

VANYUSHIN, S.S.; MALKHAZYAN, M.G.

Age of subvolcanic and hypabyssal formations of Kafan ore deposits.  
Dokl.AN Arm.SSR.23 no.3:133-136 '56. (MLRA 10:1)

1. Institut geologicheskikh nauk Akademii nauk Armyanskoy SSR.  
Predstavlene I.G. Magak'yanom.  
(Kafan--Ore deposits)

VANYUSHIN, S.S.

Geological conditions of formation of stockworks in the Kafan ore deposit. Izv. AN Arm. SSR. geol. i geog. nauk 10 no.4:77-100 '57.  
(MIRA 11:2)

1. Institut geologicheskikh nauk AN ArmSSR.  
(Kafan Province--Ore deposits)

14(5)

SOV/172-11-5-8/9

AUTHORS: Malkhasyan, E.G., Leyye, Yu.A., Vanyushin, S.S.

TITLE: Reply to Criticism of R.A. Arakelyan and G.O. Pidzhyan (Otv  
na kritiku R.A. Arakelyana i G.O. Pidzhyana)

PERIODICAL: Izvestiya Akademi nauk Armyanskoy SSR, Seriya geologicheskikh i  
geograficheskikh nauk, 1958, Vol 11, Nr 5, pp 61-66 (USSR)

ABSTRACT: The article is a reply to the critical review offered by R.A.  
Arakelyan and G.O. Pidzhyan concerning certain works published  
by the authors pertaining to the geology of the Kafanskoye rud-  
noye pole (Kafan Ore Fields). The authors do not agree with a  
number of statements made by their critics and furnish justifi-  
cations in favor of their findings also by referring to the in-  
vestigations of a number of geologists such as I.G. Magak'yan,  
S.S. Mkrtchyan, K.N. Paffengol'ts, A.T. Aslanyan, S.S. Vanyushin,  
A.Ye. Kocharyan who based their works on the material collected

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SOV/172-11-5-8/9

Reply to Criticism of R.A. Arakelyan and G.O. Pidzhyan

by V.G. Grushevoy, V.N. Kotlyar, A.L. Dodin, Yu.A. Arapov.  
There are 5 Soviet references.

SUBMITTED: August 14, 1958

Card 2/2

VANYUSHIN, S.S.

Place of the dike complex of the Kafan ore basin (Armenia) in the tectonic and magnetic history of the Somkheti-Karabakh geosyncline. Dokl. AN Arm. SSR 29 no.2:81-87 '59. (MIRA 12:11)

1. Institut geologicheskikh nauk Akademii nauk Armyanskoy SSR. Predstavleno akademikom AN Armyanskoy SSR K.N. Paffengol'tsem. (Armenia--Geology, Structural)

VANYUSHIN, S.S.

Basic characteristics of the localization of mineralization  
in the Kafan ore zone. Izv. AN Arm.SSR Nauki o zem. 17 no.2:  
49-62 '64. (MIRA 17:8)

1. Armyanskiy gosudarstvennyy institut po proyektirovaniyu  
predpriyatiy tsvetnoy metallurgii.

TOICHEL'NIKOV, Yu. S. (Leningrad); VANYUSHINA, N. P.

Editor's mail. Fiz. v shkole 22 no.4:95-96 J1-Ag '62.  
(MIRA 15:10)

1. 243-ya shkola, Leningrad.

(Achromatism) (Atmospheric pressure)

VANYUSHINA, Yu.V.

Determination of the group factors of the ABO system in saliva,  
hair, and the spongy substance of bone in Macaca rhesus. Probl.  
gemat.i perel. krovi 6 no.1:10-14 '61. (MIRA 14:2)  
(HAIR) (SALIVA) (BONE)  
(BLOOD GROUPS)



L 17998-66 EWT(1) SCTB DD

ACC NR: AP6007991

(N)

SOURCE CODE: UR/0391/66/000/003/0054/0054

AUTHOR: Vanyushina, Yu. V. (Moscow); Gerd, M. A. (Moscow); Lavrenchik, Ye. I. (Moscow); Panferova, N. Ye. (Moscow)

17  
B

ORG: none

TITLE: Some functional shifts in the human organism during brief hypodynamia

215

SOURCE: Gligiyena truda i professional'nyye zabolevaniye, no. 3, 1966, 54

TOPIC TAGS: hypodynamia, immobilization, cardiovascular system, dynamometer, muscle tone

ABSTRACT: Functional shifts in the cardiovascular, muscular, and central nervous systems of 4 men immobilized for 2 1/2 hr were the subject of this study. A variety of indices were used: pulse rate, systolic pressure while resting and after tests, maximum force exerted on a wrist dynamometer, time in which the bulb of a liquid dynamometer was pressed with half maximum force, and the tone of some hand and foot muscles (determined with a spring myotonometer). The degree of coordination of arm movements and the tremor of an outstretched right hand were measured with a modified "Mede" instrument. In addition, the latent period of the visual motor reaction to a light signal was determined. Tests were conducted before and after the experiment, and 1 1/2 hr after the beginning for tests requiring no significant movement or exertion. Experimental results showed that after a brief stay in conditions of limited

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UDC: 613.65

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ACC NR: AP6007991

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mobility the adaptability to active work decreased. The measured strength of wrist muscles dropped, there was a decrease in the tone of hand and foot muscles, reactions to light and word signals were delayed, and cardiovascular indices worsened during measured loads. During the transition from limited mobility to activity, where rapid reactions and physical exertion are required, gymnastics or other toners must be prescribed to decrease the unfavorable effect of limited mobility on the human organism. [JS]

SUB CODE: 06/ SUBM DATE: 15Jul63/ ATD PRESS: 4213

Card

*my*  
2/2

ACC NR: AT6036514

SOURCE CODE: UR/0000/66/000/000/0039/0090

AUTHOR: Vanyushina, Yu. V.; Panferova, N. Ye.; Tishler, V. A.

ORG: none

TITLE: Effect of elevated air temperatures on human adaptability to the orthostatic test [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966.]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 89-90

TOPIC TAGS: hyperthermia, orthostatic test, electrocardiography, human physiology, space physiology

ABSTRACT: One of the most important problems of space physiology is the maintenance of human orthostatic resistance following exposure to spaceflight factors. In this connection, the study of mechanisms of change in the adaptation of man to a vertical position during exposure to various environmental factors is of great importance.

The present investigation studied change in human orthostatic adaptability following a 4-hr stay in a heat chamber at an ambient temperature

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ACC NR: NT6036514

of 36° to 40° C and a relative humidity of 60% to 70%. In all, 20 experiments (of which 4 were controls) were conducted on 4 men.

A 10-min orthostatic test and a 5-min clinostatic test were conducted before, and 1 hr after, exposure in the heat chamber (after body temperature had returned to the initial level). Before, during, and after exposure of the subject in the chamber, measures were made of body temperature, moisture loss, and specific and nonspecific cholinesterase activity (by A. A. Pokrovskiy's method), and electrocardiograms, seismocardiograms, pneumograms, and arterial pressure were recorded. The last four indices were also recorded during the tests.

Following exposure to heat, the adaptability of the organism of the subjects to the orthostatic test deteriorated: cardiac contraction frequency increased more sharply, blood pressure dropped, and in one case a pre-collapse state was observed.

When the subjects were in the vertical position, their electrocardiograms showed shortening of the R-R and PQ intervals, and an increase in the difference between the actual and "correct" systolic index; seismocardiograms showed acceleration of the expulsion phase compared to "correct" values, decrease in the intrasytolic index of expulsion, in-

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ACC NR: AT6036514

crease in the intrasystolic index of tension, and a decrease in Blyumberg's coefficient. Following the heat experiments, changes in all of the above-enumerated indices of cardiac activity were more pronounced. Blyumberg's coefficient dropped to 1.2, which can be regarded as indicating a considerable decrease in blood flow to the heart.

It was not possible to establish a dependence between the degree of change in the studied cardiovascular system indices and the amount of perspiration moisture loss in cases where the latter did not exceed 4% of the weight. When the loss exceeded 4% H<sub>2</sub>O, such a dependence appeared.

After heat chamber exposure, the condition of the subjects was characterized by dominance of the parasympathetic centers of the nervous system. Arterial pressure was down, the ocular cardiac and clinostatic reflexes became more pronounced, there was a sharp increase in respiratory pulse arrhythmia during the clinostatic reflex, the rate of development of the orthostatic reflex slowed, and specific and nonspecific cholinesterase activity fell off.

It can be suggested that besides dehydration of the organism, one of the reasons for the deterioration of adaptability of the organism of the sub-

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ACC NR: AT6036514

jects to the vertical position following exposure to heat is increased para-sympathetic nervous system tonus. In all probability this is due to structural deficiencies in arterial vessels, slower development of cardiac orthostatic reflexes, and decreased venous blood flow to the heart.

[W. A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 4/4

ACCESSION NR: AT4042661

8/0000/63/000/000/0092/0095

AUTHOR: Vanyushina, Yu. V.

TITLE: Effects of hypodynamia and simulated weightlessness on adaptive cardiovascular reactions to gravity

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 92-95

TOPIC TAGS: cardiovascular reaction, orthostatic test, hypokinesia, hypodynamia, simulated weightlessness, gravity effect

ABSTRACT: In order to study the adaptive reactions of the cardiovascular system to gravity, healthy males 20 to 22 years of age were subjected to simple hypodynamia and hypodynamia with simulated weightlessness. Subjects remained 5.5 to 10.5 days on special couches in a pose of maximal muscle relaxation, or 5.5 to 11.5 days floating in a tank of water. Body movement was kept to a minimum for both groups of subjects. Orthostatic (active change of posture from sitting to standing) and clinostatic (subject passive, sitting in a chair which brings him to a standing .

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ACCESSION NR: AT4042661

position without exertion) tests were used to evaluate the reactions of the adaptive cardiovascular mechanisms. Pulse rate and arterial blood pressure were measured every minute for 10 min before erection to the standing position in both types of test. These measurements were continued for 1 min following erection of the active subjects and for 5 min following erection of the passive subjects. Reactions of all subjects to change from sitting to standing position were normal prior to their exposure to hypodynamia and simulated weightlessness. Sharp changes in cardiovascular reactions to orthostatic tests were observed after exposure to hypodynamia. Pulse rates increased by 20 to 49 beats per minute and systolic pressure showed a pronounced ( $\geq 20$  mm Hg) reduction. After prolonged exposure to hypodynamia with simulated weightlessness, the differences in the responses to orthostatic tests were even more pronounced: extraordinary tachycardia (50 to 74 beats per minute) and a drop of 26 mm Hg in systolic pressure. This systolic pressure drop, accompanied by increased diastolic pressure, resulted in a sharp reduction in pulse pressure (to 8--12 mm Hg). Dizziness followed erection to the standing position in a number of cases. Parallel investigations of chronotropic cardiac activity during unconditioned orthostatic stimulation were performed by activation of the nerves which increase cardiac rhythm, permitting evaluation of the activation speed of cardiac regulatory mechanisms. Following hypodynamia, reduction in the extent

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ACCESSION NR: AT4042661

and rapidity of reaction, as well as pathological lability and instability of the response, were observed. Changes in Aschner's oculocardiac reflex, which was inhibited or even absent or reversed, also indicate some inertia in the development of cardiovascular reflexes after hypodynamia and weightlessness. It is suggested that disruption of the neural-reflex mechanisms regulating cardiovascular activity may be one reason for the observed weakening of cardiovascular reactions compensating changes in position.

ASSOCIATION: none

SUBMITTED: 27Sep63

ENCL: 00

SUB CODE: LS

NO REF SOV: 000

OTHER: 00

Card 3/3

L 11385-67 EWT(1) SCTB DD/GD

ACC NR: AT6036513

SOURCE CODE: UR/0000/66/000/000/0088/0089

AUTHOR: Vanyushina, Yu. V.; Gerd, M. A.; Panferova, N. Ye.

ORG: none

29

TITLE: Changes in some indices of the functional state of the human organism remaining for long periods in a semirecumbent posture [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 88-89

TOPIC TAGS: orthostatic test, hypodynamia, human physiology, space physiology, biologic metabolism, weightlessness simulation

ABSTRACT: Some human physiological indices were studied during prolonged stay in a semirecumbent posture, the most characteristic position for man in conditions of weightlessness. This posture was created experimentally by immersing subjects in water, or by immobilizing them in a special chair. Healthy men aged 20--23 participated in 21 experiments (9 water experiments and 12 in the chair), varying in length from 1.5 to 11.5 days. A number of physiological indices were recorded at two-hour intervals around the clock (except during sleep): pulse and respiration rates, blood pressure, and body temperature. Basal metabolism was measured by the Douglas-

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Holden method every morning upon awakening. The maximum strength and endurance of wrist muscles was determined periodically. Biological activity of human blood was determined every 2—3 days using an isolated frog heart.

Experimental results showed that pulse and respiration rates hardly changed throughout the experiment, whereas diastolic and systolic pressures declined progressively (systolic pressure dropped to 60—70 mm Hg.) The biological activity of the blood shifted in the direction of decrease: in the chronotropic effect and increase in the inotropic effect. The basal metabolism rate dropped during the experiments, while the respiratory coefficient increased. Instead of body temperature dropping in the evening, in some cases it rose to subfebrile levels (up to 37.5° C)° Furthermore, the strength and endurance of wrist muscle decreased, especially in the right hand (decrease of 40—50%). Sleep was light, brief and frequently interrupted, and the subjects were irritable and grouchy. The pattern of the described changes was identical for both series of tests, however changes were more pronounced in the water tests.

Immediately after completion of the experiment, blood pressure, pulmonary circulation, basal metabolism, respiratory coefficient, and sleep returned to initial levels. In addition, the pulse rate increased.

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However, the remaining functions had not normalized within 3--5 days. It was concluded that prolonged stay of man in a semirecumbent position results in fundamental alteration in functional systems, in some cases accompanied by shifts of a neurotic character, such as increased body temperature at night, the occurrence of subfebrile temperature, disruption of sleep, irritability, and bad moods. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Cord 3/3 egk

1ST AND 2ND ORDERS      PROCESSES AND PROPERTIES INDEX

**F**

1397. RECOVERY OF VAPOURS OF VOLATILE SOLVENTS ON SOLID SORBENTS.  
 IX. DESORPTION OF VOLATILE SOLVENTS FROM CHARCOAL. Alekseevskii,  
 E.V. and Vanyushina, Z.S. (J. Appl. Chem. (U.S.S.R.), 1945, 18,  
 193-207) It was shown that the desorption of solvents (EtOH and  
 benzene) from charcoal AP by means of steam proceeds simultaneously  
 with sorption of water vapour, the later being a function of  
 charcoal temperature, time, the nature of the displaced solvent,  
 and the retaining capacity of the charcoal. At higher temperatures,  
 less water is absorbed by the adsorbent, while the better is the  
 capacity of the charcoal for the solvent and the poor the  
 miscibility of the solvent with water, the less intense is the  
 sorption of whater in the above displacement. Generally, the  
 1st 10 min, is sufficient to displace 45-85% of the adsorbed  
 solvent.

G.A.

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

1ST AND 2ND ORDERS      1ST AND 2ND ORDERS

CA

PROCESSES AND PROPERTIES INDEX

RECOVERY OF VAPORS OF VOLATILE SOLVENTS ON SOLID ADSORBENTS.  
 X. Temperature and kinetic changes in charcoal charge during sorption of water vapor. R. V. Alekseevskii and Z. S. Vasyushkina (Leningrad Chem. Tech. Inst.). *J. Applied Chem.* (U.S.S.R.) 18, 377-80(1945) (English summary); cf. C.A. 40, 330P.—During sorption of water vapor by charcoal AP at the temp. of desorption of volatile solvents, i.e. 100-3°, there is observed a temp. rise of the charcoal mass to 134°, i.e. 34° above the temp. of the incoming water vapor, with the amt. of H<sub>2</sub>O being adsorbed varying from a max. in the leading layer and dropping to a min. in the rear section. The amt. of H<sub>2</sub>O adsorbed by the charcoal at the above temp. is less than that obtained under otherwise analogous conditions when solvents are being desorbed from the charcoal by the water vapor. This effect is probably explained by the lower temp. (110-12°) resulting from the latter condition.  
 G. M. Kosolapoff

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

GENERAL SUBJECTS

CHARACTERISTICS

EXPLANATION

SYMBOLS

583. RECOVERY OF VOLATILE SOLVENT VAPOURS ON SOLID SORBENTS.  
 XI. DESORPTION OF SOLVENTS FROM SOLID SORBENTS BY WATER VAPOUR.  
 DESORPTION THEORY. Alekseevskii, E. V. and Vanyushina, Z. S.  
 (J. Appl. Chem. (U.S.S.R.)), 1945, 18, 658-65; Chem. Abstr., 1946,  
40, 6316)

Desorption of benzene and alcohol from charcoal by water vapour was investigated further. It was shown that desorption rate is connected with the residual amount of solvent vapour by the equation:  $-da/dt = bu^n$ , where a = solvent concentration, t = time, b = experimental const., as in n, and da/dt is the rate of sorption. Benzene is desorbed more rapidly than alcohol. The amount of desorbed vapour is linearly dependent on the depth of the charcoal layer.

ASIS-USA METALLURGICAL LITERATURE CLASSIFICATION

6-27742-2272

AUTHORS: Vanyushina, Z. S. Candidate of Technical Sciences, Vilesova, M. S., Candidate of Chemical Sciences, Chistyukova, G. A., Candidate of Chemical Sciences SOY/64-58-4-3, '20

TITLE: The Synthesis of Hexamethylene Diamine by the Catalytic Hydration of Adiponitril in a Continuous Current (Sintez geksametilendiamina putem kataliticheskogo gidrirovaniya adiponitrila v nepreryvnom potoke)

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 4, pp. 205-208 (USSR)

ABSTRACT: In the experimental part of this paper the collaborators of the GIPKh, I. L. Bagal and M. V. Loginova, took part. As hexamethylenediamine is an important raw material various production methods were worked out with data having been obtained that differ to a great extent. There are only two patents for the continuous production on which there are, by the way, no prescriptions for a corresponding mode of operation and for a corresponding apparatus. In the present paper cobalt catalysts on carriers were used which

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The Synthesis of Hexamethylene Diamine by the Catalytic  
Hydration of Adiponitryl in a Continuous Current

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had already proved to be of optimal usability in the discontinuous production; the hydration was carried out by means of the apparatus shown in a diagram. The method of the analysis of the reaction mixture was worked out with the help of the collaborators of the GIPKh, I. V. Selyakh and S. Z. Akimova. Active aluminum oxide proved best as catalyst carrier; the production technique of the catalyst is mentioned. From the mentioned experimental results may be seen that a contact load of from 0,2 to 0,3 ml/ml · hour (adiponitryl-catalyst) is optimal as well as a temperature of 100°. The ratio adiponitryl: ammonia is to be 1 : 8 mole and that of adiponitryl: hydrogen  $\approx$  1 : 20 mole, with about a yield of 85-90% hexamethylenediamine being obtained under the above mentioned conditions at 200 atmospheres. Finally the technical and economic advantages of the continuous method as compared to the discontinuous method are mentioned. The collaborators of the GIPKh (State Institute for Applied Chemistry)

I. L. Sagal and M. V. Loginova took part in the experimental part of this work. There are 1 figure, 4 tables, and 19 references which are Soviet.

Card 2/3

SOV/64-56-4-5/20

The Synthesis of Hexamethylene Diamine by the Catalytic Hydration of Adiponitril in a Continuous Current

1. Cyclohexanes--Synthesis
2. Hydrazine--Synthesis
3. Adiponitril--Catalysis
4. Cobalt catalysts--Applications

Card 3/3

YEZEVSKAYA, Galina Filippovna; VANYUSHINA, Z.S., kand.khim.nauk, red.;  
VORONINA, L.F., red.

[Brief reference-handbook for chemical writers] Kratkoe posobie  
avtora-khimika. Leningrad, Gos.in-t prikladnoi khimii, 1959.  
123 p. (MIRA 14:4)  
(Chemistry) (Technical writing)

25(6)

SOV/64-59-1-11/24

AUTHORS:

Vanyushina, Z. S., Vilesova, M. S., Shcherba, L. E.

TITLE:

Control of the Hydrogenation of Adiponitrile and of the Purification of Hexamethylenediamine by the Method of Infrared Spectroscopy (Kontrol' gidrirovaniya adiponitrila i ochildki geksametilendiamina metodom infrakrasney spektroskopii)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 1, pp 46-48 (USSR)

ABSTRACT:

At the Gosudarstvennyy institut prikladnoy khimii (State Institute of Applied Chemistry) an analytic method was developed which served the examination of the reaction mixture in the continuous hydrogenation of adiponitrile (I) (Ref 1) during the synthesis of hexamethylenediamine (II). This analysis takes, however, 2.5 - 3 hours. For a faster determination of the conversion of (I) in the hydrogenation the spectrometry by the  $-C\equiv N$  group is suggested for the present case. The purity of (II) is particularly important for the production of nylon. It is stated that a judgment of the purity of (II) by the freezing temperature is inadequate, and that a perfect judgement is only possible on the basis of an infrared spectrum analysis in which no absorption band

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SOV/64-59-1-11/24  
Control of the Hydrogenation of Adiponitrile and of the Purification of  
Hexamethylenediamine by the Method of Infrared Spectroscopy

of the  $-C\equiv N$  group may be observed and in which the groups NH and  $NH_2$  appear. It is recommended to carry out the rectification of raw (II) on a rectification column (under vacuum and in nitrogen atmosphere). From the fraction  $T_z = 40.0^\circ$  a control by the infrared spectrum by means of any spectrometer (e.g. IKS-11) should be carried out whereby the required rectification conditions can be established. 3 examples are given in which a column with an efficiency of about 15 theoretical bottoms in nitrogen atmosphere was applied. Results of examinations of the freezing temperature of the individual samples are indicated (Table). There are 1 table and 9 references, 1 of which is Soviet.

Card 2/2

VANYUSHKIN, V.P.

Technical and economic indices of progressive systems of a  
municipal power distribution network. Trudy LIEI no. 49:  
109-126 '63. (MIRA 17:6)

Dissertation: "The State and Prospect of Development of Agriculture in the Area of the Bezenchusk Irrigation System (Kuybyshev GES)." Cand Geog Sci, Moscow Oblast Pedagogical Inst, 29 May 54. Vechernyaya Moskva, Moscow, 20 May 54.

SO: SUM 284, 26 Nov 1954

VANYUSHKINA, Shura; SHKIRKO, MAYYA; MITYASHOVA, Valya

~~Spreading-habited trees. IUn. nat. no.5:9-10 My '58.~~

(MIRA 11:5)

1. Oblastnaya stantsiya yunnatov, Omsk.  
(Apple)



KASHEVAROVA, Yu.A.; VANYUSHKINA, V.I.

Rapid method for quantitative determining of hydroquinone in  
polyester acrylates. Lakokras. mat. i ikh prim. no.5:47 '63.  
(MIRA 16:11)

VAN ZEA, Bebok

GLASS

Temperature conductivity of molten glass. "Journal Society No. 8, 1951, 233-247. Stek. i ker. 9 no. 6, 1952.

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

YAKUBOV, V.I.; CHERMAK, L.L.; VANZHA, A.I.

Refractories made from the waste slag from nickel smelting. Tsement  
29 no.1:19 Ja-F '63. (MIRA 16:2)

1. Ural'skiy filial Akademii stroitel'stva i arkhitektury i Ypshno-  
Ural'skiy nikel'evyy kombinat.  
(Refractory materials) (Slag)

VANZHA, A.N.; MACHKOVSKIY, V.A.

New developments in research. Stal' 23 no.10:907 0 '63.  
(MIRA 16:11)

*VANZHA, N. S.* 131-1-9/14

AUTHORS: Gubko, I. F. , Kozinskiy, N. F. , Vanzha, N. S.

TITLE: On the Reinforcement of Fire-Clay Plates (Ob armirovani shamotnykh plit)

PERIODICAL: Ogneupory, 1958, Nr 1, pp. 39 - 40 (USSR)

ABSTRACT: In order to increase the flexural tensile strength of fire-clay plates, they are reinforced with steel wire. In the case of ordinary reinforcement fissures and cracks form in the fire-clay products. This takes place in the result of the difference of expansion of steel wire and fire clay on heating, as the coefficients of the linear thermal expansion of these two materials are very different from each other. It is possible to avoid this disadvantage by reinforcing the plates with short wires (100 - 150 mm) for in this case the tensions resulting from thermal expansions are uniformly distributed on the surface of the plate and the small fissures occurring exert practically no influence upon the strength of the plates. The scheme of such a reinforcement of plates is represented in the figure. Tests showed that the optimum diameter of the steel wire is 3 mm and that such reinforced fire-clay plates shall be dried and burned in a horizontal position, where piles of 3 - 4 plates with quartz sand strewn between them shall be used

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131-1-9/14

On the Reinforcement of Fire-Clay Plates

for burning. The burning was performed at 1200°C for 2 hours in a regenerating atmosphere, the plates being laid in muffles and covered by coke or charcoal. The consumption of steel only amounts to 4 - 5 % of the weight of the burnt plate. There is 1 figure.

ASSOCIATION: The Pervoural'sk Factory (Pervoural'skiy zavod)  
The Polytechnic Institute Kiev (Kiyevskiy politekhicheskiy institut)  
Chasov-Yarskiy zavod ognepornykh izdeliy  
(The Chasov-Yar Refractory Products Plant)

AVAILABLE: Library of Congress

1. Clay-Reinforcing methods

Card 2/2

VANZHURA, L.

Bernburg monoecious hemp. Priroda 45 no.8:99-101 Ag '56.  
(MIRA 9:9)

1. Institut rasteniyevodstva v Bernburge, Germanskaya Demokraticheskaya  
Respublika.

(Hemp)

JAKUBCOVA, I.; VANZUROVA, E.

Endocardial fibroelastosis in children. Cesk. pediat. 14 no.3:213-219  
5 Mar 59.

1. Katedry starostlivosti o dieta--vseobecny smer, Bratislava, pred-  
nosta doc. MUDr. I. Jakubcova.  
(ENDOCARDIAL FIBROELASTOSIS, in inf. & child  
(Cz))



SISKA, K.; SIMKOVIC, I.; VANZUROVA, E.; SCHNORRER, M.; SMRECANSKY, V.;  
HUBKA, M.; ONDROUGHOVA, D.

Postoperative complications and postoperative care of patients  
operated on with the use of extracorporeal circulation. Bratisl. lek.  
listy 42 no.9:523-535 '62.

1. Z II chir. kliniky Lek. fak. Univ. Komenskeho v Bratislave, pred-  
nosta clen koresp. CSAV K. Siska.

(HEART MECHANICAL) (HEART SURGERY compl)  
(POSTOPERATIVE CARE)

JAKUBCOVA, I.; VANZUROVA, E.

Septal defects of the heart in children and their indication for surgical treatment with extracorporeal circulation. Cas.lek.cesk 101 no.2:33-41 12 Ja '62.

1. I Detska klinika UK v Bratislave, prednostka doc. dr. I. Jakubcova.

(HEART SEPTUM abnorm) (HEART MECHANICAL)

35  
267

Brestlav, Bratislava Letavna Listy, Vol. 1, No 9, 1962  
Copyright by the Publishing House of the Slovak Academy  
of Sciences (Vydavateľstvo Slovenskej akadémie vied) 1962.

1. "Professor Vladislav RAJST, MD and Doctor of Sciences, in Surgery,"  
editorial; pp 521-522.
2. "Postoperative Complications and After-Treatment in Patients Having  
Operations on Aortic Valve Extracorporeal Circulation," by K.  
STRAKA, I. ERGUNYI, A. HANUSOVA, M. BENCURK, V. SOBEKANSKY, M.  
MUSKA and T. OBRADKOVIC, in: "Surgery Clinica at the Medical  
Faculty of Comenius University (II): chirurgická klinika Lekárskeho  
Fakulty Univerzity Komenského v Bratislave, headed by (graduate)  
K. SIKSA, corresponding member of the CSAV (Czechoslovakian Academic  
Ved) Czechoslovak Academy of Sciences; pp 543-555 (English summary).
3. "Controversial Problems in the Diagnosis of Bone Tumors and Similar  
Bone Affections," by J. CHRYMAREK--chief (graduate) and corresponding  
member of the SAV (Slovakian Academy of Sciences) (Slovak Academy of  
Sciences--and J. SVOJDA, of the Orthopedic Clinic (Orthopedická  
klinika) at the Medical Faculty of Comenius University (see No 2)  
in Bratislava; pp 545-548 (English summary).
4. "Traumatic Cerebrosus Placulus and Cerebral Vascular Placulus --  
Surgery Results in 55 Cases," by docent J. ZIVKA, MD, head of the  
Clinic of Pediatric and Brain Surgery (Dětská chirurgie) a podřevně  
chirurgie) at the Medical Faculty of Comenius University (see No  
2) in Bratislava; pp 548-556 (English summary).
5. "Non-Specific Ulcerations of the Small Intestines," by K. CASNY  
of the No. 1 Surgery Clinic at the Medical Faculty of Comenius  
University (see No 2) in Bratislava, headed by professor E. CASNY;  
No; pp 556-558.
6. "On the Problem of the Intraoperative Implantation of Autologous  
Intestine at the End of Increasing Myocardial Infarction," by E.  
MATEJKA of the Surgery Clinic at the Medical Faculty of P. J.  
Šafárik University (Chirurgická klinika Šafaříkovej fakulty Univerzity  
Šafaříkovej v Bratislave) in Bratislava; chief: professor J. ERGUNYI, MD;  
pp 559-569 (English summary).
7. "On the Problem of Indication to the Resection Treatment of Benign  
Alveolar Fibrosarcoma of the Lung," by M. KUMAR, O.  
KALAF, E. CHUMILNÝ, I. ERGUNYI and M. ČERNÝ, from the Insti-  
tute of Pathological Anatomy (Patologický ústav) of PU  
Univerzity Pavla Jozefa Šafaříka v Bratislave, headed by  
docent V. MALÝ, MD; the Surgery Clinic (Chirurgická klinika) of  
PU in Olomouc, headed by professor V. MALÝ, MD and doctor of

WAPZURAV, E.

CSSR

STEINER, J.; VANZUROVA, E.

First children's clinic of the Medical Faculty, Comenius University (I. dotska  
Klinika Lek.fak. Univ. Komenského); Bratislava, director: docent I.  
Jakubcova, MD

Bratislava, Bratislavsko Lekarske Listy, No 5, 1963, pp 288-293

"Primary Endocardial Fibroclastosis in a 10-Year-Old Child"

(2)

VAPCAROV, I.; SOLOV, K.; PIRONKOVA, M.; MINEVA, C.; VASSILEV, I.

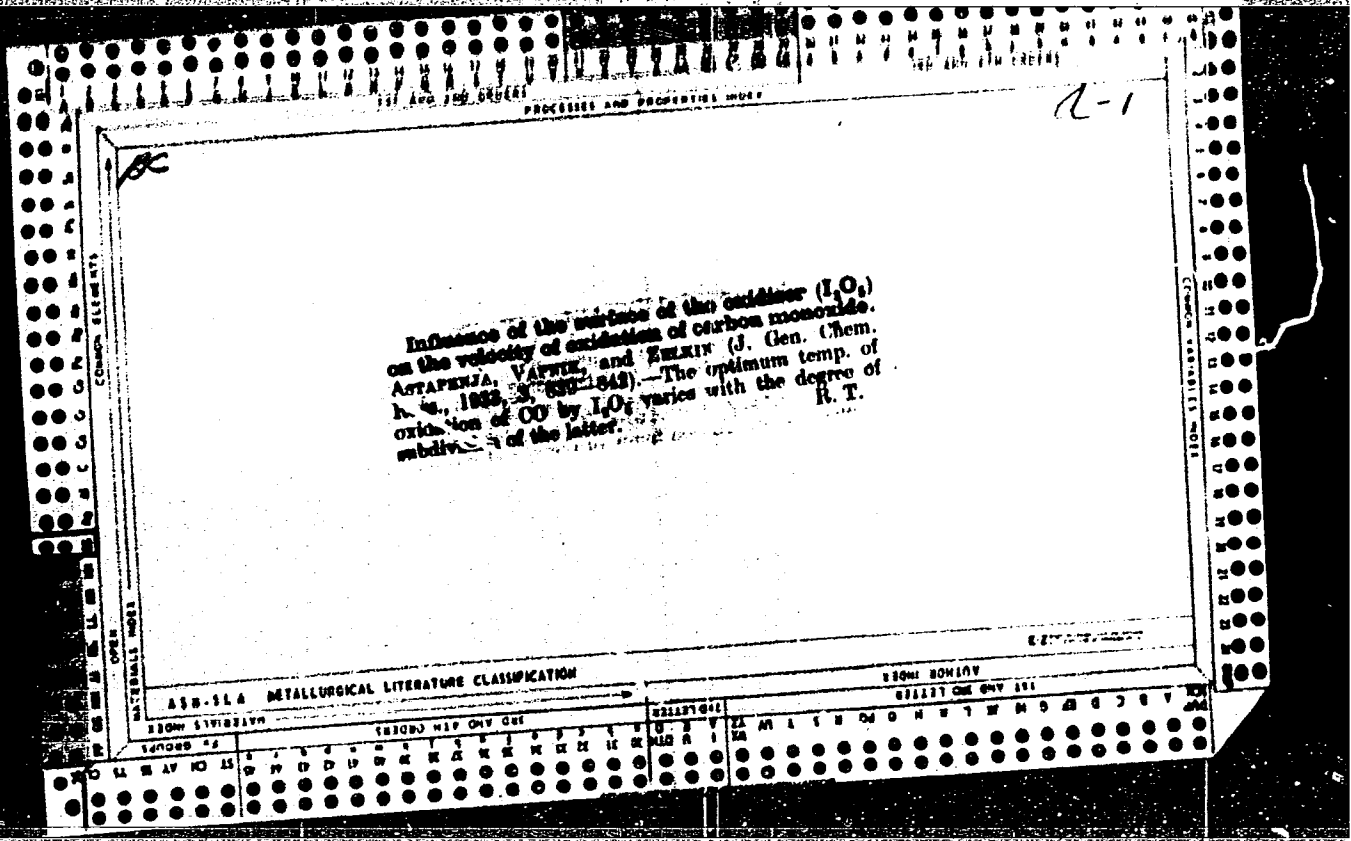
On the association of cytomegalic inclusion disease, pneumocystis Carinii pneumonia and endomyocardial fibroelastosis in an infant (based on the observation of a case). Folia med. (Plovdiv) 7 no.1:63-66 '65

1. Institut de Hautes Etudes Medicales "I.P.Pavlov" de Plovdiv, Bulgarie, Chaire de Maladies Infantiles (Directeur: prof. I. Andreev); Chaire d'Anatomie Pathologique (Directeur par interim.: prof. Ju. Tochev); Centre regional de Puericulture (Directrice. Cv. Mineva).

VAPNA, Yu.M.; VERNIKOV, Ya.N.; GEZIN, M.S.

Experiments in the use of aerosol pneumatic tube transportation  
in the "Kauchuk" plant. Kauch.i rez. 21 no.3:49-51 Mr '62.  
(MIRA 15:4)

1. Zavod "Kauchuk".  
(Rubber industry--Equipment and supplies)  
(Pneumatic-tube transportation)



EXCERPTA MEDICA Sec 17 Vol 5/6 Public Health June 59

1540. OUTBREAK OF TULARAEMIA IN THE REGION OF RIVER FLOODLANDS  
(Russian text) - Senchuk T. T., Vapnik E. E., Gikherman P. I.  
and Dyatlov F. G. - ZDRAVOOKHR. BELOR. 1957, 6 (70-72)

Investigation of tularaemia foci was made in a tour of populated areas. Diagnosis was confirmed by an intracutaneous test with tularin and by positive agglutination reaction with tularaemic antigen. The outbreak affected 28 populated areas, with 90.9% of cases showing the ulcero-glandular form, 6.1% the glandular, and 3% the angino-glandular form. Observation showed that mosquitoes and horse-flies, from the bodies of which the agent was isolated, play an important part in the spreading of tularaemia. In 2 cases the agent was isolated in field-mice. The community was vaccinated, and this caused a decrease in the number of cases.

(S)



VAPNIK, M.A.

Temperature measurement of calcium carbide poured from a furnace.  
Khim.prom. no.6:413-416 Je '61. (MIRA 14:6)

1. NIO po karbidu kal'tsiya Giprokauchuka.  
(Calcium carbide) (Temperature--Measurement)

VAPNIK, V.N.

82165

S/048/60/024/06/10/017  
B019/B067

9.3100

AUTHORS:

Vapnik, V. N., Gurvich, L. G., Zinov'yev, N. V.

TITLE:

On the Theory of Scattering of Ions on a Metal Surface

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya,  
1960, Vol. 24, No. 6, pp. 685-688

TEXT: This is the reproduction of a lecture delivered at the 9th All-Union Conference on Cathode Electronics from October 21 to 28, 1959 in Moscow. In the introduction, the theory suggested by O. Roos (Ref. 1) of secondary ion-induced ion emission is dealt with. Furthermore, the method developed by the Akademiya nauk UzSSR (Academy of Sciences. UzSSR) which allows a simultaneous observation and recording of all secondary processes taking place in the interaction of ions with the atoms of solids. To calculate the ion-induced ion emission of Roos, the Boltzmann equation was used. The use of Born's approximation to calculate the interaction cross section of ions and atoms in energy ranges where this is inadmissible is shown to be an essential shortcoming. Proceeding from solution (1) of the kinetic Boltzmann equation, the coefficient (8) of ion-induced ion emission

Card 1/2

XX

On the Theory of Scattering of Ions on a Metal  
Surface

82165  
S/048/60/024/06/10/017  
B019/B067

is calculated on the basis of data on the interaction cross section. It is concluded from the discussion of properties of this coefficient that either the cross section depends on the energy or the model for the motion of ions in a solid like in a gas cannot be used. It is found that the gas model cannot be used for energies in the range of bonding energies of atoms in the solid. For higher energy, however, the scattering cross section is bound to depend on the energy. It is found that the experimental data on the ion-induced ion emission do not allow to draw conclusions on the symmetry or the dependence on the energy of the interaction cross section. There are 2 figures, 1 table, and 7 references: 4 Soviet, 2 German, and 1 American.

LT

Card 2/2

VAPNIK, V. N., BORUKHOV, M. Yu.

"Radioisotope Gauges in Systems of Automatic Regulation"

paper presented at the All-Union Seminar on the Application of  
Radioactive Isotopes in Measurements and Instrument Building,  
Frunze (Kirgiz SSR), June 1961)

So: Atomnaya Energiya, Vol 11, No 5, Nov 61, pp 468-470

VAPNIK, V. N.; LERNER, A. Ya.

Principles of the identification of images. Izv. AN Uz.SSR.  
Ser. tekhn. nauk 6 no.5:97-98 '62.

(MIRA 15:10)

1. Institut avtomatiki i telemekhaniki AN SSSR.

(Electronic calculating machines)

L 10255-63  
GG/IJP(C)

EWT(d)/BXT/FCC(w)/BDS ASD/ESD-3/APGC Pg-4/Pk-4/Po-4/Pq-4

ACCESSION NR: AP3001088

S/0103/63/024/006/0774/0780

AUTHOR: Vapnik, V. N. (Moscow); Lerner, A. Ya. (Moscow)

74

TITLE: Image recognition by generalized portraits

SOURCE: <sup>160</sup>Automatika i telemekhanika, v. 24, no. 6, 1963, 774-780

TOPIC TAGS: image recognition, generalized portrait

ABSTRACT: An attempt to formalize the concepts involved in the image recognition is presented. The image can be determined by the objective characteristics of a set of investigated objects and by the individual characteristics of the investigating machine. This approach permitted introducing "generalized portrait", discernment, recognition, and threshold of recognition concepts. An axiomatic definition of the "pattern" is offered. By the methods of mathematical statistics, the algorithms of learning recognition and discernment have been developed; they are based on finding generalized portraits of patterns. The problem of a deformed pattern is considered. Orig. art. has: 3 figures and 20 formulas.

ASSOCIATION: none

SUBMITTED: 26Dec62

DATE ACQD: 01Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 002

OTHER: 001

Card 1/1

L 12249-63

FWT(m)/BDS ASD/AFFTC

S/271/63/000/004/021/045

AUTHOR: Borukhov, M. Yu. and Vapnik, V. N. 52

TITLE: Radioisotopic pickups in automatic control systems

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya  
no. 4, 1963, 53, abstract 4A336 (Vopr. sovrem. fiz. i matem.; Tashkent,  
ANUzSSR, 1962, 42-64)

TEXT: The question of using radioisotopic means of control and signalling in continuous regulation circuits is examined. Of great importance is the correct selection of the type of industrial regulator and its setting, to guarantee the maximum degree of stability (this topic concerns most of the article). Using mathematical tools, the authors investigate the following questions: regulators guaranteeing stability of the process; the special case of tuning a proportional-plus-integral controller in a system; the tuning of a system with such controllers; the choice of type of regulator and its tuning; the question of the existence of tunings for any values of time delay. The investigation of a number of the questions studied is accompanied by the solution of individual examples. It is indicated that the proposed method of choosing type and tuning of a regulator according to maximum degree of stability can be applied not only to systems consisting of a

Card 1/2

L 12249-63

S/271/63/000/004/021/045

Radioisotopic pickups in ....

single-capacity or integrating link, an inertial pickup and one of the regulated types of regulators; and also to any other systems. There are 9 illustrations and a bibliography of 5 items. P. M.

[Abstracter's note: Complete translation]

bm/aR  
Card 2/2



L 19737-65 EED-2/EWT(d)/T/EWP(1) Ph-L/De-L/DV-L/Da-L/D-L

19737-65: perception, pattern recognition 16 U

**ABSTRACT:** The suggested class of perceptrons essentially differs from other known classes by its principle of learning. The new principle of learning permits finding the weights  $\lambda_1, \dots, \lambda_n$  that divide patterns whenever they exist. The new

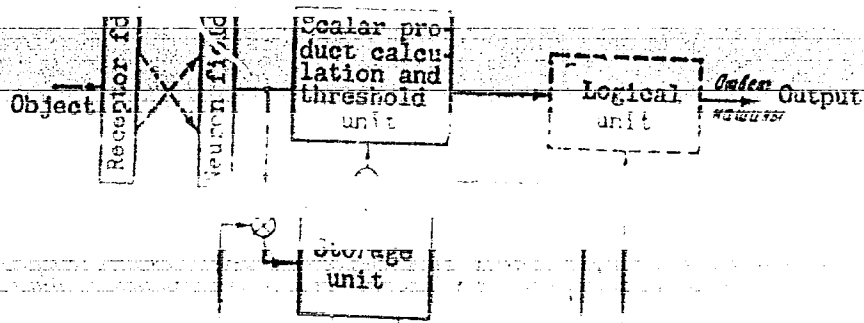
the generalized portrait is calculated by successive approximations. Each

**"APPROVED FOR RELEASE: 08/09/2001**

**CIA-RDP86-00513R001858610003-9**

**APPROVED FOR RELEASE: 08/09/2001**

**CIA-RDP86-00513R001858610003-9"**



TOPIC TAGS: pattern recognition

... is defined as consisting of these two parts:

as an automaton which the perceptron tries to imitate; a set of pictures in a receptor field is considered as a set of inputs. Reward signals serve as man's

S/0103/64/025/001/0112/0120

ACCESSION NR: AP4011321

AUTHOR: Vapnik, V. N. (Moscow); Chervonenkis, A. Ya. (Moscow)

TITLE: One class of perceptrons

SOURCE: Avtomatika i telemekhanika, v. 25, no. 1, 1964, 112-120

TOPIC TAGS: perceptron, perceptron learning, perceptron recognition, perceptron discrimination, pattern recognition

ABSTRACT: A new class of perceptrons which differs from that hitherto existing by its learning method is considered. In case of a wrong answer during the perceptron operation, the vector corresponding to an unrecognized pattern is fed to the storage unit and the learning unit and is used to correct the generalized portrait. This function as well as work coordination is performed by a control unit. The generalized portrait is calculated by successive approximations. An optimum approximation is determined and presented as a block diagram. Scalar

Card 1/2

ACCESSION NR: AP4011321

products of certain vectors  $k_{\alpha}$  form the input data for calculating the generalized portrait. The coefficients of expansion of the generalized portrait into these vectors serve as the output data. The machine is shown a few objects belonging to a definite pattern; each object produces a vector at the neuron-field output; these vectors are stored. The learning unit computes a matrix of scalar products of these vectors, and an approximation to the generalized portrait is found. Further learning of a given pattern goes with the learning of other patterns. The recognition and discrimination modes of operation are also briefly described. Orig. art. has: 3 figures and 40 formulas.

ASSOCIATION: none

SUBMITTED: 21Feb63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: CG, IE

NO REF SOV: 002

OTHER: 003

Card 2/2

BR

ACCESSION NR: AP4041468

S/0103/64/025/006/0937/0945

AUTHOR: Vapnik, V. N.; Chervonenkis, A. Ya. (Moscow)

TITLE: One class of algorithms for pattern-recognition learning

SOURCE: Avtomatika i telemekhanika, v. 25, no. 6, 1964, 937-945

TOPIC TAGS: pattern recognition, automaton, learning logic, pattern recognition learning

ABSTRACT: Two problems of recognition are formulated: (1) finding the pattern by the learning system and (2) synthesizing the learning system. A general formal scheme describing teacher and learner automata operations is presented. The length of the teaching sequence is evaluated for a particular case. General considerations regarding the problem of recognition in terms of generating and dichotomy-effecting automata are presented. Orig. art. has: 3 figures and 30 formulas.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: DP, IE

NO REF SOV: 003

OTHER: 000

Card 1/1



L 44804-01

ENIG//11550-0/0014/ 14-70771-1-101 (07 22, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100)

TITLE: Systems for teaching pattern recognition in areas of generalized portraits

160

1975 72-87

(a) recognition of Arabic numerals written in longhand and (b) recognition of

One-hundred and fifty

U 48804.65

ACCESSION NUMBER

potential, (c) natural gamma radiation, (d) capture gamma-radiation intensity

...

L 06558-67 EWP(k)/EWP(h)/EWT(d)/EWP(l)/EWP(v)

ACC NR: AP6916139

SOURCE CODE: UR/0103/66/000/005/0125/0135

AUTHOR: Vapnik, V. N. (Moscow); Chervonenkis, A. Ya. (Moscow)

ORG: none

TITLE: Teaching extremal simulation to automata. I

SOURCE: Avtomatika i telemekhanika, no. 5, 1966, 125-135

TOPIC TAGS: learning mechanism, self adaptive control, optimal control, extremal control

ABSTRACT: The problem is posed as follows: it is required to synthesize a converter  $A$ . Its operational quality is defined by criterion  $g_0(X,Y)$ , which depends on a pair of values  $X$  and  $Y$  at the input and output, respectively. Criterion  $g_0(X,Y)$  is unknown, but the class to which it belongs, is known. The operation of device  $A$  must be satisfactory in some sense with respect to this criterion. Theoretically, the problem can be solved by reduction of the function  $g_0(X,Y)$ , and by determination of the optimum transformation  $Y^* = Yg_0(X)$ . Since this is a very cumbersome way, another converter  $B$  is introduced. Nothing is known about  $B$ , except that its operation meets the sufficiency requirements. Thus, if we can develop device  $A$  such that it operates not worse than  $B$ , then such a device would be considered satisfactory. By observing the operation of device  $B$  it can be seen where the values of  $g_0(X,Y)$  are sufficiently high.

UDC: 621.391.193 : 518.5

Card 1/2

L 06558-67

ACC NR: AP6016139

This was done by approximation in two stages: the observation stage, and the training stage. The function  $g_0(X,Y)$  was reduced until such time that the true evaluation  $g_0(X,Y)$  and the approximated evaluation  $g_i(X,Y)$  became sufficiently close, both for observation and training. Thus, the operation quality of  $A$  will either approach or exceed the operation quality of  $B$ . Algorithms for this type of synthesis were developed and the number of required steps was estimated. The algorithm of synthesis was developed in the form of device  $O$ , which is said to be learning from device  $B$ . Orig. art. has: 17 formulas.

SUB CODE: 13,12/

SUBM DATE: 24Jun65/

ORIG REF: 001

Card 2/2 *mle*

L 4453-60 EWP(d)/EWP(1) UR(6) CG/DE

ACC NR: AP6021395

SOURCE CODE: UR/0103/86/000/006/0120/0132

AUTHOR: Vapnik, V. N. (Moscow); Chervonenkis, A. Ya. (Moscow)

ORG: none

TITLE: The <sup>160</sup>teaching of extremal imitation to an automaton. Part II

SOURCE: Avtomatika i telemekhanika, no. 6, 1966, 120-132

TOPIC TAGS: automaton, automatic machine teaching, algorithm, digital computer

ABSTRACT: In this paper, which is a continuation of a previous article (Obuchenlye avtomata ekstremal'noy imitatsii. I. Avtomatika i telemekhanika, No. 5, 1966), the problem of algorithms which can be used to teach automaton extremal imitation and which at the same time are suitable to development on digital computers is discussed. A method is considered for finding the maximum value of a function for a given system of interfaces. It is shown that if the number of these interface levels is sufficiently great, the required approximation can be achieved. Also analyzed is a class of functions  $G$  such that at a fixed  $X$  their level lines constitute first- or second-order convex surfaces. For these functions a restoration method is indicated which is based on a plotting of the level surfaces. Finally, an automaton is considered which is capable of being taught extremal imitation when  $g_0(X, Y) < G$  and which em-

Card 1/2

UDC: 621.391.193:518.5

44 B

L 41153-66

ACC NR: AP6021395

employs the methods described. An estimate of the teaching sequence for this automaton is made. The problem involves a converter B which represents input vector X and output vector Y. The estimating function  $g_0(X, Y)$  is given. A learning automaton  $\theta$  is to be built which will be capable of working no worse than converter  $\theta$ . It is assumed that the class of functions G, to which function  $g(X, Y)$  belongs is known a priori. In practice, this class is usually not known and some particular hypothesis is usually adopted with regard to it. It is shown that, instead of this procedure, it is possible to pose a hypothesis regarding a class of representations to which B(X) belongs and then to attempt to restore this representation. If the class consists of a finite number of converters, then by using a lemma derived and proved it can be demonstrated that any automaton which carries out an algorithm designed to select that specific converter which yields the same replies as B (full-memory algorithm) to all the input situations which have occurred in a past sequence of observations, is capable of learning extremal imitation, given an observation sequence length determined by a formula derived. No training is necessary. Orig. art. has: 8 formulas.

SUB CODE: 05,09/    SUBM DATE: 24Jun65/    ORIG REF: 004

Card 2/2 hs

L 37105-66 EWT(d)/T/EWP(1) IJP(c) GG/BB/JT/GD

ACC NR: AT6012885

SOURCE CODE: UR/0000/65/000/000/0047/0052

AUTHOR: Vapnik, V. N.; Chervonenkis, A. Ya.

ORG: None

54  
53  
B+1

TITLE: Certain principles for the synthesis of learning systems

SOURCE: Sistema chelovek i avtomat (Man-automaton systems). Moscow, Izd-vo Nauka, 1965, 47-52

TOPIC TAGS: bionics, pattern recognition, information theory, learning mechanism, psychology, algorithm

ABSTRACT: A system is studied consisting of a learning apparatus O, the object A, and the teacher Y. The teacher is not necessary for the general case. The learning apparatus O consists of two parts: O<sub>1</sub>, realizing certain behavior which is defined by an interaction algorithm, and O<sub>2</sub>, the second part which changes this behavior on the basis of the analysis of the given behavior. Part O<sub>1</sub> is characterized by the set {S<sub>k</sub>} of possible behavior which it can realize. For animate systems, this will be that set of behavior which can be taught to a man or an animal. Part O<sub>2</sub> is characterized by the law according to which it selects one of the possible behaviors of the set {S<sub>k</sub>} of part one. A formal system may be made more complicated by introducing several stages of teaching such as O<sub>1</sub>, O<sub>2</sub>, O<sub>3</sub>.  
Card 1/3

L 37105-66

ACC NR: AT6012885

Such a situation exists in teaching man. The following difficulties are discussed: those connected with a certain explicit hypothesis on type of equipment which will have to be simulated and those connected with the algorithm for setting up simulation equipment. The first statement is called a hypothesis about the world and the second about the method of cognition. Limitations are discussed which are related to the evolution of living organisms. The system discussed is applied to the problems of setting up systems which learn to recognize patterns. The evolutionary method of setting up learning systems for pattern recognition is discussed. Two cases are studied. It is proposed that the final goal is known from the beginning. This is termed single goal evolution. According to this, elementary recognition units are set up on the basis of a certain algorithm. The goal of evolution in the case under study is to simulate a given automaton. Instead of a single ultimate goal, a series of consecutively complex problems is introduced which form a system of subgoals and include the ultimate goal. An evolutionary system is a set of elementary automata at any given moment. Each of these automata is characterized by a set of points from which information is collected by a function which the system realizes. Changes in a system occur at discrete time intervals by means of ordering the systems of elementary automatons. Simple mutations are considered. Mutation laws should include transition probabilities. Elementary automata may be defined as those which do not differ functionally but differ in their transition probability. The laws governing the continuity of descent of these probabilities

Card 2/3



L 37105-66

ACC NR: AT6012885

can also be determined.

SUB CODE: 06 / SUBM DATE: 02Aug65

09/

*ne*  
Card 3/3

VAPNIK, Y. E. and SENCHUK, T. T.

"The Significance of Suctorial Arthropods as Vectors of Tuliaremia in the Natural Reservoirs of BSSR."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Institute of Epidemiology and Microbiology, Minsk

3(9)

AUTHOR:

Vapnyar, D. U.

SOV/50-59-7-3/20

TITLE:

Influence of Friction on the Movement of the Flood Tide Wave in a Canal With Constant Cross Section (Vliyaniye treniya na dvizheniye svobodnoy prilivnoy volny v kanale postoyannogo secheniya)

PERIODICAL:

Meteorologiya i gidrologiya, 1959, Nr 7, pp 21 - 25 (USSR)

ABSTRACT:

An attempt is made to clarify some characteristics of the influence of friction on the tides in shallow areas. To simplify the problem, the phenomenon is schematized, and the movement of the free flood tide wave in a rectangular canal with a depth  $H$  is investigated. With one of its ends, the canal is connected with the sea where the level variations take place according to the simple harmonic law, formula (1). Formula (16) is derived for the height of the wave spreading in the narrow canal with a constant cross section under consideration of the friction near the bottom. Formula (20) for the phase velocity of the wave, and formula (21) for the velocity of the tide current are derived. These 3 formulas show: 1) The reduction of the wave height caused by friction depends on the depth of the basin, the frictional coefficient, and the distance covered by the wave in the shallow water. 2) The influence of friction on the tide elements is

Card 1/2

*Influence of Friction on the Movement of the Flood Tide Wave SOV/50-59-7-3/20  
in a Canal With Constant Cross Section*

strong in depths below 100 m. At a depth of more than 100 m and not very large dimensions of the shallow water, the influence of the friction near the bottom can apparently be neglected. 3) Waves with short periods find a more intensive frictional resistance than waves with long periods. 4) The rise in level on the right-hand bank of the canal caused by the Coriolis force decreases under the influence of friction the more, the higher the frictional coefficient and the wider the canal are. 5) The phase velocity of the tide wave is inversely proportional to the frictional coefficient. There are 3 tables and 5 references, 3 of which are Soviet.

Card 2/2

VAPNYAR, D.U.

p2

PHASE I BOOK EXPLOITATION

SOV/4742

Moscow. Gosudarstvennyy okeanograficheskiy institut

Trudy. vvp. 53 (Transactions of the State Oceanographic Institute. No. 53)  
Moscow, Gidrometeoizdat, 1960. 114 p. Errata slip inserted.  
700 copies printed.

Sponsoring Agencies: Glavnoye upravleniye Gidrometeorologicheskoy sluzhby pri  
Sovete Ministrov SSSR; Gosudarstvennyy okeanograficheskiy institut.

Ed. (Title page): A.I. Duvanin; Ed. (Inside book): M.I. Sorokina; Tech. Ed.:  
I.M. Zarkh.

PURPOSE: This publication is intended for oceanographers, naval personnel, and  
engineers concerned with planning and designing naval constructions.

COVERAGE: This issue of the Transactions of the State Oceanographic Institute  
contains articles dealing with the spatial characteristics of tide phenomena  
and methods for precalculating tides according to astronomical parameters.  
Individual articles present the first results of investigations of the  
seasonal oscillation in sea level on the basis of data obtained during IGY.

Card 1/3

Transactions of the State Oceanographic Institute, No. 53

SOV/4742

The Foreword was written by A. Yushchak, Director of the State Oceanographic Institute. A.I. Duvanin supervised the work of D.U. Vapnyar, which was completed, as was the work of Ye. S. Selitskaya, in the Otdel urovnya i techeniy GOIN (Section of Sea Level and Currents, State Oceanographic Institute). The work of M.P. Vin'kov was carried out in the Vychislitel'nyy tsentr Mekhaniko-matematicheskogo fakulteta MGU (Computer Center of the Department of Mechanics and Mathematics, Moscow State University). The articles were prepared for publication by A.D. Perlovskaya. References follow each article.

TABLE OF CONTENTS:

Vapnyar, D.U. Influence of Friction on Tidal Phenomena in Shallow-Water Regions	5
Vin'kov, M.P. Compilation of Constant-Action Tide Tables on Perforator-Type Computers	59
Selitskaya, Ye. S. Problem of Seasonal Oscillation in the Level of the World Ocean	104

The author presents the results of investigations of the seasonal oscillation in sea level according to IGY and other data.

Card 2/3

Transactions of the State Oceanographic Institute, No. 53

SOV/4742

Determination of the harmonic constant of the solar annual wave ( $S_a$ ) and the solar semi-annual wave ( $S_{sa}$ ) was used as the basis of a method for investigating the seasonal oscillation in sea level. Analysis of harmonic constants suggests that the seasonal oscillation in sea level has common features at different points of similar circulation zones. Within the limits of those zones, the intra-annual changes in the seasonal oscillation of the sea level are analogous in all points. The author states that the analysis of the oscillation in steric sea level was based on limited data. With increased data, such an analysis should be helpful for the investigation of the dynamic processes of the oceans.

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