaluate defects, not by Δl, but by $\Delta l_{equiv.}$ (which is much easier) and to resort to the following relations, analogous to (1) and (2):

$$\Delta l_{equiv.} = vt \qquad (3)$$
$$\Delta C_{equiv.} = C\,(1 - 10^{-b/20})$$

Assuming that the tape is sufficiently elastic and that its contact with the recording head is perfect in the absence of defects, it is possible to show that, for toroidal heads, the length of the tape section corresponding to the broken contact is:

$$\Delta l_{equiv.} \quad 2h \arccos \frac{R}{R+h} \qquad (4)$$

where R is the radius of curvature of the head, and h is the height of the defect. In spite of the steps taken with a view to improving the quality of magnetic tapes, the tapes produced in the USSR at present still possess numerous defects. An experimental check of the quality of the tapes is therefore necessary. The magnetic recording laboratory of the Moskovskiy elektrotekhnicheskiy institut svyazi (Moscow Electrotechnical Institute of Communications) has developed a special electronic device allowing to count the exact number of defects in the tape and to estimate their equivalent dimensions. This device, called "counter of magnetic-

Card 3/7

Determining the irregularities ...

carrier defects", counts the defects existing in the magnetic tape and carries out simulataneously their selection either according to the duration of the reproduction dips being caused, or according to $\Delta l_{equiv.}$ in five different channels (taking into account the band velocity). The selection of the defects according to $\Delta C_{equiv.}$ (level fluctuations) is carried out by varying the limiting level of an amplitude selector which is one of the component parts of the pulse-formation block described later. The counting device is designed for checking the tapes used for phototelegram reproduction. The minimum defect-magnitude ($\Delta l_{equiv.\ min.}$) which can be detected by the device, equals the minimum wavelength of the record. Used with a M93 -15 (MEZ-15) type magnetophone, the device can detect $\Delta l_{equiv.\ min.} \approx$ 70 microns at a tape velocity of 762 mm/sec. As for the selection of defects according to $\Delta C_{equiv.}$: $\Delta C_{min.}$ = 100 microns, the thickness of the recording head package being C = 1 mm. The channel selection of defects is so arranged that into each channel penetrate the defects causing the distortion of a determined facsimile-image section. Data on the dimensions of the defects getting into each channel are given in table I.

Card 4/7

Determining the irregularities ...

Table I.

No. of channel	Duration of dip in reproduced signal (millisec)	Number of distorted picture-elements	$\Delta l_{equiv.}$ (mm) at v = 762 mm/sec
I	25 - 50	50 - 100	19 - 38
II	10 - 25	20 - 50	7.6 - 19
III	5 - 10	10 - 20	3.8 - 7.6
IV	2 - 5	4 - 10	1.4 - 3.8
V	0.1 - 2	0.2 - 4	0.07 - 1.4

In the presence of defects producing distortion of more than a hundred picture-elements, an indicator operates in conjunction with a counter of slow dips. The counting device, as a whole, operates as follows: The signal from the reproduction amplifier is applied to the input of the device. If the reduced signal-level is below the limiting threshold determined by the formation block, this block will form a pulse the duration of which will be equal to the duration of the dip. The leading edge of this pulse triggers the kipp-relays which determine the duration of the reproduction dips that get into the corresponding channel. The pulses from

Card 5/7

Determining the irregularities ...

the kipp-relays are delayed (by a delay-unit) for 20 microseconds, i.e. for the time necessary for the operation of the "mismatch circuits". These pulses, together with the pulse formed by the formation block, reach then the mismatch circuits of the corresponding channels. In the channels where the duration of the kipp-relay pulse is greater than the duration of the dip, pulses the duration of which is equal to the delay time will appear at the output of the mismatch circuit. The duration of the dip determines thus the presence or the absence of the signal at the output of the mismatch circuit of individual channels. These signals are applied to a decoder which decodes the received combination and triggers the terminal kipp-relay of the channel in the working range of which is situated the duration of the dip. The load of this kipp-relay is a CB-1 M/100 ("SB-1M/100") type counter. Two operating conditions of the counting device are possible: the "counting" condition and the "stop" condition. With the "counting" -condition, selection and counting of the defects in the tape take place. With the "stop" condition, the tape-driving mechanism is stopped at the moment of the appearance of the defect, and the existence of this defect is thus revealed. Experiments have shown that the most frequent defects are those with small equivalent dimensions (small Δl_{equiv}). It was also found that the majority of defects cause a decrease not exceeding 3 db

Card 6/7

24857 S/106/61/000/005/005/006
A055/A133

Determining the irregularities ...

in the level of the reproduced signal. There are 8 figures and 1 table.

SUBMITTED: October 29, 1960.

Card 7/7

83. **Investigation of the Effect of Atropine and Thiospasmine on the Nervous System**

"Effect of Atropine and Thiospasmine on the Higher Nervous Functions of Rats," by M. Vanechek and Z. Vatova with the Technical Cooperation of Z. Kvetoneva, Pharmaceutical and Biochemical Research Institute, Prague, Physiologia Bohemoslovenica, Vol 5, No 4, 1956, pp 460-467

Report the results of experiments which were conducted to determine the dosages of atropine and thiospasmine which affect the central nervous system, and the manner in which these drugs act. Thiospasmine is the sulfonium analogue of Trasentine H, and was developed by Protiva and others in 1953. Tests conducted by Votava and Shramkova in 1954 indicated that thiospasmine has an inhibiting effect on intestinal motility. Chemically thiospasmine is the iodide of 2-phenylcyclohexylacetoxyethyl dimethylsulfonium.

The experiments were conducted on white rats. The method of food and defense conditioned reflexes was used in the experiments. The results of the experiments were as follows: atropine administered subcutaneously in doses of 5 milligrams per kilogram of body weight and in doses of 50 milligrams per kilogram of body weight administered orally intensified the inhibition process in animals with food conditioned reflexes; in dozes of 25 milligrams per kilogram body weight administered subcutaneously and 300 milligrams per kilogram body weight administered by mouth it intensified the inhibition process in animals with defense conditioned reflexes; atropine in small doses did not produce any excitation symptoms; thiospasmine acted on the central nervous system only when administered in doses ten times those of atropine; like atropine it produced side results. (U)

Sum 1424

T

CZECHOSLOVAKIA / Human and Animal Physiology. Heart.

Abs Jour : Ref Zhur - Biol., No 15, 1958, No. 70131

Author : Vatovec, S.; Timot, D.
Inst : Hrvat Natural Science Society
Title : The Causes of the Influence of the Serum of Vertebrates on Cardiac Function in Daphnia pulex

Orig Pub : Glasnik biol. sek. Hrvatsko prirodosl. drustvo, 1953 (1955), Ser. 2B, Vol 7, 367-368

Abstract : It is known that the serum (S) of vertebrates influences the heart rate (HR) in Daphnia; upon dilution of S with water, this effect is weakened. In the authors' experiments, isotonic solutions of glucose and sucrose and S dialyzed against water showed no influence on the HR. S ash added to water, and also Ringer's solution, had the same influence on the HR as did S. A solution of NaCl increased the HR and led to cardiac arrest in diastole.

Card 1/2

CZECHOSLOVAKIA / Human and Animal Physiology. Heart. T

Abs Jour : Rof Zhur - Biol., No 15, 1958, No. 70131

A KCl solution stopped the heart in systole. $CaCl_2$ solution slowed contractions and stopped the heart in diastole.
-- V. M. Morozhinskiy

Card 2/2

YUGOSLAVIA/Human and Animal Physiology - Reproduction. V-8

Abs Jour : Ref Zhur - Biol., No 2, 1958, 8948

Author : S. Vatovec and I. Valpotic
Inst : -
Title : The Galli-Mainini Reaction in Pregnant Rabbits.

Orig Pub : Vetrin. arh., 1955, 25, No 5-6, 151-154

Abstract : The Galli-Mainini reaction was employed on frogs as an assay of the gonadotropic hormone in pregnant rabbits. The data in the literature, obtained by other biological methods, were corroborated; an increased concentration of gonadotropin in the blood urine, amniotic fluid and placentae of the rabbits was not detected.

Card 1/1

VATOVEC, S.

"Contribution to the knowledge of the vegetative reflexes caused by peripherical stimulations
Inst. for Physiology, Vet. Fac. Univ. of Zagreb.

Vet. 23 : 25-35, 1953

VATRALOV, Iv.; KHADZHIIANAKIEV, A.; PETROV, P.

Soils on the territory of the Fruit-Growing Research Institute near Kyustendil. Izv Inst "Nikola Pushkarov" no.5:43-65 '62.

Vatrasova, Z.

CZECHOSLOVAKIA/Safety Engineering. Sanitary Engineering. Sanitation. L

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10704

Author : Macharacek, V. and Vatrasova, Z.
Inst : Not given
Title : On the Causes of the Appearance of Dermatosis in the Production of Bakelite Products

Orig Pub: Ceskosl. dermatol., 1956, Vol 31, No 3, 133-140 (in Czech with summaries in English and Russian)

Abstract: A health study of the molding of bakelite articles has shown that the causes for the appearance of dermatosis in the workers are nonobservance of safety regulations (working without gloves, or without shirts) and bad ventilation (increased formaldehyde content in the atmosphere in the work areas). The examination of skin specimens has shown that urotopine [TN: hexamethylenetetramine, "Hexa"] has the greatest sensitizing effect on the skin, followed by formaldehyde and phenol.

Card 1/2

CZECHOSLOVAKIA/Safety Engineering. Sanitary Engineering. Sanitation. L

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10704

Abstract: The formic acid which enters into the composition of the molding compound does not appear to cause dermatosis.

Card 2/2

MACHARACEK, V., MUDr.; VATRASOVA, Z., MUDr.

Dermatoses in bakelite workers. Cesk. derm. 31 no.3:133-140 June 56.

1. Z kozniho oddeleni krajske nemocnice v Gottwaldove (prednosta MUDr. V. Macharacek).

(RESINS, injurious effects,
bakelite causing skin dis. (Cz))
(DERMATITIS, CONTACT, etiology and pathogenesis,
bakelite (Cz))

KAZACHINA, K.N.; VATRIN, P.M., kandidat meditsinskikh nauk, direktor.

Identification of pathogenic microbes of the intestinal group in natural waters with the aid of the hapten reaction; author's abstract. Zhur.mikrobiol.epid.i immun. no.4:50 Ap '53. (MLRA 6:6)

1. Moskovskiy oblastnyy nauchno-issledovatel'skiy sanitarno-gigiyenicheskiy institut. (Bacteria, Pathogenic) (Antigens and antibodies)

VATRIN, P.M., red.; GOTOVTSEV, P.I., red.; LYUDKOVSKAYA, N.I., tekhn. red.

[Problems of sanitation and hygiene in water supply and in the planning of state and collective farms] Sanitarno-gigienicheskie voprosy planirovki i vodosnabzheniia sovkhozov i kolkhozov. Moskva, Gos. izd-vo med. lit-ry, 1958. 96 p. (MIRA 11:9)
(Water supply, Rural)
(Public health, Rural)

PERELATOV, V.D.; URAZAYEV, N.M., red.; AKULOV, A.N., red.; VATRIN, P.M., red.; DYACHKOVA, N.G., red.; KASPAROV, A.A., red.; LITVINOV, N.N., red.

[Work experience of the Rostov Public Health Station in rural areas under the conditions of enlarged districts] Opyt raboty Rostovskoi sanepidstantsii na sele v usloviiakh ukrupnennykh raionov. Moskva, Meditsina, 1964. 9 p. (MIRA 18:7)

L 23832-65 EWT(m)/EWA(d)/EPR/T/EWP(t)/EWP(b) Pc-4 IJP(c) JD/JG

ACCESSION NR: AT4045957 S/2563/64/000/234/0052/0056

AUTHOR: Vatruba, N. G.

TITLE: The effect of Mischmetal on the aging of Mg-Al-Zn alloys

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 234, 1964. Metallovedeniye (Metallography), 52-56

TOPIC TAGS: magnesium, aluminum, zinc, aging, Mischmetal

ABSTRACT: Previous investigations showed that 1% and 3% Mischmetal enhance the difference in the concentration of the solid solution of Al and Zn in Mg at high as well as low temperatures. These findings initiated a study of the aging process of Mg-Al-Zn alloys with these amounts of Mischmetal. Specimens were annealed for 48 hours at 410 and 325C respectively, quenched in cold water, held for 24 hours and subjected to hardening and aging for 6 to 240 hours at 125, 150 and 175C. The optimal temperature for most specimens was 175C and maximum Brinell hardness was observed during the initial 48 hours of aging and after add-

Card 1/2

L 23832-65
ACCESSION NR: AT4045957

ing 3% Mischmetal. However, this hardness was lower than in ternary alloys without Mischmetal where it attains 85 HB increasing at a rate of 32 to 39% under the effect of aging as compared to an average 10% in specimens with Mischmetal. Additions of Mischmetal inhibit the aging process appreciably in Al-rich alloys. As the amounts of Zn are increased, the aging is enhanced while no aging occurs in alloys witn a low Zn content or without Zn. Apparently the solubility of Zn and the amount of the Zn-rich phases have a direct effect on the aging of Mg-Al-Zn alloys with Mischmetal. Phases, based on a chemical compound composed of Al and Mg and rare metals do not participate in the aging process. Orig. art. has: 1 figure and 1 table

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnic Institute)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NR REF SOV: 004 OTHER: 000

Card 2/2

L 23831-65 EWT(m)/EPR/EWP(t)/EWP(b) Ps-4 IJP(c) JD/JG S/2563/64/000/234/0044/0051

ACCESSION NR: AT4045956

AUTHOR: Vatruba, N. G.

TITLE: The effect of Mischmetal on the structure of Mg alloys with Al and Zn

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 234, 1964. Metallovedeniye (Metallography), 44-51

TOPIC TAGS: Mischmetal, magnesium, aluminum, zinc, mutual solubility, solid solution, phase diagram

ABSTRACT: The effect of 1 and 3% Mischmetal respectively on the structure of the Mg corner in an Mg-Al-Zn phase diagram was investigated. Specimens consisted of 99.85% Mg, 99.99% Al and electrolytic zinc. The Mischmetal was composed of 96 to 97% rare metals including 60% Ce, 1.4-1.7% Fe and 0.13-0.17% Si. Thermal, metallographic and dilatometrical tests showed that the addition of Mischmetal widen the crystallization range of alloys with a low Al and Zn content while this range is somewhat narrowed when the content of alloying elements is

Card 1/2

L 23834-65
ACCESSION NR: AT4045956

higher. The use of Mischmetal was found to have a favorable effect on the surface quality of ingots cast in metal molds. Microporosity was not identified, the structure was fine-grained and neither double skins nor inclusions were observed. The solubility of Mischmetal in Mg was only 0.5 to 1%; as the Al and Zn contents was increased, the solubility of Mischmetal was enhanced. The temperature of the beginning of crystallization was not affected by Mischmetal additions. At 200C the mutual solubility of Al and Zn fell off whenever either Al or Zn was preponderant. Specimens with a high Zn content tended to display a higher maximum solubility of the Al and Zn components while Mischmetal had no effect on the maximum solubility of Al-rich alloys. It follows that the additions of Mischmetal increase the difference in the concentration of a solid solution at high and low temperatures. Orig. art. has: 5 figures

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnic Institute)

SUBMITTED:00 ENCL: 00 SUB CODE: MM

NR REF SOV: 003 OTHER: 000

Card 2/2

VATRUKHIN, A., lineynyy inzh.

Modernizing the electric system of steering gear on ships. Rech. transp. 24 no.5:30 '65. (MIRA 18:9)

1. Volzhskiy beregovoy proizvodstvennyy uchastok, Volzhskiy avanport.

VATRUSHIN, L.S.

Increase in width in the process of copper flattening. Izv.vys. ucheb.zav.; tsvet.met. 5 no.1:142-149 '62. (MIRA 15:2)

1. Krasnoyarskiy institut tsvetnykh metallov, kafedra obrabotki metallov davleniyem.
(Rolling (Metalwork)) (Copper)

PERLIN, I.L.; VATRUSHIN, L.S.

Effect of method of deformation on the structure and strength properties of copper. Issl. splav. tsvet. met. no.4:204-210 '63. (MIRA 16:8)

(Copper--Testing) (Deformations (Mechanics))

VATRUSHIN, L.S.

Comparison of mechanical properties and the surface quality of rolled and drawn copper shapes. TSvet. met. 34 no.11:64-70 N '61. (MIRA 14:11)

1. Krasnoyarskiy institut tsvetnykh metallov.
(Copper--Testing)
(Surfaces (Technology))

ACC NR: AP6019053 (A) SOURCE CODE: UR/0078/66/011/002/0433/0436

AUTHOR: Zviadadze, G. N.; Tabatadze, L.S.; Vatsadze, D. V.

ORG: Georgian Institute of Metallurgy (Gruzinskiy institut metallurgii)

TITLE: Reduction of rubidium chloride by calcium-silicon

SOURCE: Zhurnal neorganicheskoy khimii, v. 11, no. 2, 1966, 433-436

TOIPC TAGS: rubidium compound, calcium compound, electrochemical analysis, chemical reaction kinetics, activation energy

ABSTRACT: The reaction of RbCl with calcium-silicon containing 67% $CaSi_2$ can be expressed in the form of a final reaction: $2RbCl + CaSi_2 = CaCl_2 + 2Rb$ (1). The Rb was liberated in vacuum in the form of vapors. The process of this reaction was studied by (1) continuous registration of the decrease in the charge weight at constant temperature, and (2) electrochemically by determining the polarization of the calcium silicon electrode in RbCl (polarization current curves vs the value of polarization). The 2 g briquets (15 mm in diameter and 4.5 mm in thickness), which were made by compression at 1000-7500 kg/cm^2 of the mixtures of calcium silicon and RbCl, were used in the first method, and in the second method liquid calcium silicon was charged into a porcelain tube containing RbCl. The kinetic curves were plotted (degree of reduction vs time) to characterize the reduction of RbCl (1) at 700C in vacuum (2-3 x 10^{-2} mm Hg)

Card 1/2 UDC: 546.351'131 : 542.942

ACC NR: AP6019053

under various ratios of $CaSi_2$: RbCl, and (2) in an Ar atmosphere at 750C and at various residual pressures of Ar (1, 5, and 10 mm Hg). The changes of the $CaSi_2$: RbCl ratio within a wide range had little effect on the reduction of RbCl. Therefore, all subsequent experiments were made at $CaSi_2$: RbCl = 3. The changes in pressure during briquetting also did not change the reaction parameters. The separate placement of a layer of RbCl under a layer of calcium silicon resulted in a noticeable decrease in the rate of reduction. It was thus concluded that the reduction of RbCl occurred mostly by the reaction of calcium silicon with liquid RbCl. The optimal conditions were achieved during the two-stage reduction: (1) reduction at 750C in Ar atmosphere under an Ar pressure of 5 mm Hg, and (2) creation of a vacuum in the system and further reduction at 900C. About 70% Rb was reduced during the two-stage process. The RbCl which evaporated during reduction concentrated separately from the metal and was recirculated. The two-stage reduction occurred practically without permanent losses of RbCl. The second set of experiments (electrochemical) suggested that the reaction on the boundary of calcium silicon and RbCl occurred in two stages: $CaSi_2 \rightarrow Ca^{2+} + 2Si + 2e$ and $2Rb^+ + 2e \rightarrow 2Rb$. The reaction (1) can therefore be considered as the result of the work of a shortcircuited cell. The anode oxidation of the negative Si ions and the cathode reduction o Rb occurred in this cell. The calculation of apparent energy of activation made from polarization curves yielded a value (E = 19,200 cal/mole) nearly similar to that of the apparent energy of activation obtained from the kinetic data of the first set of experiments. Orig. art. has: 3 fig. and 2 tables.

SUB CODE: 07/ SUBM DATE: 25May65/ ORIG REF: 006

Card 2/2

MATSADZE, G.S.; KAKULIYA, M.Ye.

Effect of whole-body X irradiation on the concentration, composition, and structural viscosity of desoxyribonucleic acid in the brain of baby rabbits. Trudy Inst. fiziol. AN Gruz. SSR 12:193-198 '61. (MIRA 15:2)

(X RAYS--PHYSIOLOGICAL EFFECT)
(DESOXYRIBONUCLEIC ACID) (BRAIN)

VATSADZE, G.S.; PARTSKHALADZE, N.N.

Oxidative phosphorylation in mitochondria and homogenates of the brain of X-ray irradiated chick embryo. Soob. AN Gruz. SSR 40 no.2:339-342 N '65. (MIRA 19:1)

1. Institut fiziologii AN GruzSSR. Submitted Feb. 23, 1965.

VATSAD[illegible], [illegible].G.; [illegible]HGENT[illegible], [illegible]

Some hemodynamic [illegible] in [illegible] aorta. Trudy Inst. klin. i eksper. kard. [illegible] 7 '63.

1. Institut kardiologii [illegible] Gruz[illegible] Tbilisi.

VATSEK, A. [Vacek, A.]

Mechanism of increased oxygen requirement in irradiated rats. (MIRA 15:6)
Med. rad. no.4:83-84 '62.

1. Iz Instituta biofiziki Chekhoslovatskoy akademii nauk.

(RADIATION—PHYSIOLOGICAL EFFECT)
(RESPIRATION) (NERVOUS SYSTEM)

BEREZIN, I.V.; VATSEK, K.; KAZANSKAYA, N.F.

Interaction of free methyl radicals with the hydroxyl hydrogen atoms of tertiary butyl alcohol. Role of hydrogen bonds. Dokl. AN SSSR 144 no.1:139-142 My '62. (MIRA 15:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom N.N.Semenovym.
(Radicals (Chemistry)) (Butyl alcohol) (Hydrogen bonding)

S/241/62/007/004/003/003
I015/I215

27.2400

AUTHOR Vatsek, A.

TITLE The mechanism of increased oxygen consumption in rats following irradiation

PERIODICAL Meditsinskaya radiologiya, v. 7, no. 4, 1962, 83-84

TEXT The present study deals with the influence of the central and peripheral nervous system on the increased metabolic rate following x-irradiation. The experimental animals were 80 rats of both sexes (the average weight was 200 g) and 50 rabbits (average weight 2800 g). The methods are described in detail, as to the technique for measuring gas-exchange during irradiation, an earlier publication is mentioned (A. Vacek, Folia biol., Kraków, v. 5, 1959, 342). The method of electronarcosis, employed in this study, was described elsewhere (J. Strmiska, and A. Vacek, Nature, v. 187, 1960, 151). The results confirmed once more earlier observations that irradiation increases the metabolic rate which is measured by increased oxygen consumption. The author concludes that the neurogenic mechanism plays a major role in this increase whereas the direct effect of radiation on CNS is less important.

ASSOCIATION Institut biofiziki Chekhoslovatskoy akademii nauk. (Institute of Biophysics, Czechoslovak Academy of Sciences)

Card 1/1

USSR / Meadow Cultivation

Abs Jour: Ref Zhur-Biol., Vol 13, 1958, 58459

Author : Vatrushkin, A.

Inst : Not given

Title : Action of Fertilizers on the Yield Capacity of Dry Gap Meadows

Orig Pub: S.-kh. Tatarii, 1957, No 2, 23-25

Abstract: Of all mineral fertilizers used for improvement of meadows covered with Festuca suleata and Kentucky blue grass in the region of Kama, nitrogen and NPK produced the best results.

Card 1/1

13

40660

S/241/62/007/007/003/006
I015/I215

AUTHOR: Vatsek, A.

TITLE: The gas exchange in rats following intraperitoneal administration of cystine and cystamine

PERIODICAL: Meditsinskaya radiologiya, v. 7, no. 7, 1962, 57-62

TEXT: The mechanism of the radiation-protective effect of cysteine and cystamine has never been clear. Experiments were carried out on 110 female rats weighing about 200 g. The gas exchange was recorded automatically and continuously for 60 min. Cysteine hydrochloride (50-1000 mg/kg b.w.) and cystamine (50-200 mg/kg b.w.) in physiological solution were used as protective agents. The pH was adjusted to 7.0 with 10% NaCl. Cysteine, at a dose of 200 mg/kg, turned out to be toxic (30% deaths within 24 hours). Both substances affected the gas-exchange only during the first 10 minutes after administration, thus indicating their effect upon cellular metabolic processes. Cysteine and cystamine did not alter significantly the oxygen uptake in rats nor the CO_2 output 10 min after their administration. The RQ of the rats increased after a 50 mg/kg of cysteine and decreased after a dose of 100-1000 mg/kg. Cystamine brought about a 20% increase in the oxygen uptake after doses of 50, 100, and 150 mg/kg. A dose of 200 mg/kg did not affect the O_2 uptake. The CO_2 output was somewhat increased depending on the dose. The protective effect of these substances cannot be explained by the decreased oxygen tension in tissues, but primarily by their effect on the general metabolic processes. There are 3 figures.

Card 1/2

The gas exchange in rats following...

S/241/62/007/007/003/006
I015/I215

ASSOCIATION: Institut biofiziki Chekhoslovatskoy akademii nauk, Brno (Institute of Biophysics, Czechoslovak Academy of Sciences, Brno)

SUBMITTED: September 22, 1961

Card 2/2

S/081/62/000/004/004/087
B149/B101

11.1510
11.0132.

AUTHORS: Berezin I. V., Vatsek K., Kuo-Ch'u, Dobish O., Kazanskaya N. F.

TITLE: Investigation of the kinetics of elementary free-radical reactions in the liquid phase using tritium

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 62, abstract 4B429 (Tr. po khimii i khim. tekhnol. [Gor'kiy] no. I, 1961, 18-30)

TEXT: The reactivity (R) of cis-decalin (I) and trans-decalin (II) in the reaction with free radical CH_3, generated by decomposition of acetyl peroxide at 55-90°C was investigated with the help of tritium (T). The rate of reaction of I and II with CH_3 was measured with reference to the standard reaction of breaking off a T atom from tritium-containing cyclohexane by the CH_3 radical. The ratio of the rate constants for the reactions between CH_3 and I and II is 1.56. The relative R of T atoms,

Card 1/2

Investigation of the kinetics of ... S/081/62/000/004/004/087
B149/B101

substituted in toluene in the ortho, meta, and para positions and in the CH_3 group has been determined. The probable mechanism of the reaction between the CH_3 radical and the T atom in the hydroxyl group in trimethyl carbinol is considered and the abnormally high value of the factor of the power function and of the activation energy of this process is explained. The possibility of using T for approximate determination of the relative R of free radicals is demonstrated. [Abstracter's note: Complete translation.]

Card 2/2

VATSEK, M.

STRASHITSKIY, I. [Strašický, J.]; VATSEK, M. [Vacek, M.]

Methods for analyzing the general morbidity of the population of the Czechoslovak Republic. Gig. i san. 23 no.2:92 F '58. (MIRA 11:4)
(CZECHOSLOVAKIA--MEDICAL RECORDS)

VATSEK, VL.

USSR/Meadow Cultivation. L.

Abs Jour : Ref Zhur - Biol., No 21, 95856

Author : Vatsek, Vl., Ded, Y.
Inst :
Title : The Perennial Trifolium Ambiguum M. Bieb.

Orig Pub : Za sots. s.-kh. nauku, 1957, A6, No 4, 343-354

Abstract : In the Scientific-Research Institute of Fodders in Brno and the Selection Station in Ugrzetice (Czechoslovakia), trifolium ambiguum which had been brought in from other countries was studied for four years. The western limit of its expanse is Moldavia, in the east the Crimea, Khar'kovskaya, Rostovskaya Oblasts, Azerbaydzhan, Georgia and Armenia. A morphological description of it is cited and the societies in which it grows. Trifolium ambiguum is a perennial plant and develops well on river valley meadows; easily endures proximity to ground waters, foraging and trampling; in Czechoslovakia it is a

Card 1/2

VATSEK, Ya.

"Tantalum and niobium" by G.V.Samsonov, V.I.Konstantinov. Book review by IA.Vatsek. TSvet. met. 34 no.5:80-81 My '61 (MIRA 14:5)

(Tantalum) (Niobium) (Samsonov, G.V.) (Konstantinov, V.I.)

RAGINSKIY, S.A., inzh.; VATSENKO, A.S., dotsent, kand. tekhn. nauk, nauchnyy red.; TABUNINA, M.A., red. izd-va; GOL'BERG, T.M., tekhn. red.

[Masonry work and the assembly of precast elements] Kamennye raboty i montazh sbornykh konstruktsii. Izd.2., ispr. i dop. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1961. 261 p. (MIRA 14:11)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.
(Masonry) (Precast concrete construction)

RAGINSKIY, S.A., inzh.. Prinimali uchastiye: KOVALEV, K.V.; ZAV'YALOV, A.M.. VATSENKO, A.S., kand.tekhn.nauk, nauchnyy red.; PAKHOMOVA, M.A., red.izd-va; SHERSTNEVA, N.V., tekhn.red.

[Masonry work and assemblage of precast construction elements] Kamennye raboty i montazh sbornykh konstruktsii. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 253 p. (MIRA 13:7)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy ponoshchi stroitel'stvu. 2. Instruktory peredovykh metodov truda Glavmosstroya (for Kovalev, Zav'yalov).
(Precast concrete construction) (Masonry)

VATSENKO, A. S. (ENGR)

VATSENKO, A. S. (ENGR) -- "Construction of Walls Out of Consolidated Parts in Industrial Multi-story Dwellings." Sub 10 Oct 52, Sci Res Inst of Construction Engineering Acad of Architecture USSR. (Dissertation for the Degree of Candidate in Technical Sciences)

SO: VECHERNAYA MOSKVA, January-December 1952

VATSENKO, V.A.; GITLITS, M.V.

Determination of the uneven yield of a ferromagnetic carrier for the transduction of phototelegrams. Elektrosviaz' 15 no.5:58-64 My '61. (MIRA 14:6)
(Phototelegraphy)

VATSENKO, V. A.

1442 Issledovaniye perepriyema fototelegramm metodom magnitnoy zapisi. M., 1954. 16 s. 21 sm. (M-vo svyazi SSSR. Mosk. elektrotekhn. in-t svyazi). 100 ekz. B. ts. -(54-54530)

SO: Knizhaya Letopis', Vol. 1, 1955

SOV/106-58-7-8/18

AUTHORS: Vatsenko, V.A. and Patrunov, V.G.

TITLE: Ferrography - a Magnetic Method of Recording Images (Ferrografiya - magnitnyy metod zapisi izobrazheniy)

PERIODICAL: Elektrosvyaz', 1958, Nr 7, pp 49 - 55 (USSR)

ABSTRACT: Since 1956, work has been carried out at the MEIS (Moscow Electrotechnical Communications Institute) on the application of ferrography to the recording of photo-telegrams. The article contains a short description of the basic elements of the process involved and of some of the items of equipment. The processes of optical and magnetic recording are compared in Figures 1 and 2, respectively. It will be seen that the magnetic method is the simpler since the "negative" stage is eliminated. Figure 3 shows the principle of the recording method. The medium used is in the form of a drum rather than a tape since it is not inclined to warp or stretch. The gap width in the recording head is between 10 and 15 μ, which guarantees the recording of the entire spectrum of the photo-telegraphic signal (1 300 ± 550 c/s when n = 60 rpm). The drum diameter is 9 cm. The other dimension of the gap is such as to give 5 lines/mm in the image. Figure 4

Card 1/3

Ferrography - A Magnetic Method of Recording Images

shows a recording position with a removable head. The signal is recorded exactly as received, there being no need for previous detection as in the optical case. The bias frequency is 80 kc/s. The recording materials used differ somewhat from those used in sound recording since a large dynamic range is not required. The materials tested include: Type 1 (B_r = 370 - 500 Gauss; H_c = 70 - 100 Oe), Type 2 (B_r = 700 - 750 Gauss; H_c = 220 - 250 Oe) and a tape for contact printing using powder Nr 101-a (B_r = 800 - 950 Gauss; H_c = 550 - 700 Oe). Images using Type 1 material were dim and lacking contrast; those using Type 2 and 101-a material were satisfactory. The development process may use powders of different colours and multi-colour images are said to be possible. Figure 5 shows a plot of optical density in the image vs. excitation for Type 2 material. Amplitude modulation may be used but for best results variable-area recording is preferred. Descriptive details of possible drum constructions are given. Re-duplication methods are outlined which give up

Ferrography - A Magnetic Method of Recording Images

to 250 copies. Figure 6 shows a recording which corresponds in size to an ordinary telegram blank. The author thanks I.Ye. Grunov for posing the problem and scientific guidance. He is also grateful to technical students M.A. Lesnichenko and A.A. Rolik for assistance.
There are 5 figures and 8 references, 6 of which are Soviet and 2 English.

ASSOCIATION: MEIS

SUBMITTED: January 8, 1958

Card 3/3 1. Facsimile recording systems--Performance

VATSENKO, V. A.

"Investigation of the Relay of Phototelegrams by the Magnetic Recording Method." Cand Tech Sci, Moscow Electrical Engineering Inst of Communications, Min Communications USSR, Moscow, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)

SO: SUM No. 556, 24 Jun 55

VATSHENKO, V. A.

"Investigation of the Relay of Phototelegrams by the Magnetic Recording Method." Cand Tech Sci, Moscow Electrical Engineering Inst of Communications, Min Communications USSR, Moscow, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (13)
SO: Sum. No. 598, 29 Jul 55

VATSEHUBA, G.P.

Case of influenzal meningoencephalitis in a pregnant woman.
Klin.med. 41 no.9:139-140 S'63 (MIRA 17:3)

1. Iz Shvenchenskoy mezhrayonnoy bol'nitsy (glavnyy vrach I.N. Novik) Litovskoy SSR.

VALTER, A.K.; VATSET, P.I.; KOLESNIKOV, L.[illegible]a.; TONAPETYAN, S.G.; CHERNYAVSKIY, K.K.; SHPETNYY, A.I.

Neutron yield from Li^6 (t, n) and Li^7 (t, n) reactions. Atom.energ. 10 no.6:577-586 Je '61. (MIRA 14:6)
(Neutrons) (Lithium—Isotopes) (Nuclear reactions)

VATSET, P.I.; KOLESNIKOV, L.Ya.; TONAPETYAN, S.G.

Neutrons from the C^{12}(t, n) reaction. Zhur. eksp. i teor. fiz. 40 no.5:1257-1260 My '61. (MIRA 14:7)

1. Fiziko-tekhnicheskiy institut AN Ukrainskoy SSR.
(Neutrons) (Nuclear reactions) (Carbon—Isotopes)

28431
S/185/61/006/002/003/020
D210/D304

21,6000

AUTHORS: Vatset, P.I., Vlasenko, V.H., Voloshchuk, V.Y., Doroshenko, H.A., Kolesnykov, L.Ya., Nikitin, V.O., and Tonapetyan, S.H.

TITLE: A diffusion cloud chamber

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 2, 1961, 168 - 173

TEXT: The authors describe the construction and operation of methanol in an air diffusion chamber. This chamber was built as an experimental model for a larger chamber for use with a linear electron accelerator. The chamber (Fig. 1) has a working diameter of 26 cm and an effective height of 6 cm. It is made of stainless steel and consists of three sections: the lower cylinder 1, the cone 2, and the upper cylinder 3. The internal diameter of the lower cylinder is 30 cm and of the upper 22 cm, and the height of the chamber is 80 cm. At the base of the chamber there is a copper condensation disc 4, whose surface has been chemically blackened. This disc is

Card 1/4

A diffusion cloud chamber

cooled by passing liquid nitrogen through a coil (5) soldered onto the bottom of the disc. A glass cylinder (6), 26 cm diameter, 10 cm high, and 4 mm thick is held firmly against the copper disc with the copper cone, thus ensuring a good temperature contact. The temperature distribution in the conical section is effected by electrically heating the flanges of the cone, the lower flange temperature corresponding to the methanol temperature. The cone and the lower ring is separated by a heat insulator 7, the bolts (8) being similarly insulated. Thermocouple and electrode connections are made through the insulating ring, the screen 9 being connected by glass rods to the electrodes. Two windows (10) made from organic glass are situated diametrically opposite each other for illuminating the chamber space. The methanol is fed to the chamber through the lead 12, and it is held in the groove 11 of capacity 300 cm^3, the evaporation being enhanced by filter papers placed in the groove. The methanol temperature is controlled with a thermocouple which enters the chamber through 13. Two windows (14) are provided for photographing the working volume and one (15) for visual ob-

A diffusion cloud chamber

servation. The upper part of the chamber is held at a higher temperature to prevent condensation of methanol on the windows which can cause a high background. The operation of the chamber is controlled by automatically varying the liquid nitrogen flow rate, the methanol temperature, and the temperature of the upper flange of the lower cylinder. The chamber was tested with an air and methanol filling at 1 and 3.5 at. It could be operated at a bottom temperature of -45 to -70°C and a methanol temperature of 10 to 30°C, however, the most satisfactory temperatures were found to be -50 and 20°C respectively, giving a temperature gradient in the working space of 7 deg/cm. At an alcohol temperature above 20°C the droplet background was high; when the temperature fell to 0 to 10°C the vapor flow was insufficient for satisfactory operation of the chamber. The authors have given in this paper a good description and diagrams of the supporting equipment for pumping the liquid nitrogen and feeding methanol to the diffusion chamber. The authors state that they are preparing at the moment a larger chamber with a diameter of 30 cm and a working pressure of 30 at.

Card 3/5

28431
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A diffusion cloud chamber

There are 6 figures and 5 references: 3 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: A. Langsdorf, Rev. Sci. Instr., 10, 91, 1939; Shutt, Rev. Sci. Instr., 22, 730, 1951.

ASSOCIATION: Fizyko-tekhnichnyy instytut, AN URSR, m. Kharkiv
(Technical Physics Institute, AS UkrSSR, Khar'kov)

SUBMITTED: July 1, 1960

Card 4/5

VAL'TER, A.K.; VATSET, P.I.; KOLESNIKOV, L.Ya.; TONAPETYAN, S.G. [Tonapetian, S.H.]; CHERNYAVSKIY, K.K. [Cherniavs'kyi, K.K.]; SHPETNYY, A.I. [Sgpetnyi, O.I.]

Neutron yield in the reaction $Be^9(t, n)$. Ukr. fiz. zhur. 6 no.4:457-460 Jl-Ag '61. (MIRA 14:9)

1. Fiziko-tekhnicheskiy institut AN USSR, g. Khar'kov.
(Nuclear reactions) (Neutrons--Emission)

28432
S/185/61/006/002/004/020
D210/D304

21.6001

AUTHORS: Vatset, P.I., Voloshchuk, V.Y., Kolesnykov, I.Ya., Nikitin, V.O., and Tonapetyan, S.H.

TITLE: A liquid hydrogen bubble chamber

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 2, 1961, 175 - 181

TEXT: The authors describe the construction and operational characteristics of an experimental liquid hydrogen bubble chamber of 500 cm^3 capacity. The object of this work was to have a model chamber for constructing a larger liquid hydrogen bubble chamber. The bubble chamber with the associated equipment is shown in Fig. 1, where 1 is the chamber itself, 10 cm diameter and 5 cm high; 2 is a cup containing a brass sylphon 3. Photography and illumination are carried out through windows 4, made of Pyrex glass. The windows are sealed with a copper gasket of special configuration 5. Copper gaskets were found to be more reliable than lead, as

Card 1/5

A liquid hydrogen bubble chamber

well as being reusable. The chamber is contained in the liquid hydrogen thermostat 6 which is connected with the reservoir 7 of 41. capacity. The temperature of the thermostat is controlled with a special pressure stabilizer 8, which consists of a closed cylindrical vessel containing a small rubber tube along its diameter. The tube is part of the conduit connecting the hydrogen reservoir with a gas cylinder. Nitrogen gas, admitted to the cylinder under a certain critical pressure, restricts the flow of hydrogen through the tubing until the critical pressure is exceeded. This resulted in a pressure control better than 0.1 at. The hydrogen system is surrounded with a belt at nitrogen temperature which consists of a reservoir of liquid nitrogen 9 and a screen 10. This whole system is made of copper and it is contained in a high vacuum chamber 1. which is evacuated by means of a diffusion pump, as well as with activated charcoal 12 placed at the bottom of the screen 10. The liquid level in the hydrogen and nitrogen reservoirs is measured by means of a hydrostatic level gauge 13 filled with oil. To effect full evaporation of liquid hydrogen in the dip tube a copper

Card 2/5

A liquid hydrogen bubble chamber

conductor is inserted inside it. Superheating of liquid hydrogen in the chamber is achieved by reducing pressure with sylphon mechanism 14, 15. The pressure on the upper sylphon is applied through the electromagnetic valve 16 and the magnitude of movement is controlled by means of the regulator 17. A detailed description of the electromagnetic valve is given. Gaseous hydrogen purified silica gel and activated charcoal is fed to the chamber through the precooler 18 and the needle valve 19, and the pressure in the chamber is measured by the gauge 20. The authors have given a brief description of bringing the chamber into operation. The chamber was operated over a temperature range of 27 to 30°K (corresponding to a vapour pressure of 4.5 to 8 at.) and a working cycle of 2 seconds. It was found that by constant superheating, the sensitivity of the chamber increased with temperature. The sensitivity also varied with the amplitude of superheating, and it was possible to make the chamber insensitive to relativistic particles. The consumption of liquid hydrogen was 15 l. for cooling and half a liter for each hour of operation. 60 l. of liquid nitrogen was

Card 3/5

A liquid hydrogen bubble chamber

also required for 10 hours of operation and initial cooling. For lighting the chamber a pulse lamp 27 was used. To give a good illumination of the chamber light passed through a venetian blind 28, made of 2 mm organic glass, 10 mm wide, glued together to make an angle of 30° with the window. [Abstractor's note: The angle should probably read 60°]. There are 5 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: H.P. Hernander, I.W. Mark, R.D. Watt, Rev. Sci. Instr. 28, 528, 1957

ASSOCIATION: Fizyko-tekhnich-nyy instytut, AN URSR, m. Kharkiv
(Technical Physics Institute, AS UkrSSR, Khar'kov)

SUBMITTED: July 1, 1960

28432
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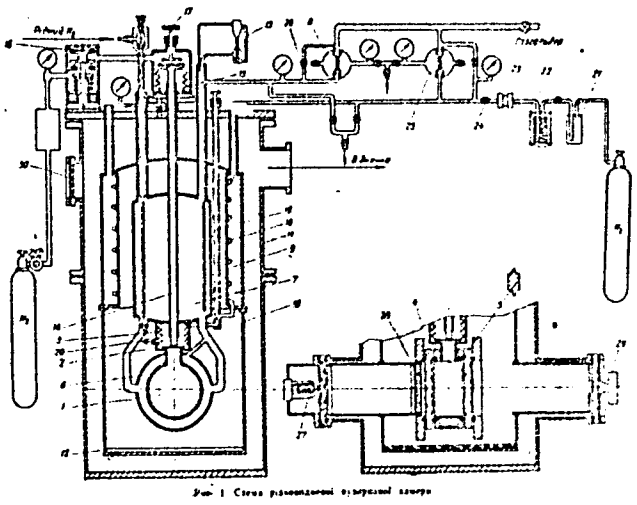
A liquid hydrogen bubble chamber

Fig. 1. Diagram of the liquid hydrogen bubble chamber.



Card 5/5

VATSET, P.I.; VLASENKO, V.G. [Vlasenko, V.H.]; VOLOSHCHUK, V.I.; DOROSHENKO, G.A. [Doroshenko, H.A.]; KOLESNIKOV, L. Ya. [Kolesnykov, L. IA.]; NIKITIN, V.A. [Nikitin, V. O.]; TONAPETYAN, S.G. [Tonapetyan, S.H.]

Diffusion chamber. Ukr. fiz. zhur. 6 no.2:168-174 Mr-Ap '61. (MIRA 14:6)

1. Fiziko-tekhnicheskiy institut AN USSR, g. Khar'kov.
(Electrons—Scattering)
(Cloud chamber)

VATSET, P.I.; VOLOSHCHUK, V.I.; KOLESNIKOV, L. Ya. [Kolesnykov, L. IA]; NIKITIN, V.A. [Nikitin, V.O.]; TONAPETYAN, S.G. [Tonapetian, S.H.]

Liquid-hydrogen bubble chamber. Ukr. fiz. zhur. 6 no.2:175-181 Mr-Ap '61. (MIRA 14:6)

1. Fiziko-tekhnicheskiy institut AN USSR, g. Khar'kov.
(Electrons—Scattering)
(Bubble chamber)

VATSET, P.I.; VOLOSHCHUK, V.I.; KOLESNIKOV, L. Ya. [Kolesnykov, L. IA.]; NIKITIN, V.A. [Nikitin, V.O.]; TONAPETYAN, S.G. [Tonapetian, S.H.]

Eleven-liter propane bubble chamber. Ukr. fiz. zhur. 6 no.2:182-185 Mr-Ap '61. (MIRA 14:6)

(Electrons—Scattering)
(Bubble chamber)

VAL'TER, A.K.; VATSET, P.I.; KOLESNIKOV, L.Ya.; TONAPETYAN, S.G.; CHERNYAVSKIY, K.K.; SHPETNYY, A.I.

Neutron yield in the reaction of tritions with fluorine and aluminum nuclei. Zhur. eksp. i teor. fiz. 40 no.5:1237-1243 My '61. (MIRA 14:7)

1. Fiziko-tekhnicheskiy institut AN Ukrainskoy SSR.
(Nuclear reactions) (Tritons(Tritium ions)) (Neutrons--Measurement)

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AUTHORS: Vatset, P.I., Voloshchuk, V.Y., Kolesnykov, L.Ya., Nikitin, V.O., and Tonapetyan, S.H.

TITLE: 11 liter propane bubble chamber

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 2, 1961, 182-185

TEXT: The authors review the advantages and simple theory of bubble chambers and they describe a propane bubble chamber which has a capacity of 34.0 x 20.4 x 16.0 cm3, and is intended for use in a magnetic field of 12000 gauss. The chamber has two windows, 37 x 34 x 7 cm3 made of hardened optical glass. Pressure is applied to the working liquid hydraulically with the help of compressed air. The pressurizing unit 1 consists of to electromagnetic valves 2, 3, and the pressure-drop to a preset level is controlled by means of the regulator 5. The working temperature of the chamber is 64°C, corresponding to a vapor pressure of 24 at. This temperature is

Card 1/3

28433
S/185/61/006/002/005/020
D210/D304

11 liter propane bubble chamber

maintained constant by thermostating the chamber, the hydraulic duct 6, the pressure controller 1, and the compressed air reservoir 4. Unlike other bubble chambers this one has a vacuum duct 8, passing through the working liquid, for admixing with the liquid solid, liquid, or gaseous substances for investigation. Two types of lighting were tried. One was lighting through a venetian blind block, while the other consisted of passing the light through a polarizer and photographing it through an analyses. The chamber was assigned for a study of the interaction of electrons, γ-rays, and mesons with hydrogen, carbon and other nuclei. Under certain circumstances the chamber with the vacuum duct can be used for scattering electrons with electrons. There are 1 figure and 8 references: 4 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: D.A. Glaser, Phys. Rev., 87, 665, 1952; D.A. Glaser, Phys. Rev., 91, 762, 1952; L.O. Oswald, W.M. Powelle, W.B. Folwer, Rev. Sci. Instr., 29, N10, 874, 1958; Hilding Slütz, Nucler Instr., 5, N 1, 1959.

Card 2/4

28433
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11 liter propane bubble chamber

ASSOCIATION: Fizyko-tekhnichnyy instytut, AN URSR, m Kharkiv
(Technical Physics Institute, AS UkrSSR, Khar'kov)

SUBMITTED: July 1, 1960

Card 3/4

7 (5), 21 (1)

AUTHORS: Vatset, P. I., Tonapetyan, S. G., Dorofeyev, G. A.

SOV/89-7-2-16/24

TITLE: A Neutron Detector Having Constant Sensitivity for Neutrons With Energies 0.025-14 Mev (Detektor neytronov s postoyannoy chuvstvitel'nost'yu k neytronam s energiyami ot 0.025 do 14 Mev)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 2, pp 172-174 (USSR)

ABSTRACT: The neutron detector described in references 1 and 2, with its paraffin and boron carbide shielding is modified (Detailed sketch Fig 1). First of all the diameter of the boron counter is enlarged to 30 mm. It is filled with BF_3 (70 % B^{10}) of a 140 mm Hg pressure, the operational voltage is 1700 v and the plateau approximately 300 v. The enlargement of the diameter of the counter relatively increased the sensitivity of the counter concerning fast neutrons. The examination of the detector sensitivity was made in "good geometry". The following neutron sources were used: Sb-Be, Ra-Be, Na-D, Na-Be, $T(d,n)He^4$ Po-α-Be, and neutron source according to ref 3. The background caused by scattered neutrons did not exceed 6 %. A 1 c strong Sb^{124} γ-source located at a 20 cm distance from the counter

Card 1/3

did not impair the neutron sensitivity of the detector. The standard strength of the neutron preparations was known up to an accuracy of ± 3 %. The measurement of the relative intensity of the mentioned neutron sources was carried out with an accuracy of ± 1.5 %. The location of the counter in relation to the paraffin block is sensitive. A few curves show that the sensitivity of the counter decreases when the boron counter is put into the paraffin block. It was shown by an experiment that in a certain position there is a constant sensitivity towards neutrons of energies of 0.8-14 mev. In another position the sensitivity of the detector for neutrons of an energy between 0.025 and 5 mev is constant in the measuring accuracy range (± 3 %) and decreases by approximately 11 % when the neutron energy reaches 14 mev. K. D. Sinel'nikov, A. K. Val'ter, I. V. Kurchatov and I. N. Golovin were interested in these studies and collaborated from time to time. T. I. Lyashenko and L. Ya. Kolesnikov participated in certain partial examinations. There are 3 figures and 3 references, 1 of which is Soviet.

VATSFEL'D, V.; FUKSHANSKIY, M.; SHTER, B.

Organizing crews for transportation of earth on dump trucks. Avt. transp. 36 no.8:33-35 Ag '58. (MIRA 11:9)

1.Glavmosavtotrans.

(Dump trucks) (Earthwork)

VATSIETE, L. E., KUZNETSOV, S. S., LUSIS, E. YA., (Veterinary Doctors)

"Working Experience of the Veterinary Laboratory of the Latvian Republic."
Veterinariya vol. 38, no. 11, November 1961., p. 14

VATSIYETE, L. [Vaciete, L.]

Organization of veterinary control of the quality of feeds.
Veterinariia 40 no.7:5-6 Jl '63. (MIRA 16:8)

1. Latviyskaya respublikanskaya veterinarnaya laboratoriya.
(Latvia--Feeds)

KUZNETSOV, S.S., veterinarnyy vrach; LUSIS, E. Ya, veterinarnyy vrach;
VATSIYETE, L.E. [Vaciete, L.], veterinarnyy vrach

Work practices of the Latvian Republic Veterinary Laboratory.
Veterinariia 38 no.11:14-18 N '61 (MIRA 18:1)

VATSIYETIS, A. R.

Vatsiyetis, A. R. - "The Strength of Dies in Presses of Modern Design." Latvian State U. Riga, 1956 (Dissertation for the Degree of Candidate in Technical Sciences).

So: Knizhnaya Letopis', No. 10, 1956, pp 116-127

VATSIYETIS, A.R., inzhener.

Increasing the strength of perforating punch presses. [Izd.] LONI-TOMASH vol.40:143-150 '56. (MLRA 10:4)
(Punching machinery)

VATSIETIS, Z.

26578 Bor'ba sovkhozov latviyskoy SSR za dosrochnoe vypolnenie trekhletnego plana razvitiya obshchestvennogo zhivotnovostva. Bol'shevik sov. Latvii, 1949, No. 13, s. 33-39.

SO: LETOPIS' NO. 35, 1949

Arc Extinguishing Processes in Air Breakers. PA - 3102

are displaced in the direction of a greater nozyle cross-section, but the distance between these curves becomes greater left of the point of intersection. Consequently in this area of the cross-section the conditions for the extinguishing of the arc are improved. Therefore the air-breakers must be so constructed that the stopping of the interruption-nozyle through the arc takes place before the stopping of the nozyle under the influence of the heat engendered by the nozyle. The nozyle must serve only for the extinguishing of the arc.
(With 6 ill. 1 table)

ASSOCIATION Scientific Research Institute for Power-Current-Technics-Chechoslovakia
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Card 2/2

SOV/137-58-8-16634

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 55 (USSR)

AUTHORS: Vatslavik, E., Belyayev, A.I.

TITLE: An Investigation of Melts of a Cryolite-Alumina-Aluminum Fluoride-Magnesium Fluoride System as Electrolyte for the Aluminum Bath (Issledovaniye rasplavov sistemy kriolit-glinozem-ftoristyy alyuminiy-ftoristyy magniy kak elektrolita alyuminiyevoy vanny)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, 1957, Nr 27, pp 163-177

ABSTRACT: Investigations of the physicochemical properties of cryolite melts containing MgF_2 (fusibility, density, electrical conductivity, wettability, and critical current density) and determination of Al losses therein result in the conclusion that in terms of its effect on the physicochemical properties of cryolite melts, MgF_2 has significant advantages over CaF_2, rendering desirable its employment as a component of electrolytes for Al baths.

Card 1/1 1. Cryolite--Properties 2. Electrolytes--Performance 3. Aluminum--Electrolysis N.P.

78-3-4-33/38

AUTHORS: Vatslavik, E., Belyayev, A. I.

TITLE: Composition Diagram and Properties of the Cryolite Corner in the Systems Na_3AlF_6-Al_2O_3-MgF_2 and Na_3AlF_6-AlF_3-MgF_2 (Diagrammy sostav - svoystvo kriolitovogo ugla sistem Na_3AlF_6-Al_2O_3-MgF_2 i Na_3AlF_6-AlF_3-MgF_2)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol.3, Nr 4, pp. 1044-1047 (USSR)

ABSTRACT: The physico-chemical properties of the melts of the systems Na_3AlF_6-Al_2O_3-MgF_2 and Na_3AlF_6-AlF_3-MgF_2 were investigated in detail.
In the system Na_3AlF_6-Al_2O_3-MgF_2 the fusion diagram of the cryolite corner of the system was constructed. It was found that the density of the melt decreases in direction to Al_2O_3 and increases in direction to MgF_2. In the system Na_3AlF_6-AlF_3-MgF_2 the density of the melt is decreased in direction to AlF_3 and increased in direction to MgF_2. The determinations of the electric conductivity showed

Card 1/2

Composition Diagram and Properties of the Cryolite Corner in the Systems Na_3AlF_6-Al_2O_3-MgF_2 and Na_3AlF_6-AlF_3-MgF_2

that it decreases in the cryolite corner of the system Na_3AlF_6-Al_2O_3-MgF_2 in direction to Al_2O_3 and MgF_2, this is especially the case in the section at a ratio Al_2O_3 : MgF_2 = = 7 : 3.

In the system Na_3AlF_6-AlF_3-MgF_2 at simultaneously increasing AlF_3 and MgF_2 the specific electric conductivity of the cryolite melt increases.

The solubility of Al_2O_3 decreases in the presence of MgF_2.

There are 9 figures and 5 references all of which are Soviet.

SUBMITTED: May 3, 1957

Card 2/2

ACC NR: AP7001343 SOURCE CODE: UR/0386/66/004/011/0464/0468

AUTHOR: Yungvirt, K.; Vatslavik, Ya.

ORG: Institute of Plasma Physics, Czechoslovak Academy of Sciences

TITLE: Quasilinear transformation of waves in an inhomogeneous plasma and nonlinear effects

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 11, 1966, 464-468

TOPIC TAGS: plasma wave interaction, nonlinear plasma, nonlinear effect, plasma decay

ABSTRACT: This is a continuation of earlier work by one of the authors (Jungwirth, with A. B. Mikhaylovskiy, ZhETF v. 50, 1036, 1966), where the feasibility of quasilinear wave transformation in a plasma was demonstrated. Inasmuch as the earlier paper left open the question whether this effect can play an important role in the presence of nonlinear wave interaction, the authors analyze the kinetic equation for such a case and determine the conditions under which a quasilinear transformation can or cannot occur in the presence of nonlinear interaction. A table is presented listing the quantities characterizing the nonlinear interaction, the time variation of the energy density, and other processes accompanying the wave interaction and transformation. A detailed corroboration of the present data is to be published in Czech. J. Phys. Orig. art. has: 6 formulas and 1 table.

SUB CODE: 20/ SUBM DATE: 22Aug66/ ORIG REF: 002/ OTH REF: 001

Card 1/1