FISHER, L.I., dotsent (Saratov); VARSHAMOV, L.A., professor, direktor.

Autonomic changes in sleep therapy of hypertension. Klin.med. 31 no.9:67-70 S '53. (MLRA 6:11)

1. Fakul'tetskaya terapevticheskaya klinika lechebnogo fakul'teta Saratovskogo meditsinskogo instituta. (Hypertension) (Nervous system) (Sleep)

VARSHAMOV L. A.

EXCERPTA MEDICA Sec.18 Vol.1/9 Cardiovascular Sept 57

2672. VARSHAMOV L. A. et al. *Early diagnosis and therapy of hypertensive disease for the purpose of prophylaxis of coronary insufficiency (Russian text)* Sovetsk. Med. 1956, 9 (11—15)

This is a review article based on several observations from the author's clinic. One of the factors contributing to the development of coronary insufficiency is hypertensive disease, which is associated with spasm of the coronary arteries and development of coronary atherosclerosis. According to the data, out of 300 patients with coronary insufficiency, hypertension was present in 40% (70% had hypertension with atherosclerosis and 30% with functional spasm of coronary arteries). One of the author's coworkers (Markelova) found ECG evidence of coronary insufficiency after exercise in 1/3 of patients with early hypertension. Fischer noticed high irritability of the cerebral cortex in early hypertension, using the method of optic 'chronaxymetry'. Also, a cutaneous hyperreactivity was demonstrated in early hypertension. Ivanov noticed an increased peripheral vascular reactivity in early hypertension using oscillometry as a method of study. Lineikina stressed the appearance of an increased mean arterial pressure as a sign of early hypertension before elevation of systolic and diastolic pressures. Another sign of early hypertension consists of the disturbance of regional relation of blood flow as measured by the pressures in the arteries of the temple and the shoulder. Epifanova demonstrated early decrease in the content of blood phosphate and labile ATP stores in hypertension. All these data point out, according to the author, that early diagnosis of hypertension is possible. The author recommends treatment of this condition in order to prevent the development of coronary artery disease. The treatment should consist of general supportive

2672 CONT.

measures aimed at improvement of the tone of the nervous system. Therapeutic exercises, sanatorium regimen and balneological therapy are mentioned. Long periods of sleep induced by means of conditioned reflexes are claimed to be effective. The author urges his readers of the necessity of remembering the teachings of Marxism-Leninism about the interrelationships between the individual and his surroundings; this interrelationship stresses the important prophylactic value of the correct way of life, as well as of recreation homes, nightly sanatoria and vacation places. It is concluded that the contemporary understanding of the pathogenesis of hypertensive disease enables one to carry out effectively the prophylaxis of this disease. The conditions created by socialist regime in the author's homeland contain everything that is necessary for the rational solution of this great Soviet health problem (hypertension). Surawicz – Burlington, Vt.

VARSHAMOV, L. [A] (Dr.)

"Coronary Insufficiency,"

report presented at Fifth International Congress of Medicine, (Internal) Philadelphia Pa. April 24-26 1958

Chief Therapy Dept., Saratov Med Inst a Saratov USSR

VARSHAMOV, L.A., red.

[Pathology of the cardiovascular system] Patologiia serdechno-sosudistoi sistemy. Saratov, Saratovskoe knizhnoe izd-vo, 1959. 270 p. (MIRA 13:7)

(CARDIOVASCULAR SYSTEM--DISEASES)

BYREYEV, P.A., prof.; VARSHAMOV, L.A., prof.; VOLYNSKIY, B.G., dotsent; GERASIMOV, N.V., dotsent; GUREVICH, L.I., dotsent; ZHELYABOVSKIY, G.M., prof.; KARTASHOV, P.P., prof.; KOCHETOV, K.P., dotsent; KRUGLOV, A.N., prof.; KUTANIN, M.P., prof.; LARINA, V.S., dotsent; LOBKO, I.S., doktor [deceased]; LUKOVA, A.I., prof.; MAKHLIN, Ye.Yu., prof.; NAUMOV, A.I., kand.med.nauk; POPOV'YAN, I.M., prof.; SOLUN, N.S., kand.med.nauk; TARABUKHIN, M.M., dotsent; TRET'YAKOV, K.N., prof.; TRISHINA, A.A., kand.med.nauk; UL'YANOVA, A.V., dotsent; FAYN, A.E., kand.med.nauk; FAKTOROVICH, A.M., dotsent; FRANKFURT, A.I., prof.; FISHER, L.I., dotsent; CHASOVNIKOVA, Ye.P., kand.med. nauk; SHAMARIN, P.I., prof.; SHAPIRO, M.Ya., dotsent; SHVARTS, L.S., prof.; SHUSTERMAN, I.B., dotsent; FOY, A.M., prof.; FREYDMAN, S.L., kand.med.nauk; NIKITIN, B.A., dotsent, red.; AFANAS'YEV, I.A., red.; LUKASHEVICH, V., tekhn.red.

[Concise medical reference book] Kratkii terapevticheskii spravochnik. Izd.3., ispr. i dop. Saratov, Saratovskoe knizhnoe izd-vo, 1959. 919 p. (MIRA 13:7)

1. Chlen-korrespondent AMN SSSR (for Tret'yakov).
(MEDICINE--HANDBOOKS, MANUALS, ETC.)

VARSHAMOV, L.A., prof.

Engineer's work in the clinic. Biul. Uch. med. sov. 2 no.1:21-23 Ja-F '61; (MIRA 14:10)

(MEDICAL INSTRUMENTS AND APPARATUS)

ABRAMOV, M.G., doktor med. nauk; ALEKSEYEV, G.A., prof.; ASTAPENKO, M.G., prof.; BUREYKO, V.M., dots.; VARSHAMOV, L.A., prof.; VINOGRADSKIY, A.B., KARPOVA, G.D.; KASSIRSKIY, I.A., prof.; KUSHKIY, R.O., doktor med. nauk; LIBERMAN, B.I.; LIKHTSIYER, I.B., prof.; LUZHETSKAYA, T.A., kand. med. nauk; MOISEYEV, S.G., prof.; NASONOVA, V.A., dots.; NESGOVOROVA, L.I.; POROSHINA, I.I.; PREOBRAZHENSKIY, A.P., dots.; RADVIL', O.S., prof.; RATNER, M.Ya., doktor med. nauk; RASHEVSKAYA, A.M., prof.; SEMENDYAYEVA, M.N., kand. med. nauk; SIGIDIN, Ya.S., kand. med. nauk; ARTEM'YEV, S.G., red.

[Therapeutist's handbook] Spravochnik terapevta. Izd.2., ispr. i dop. Moskva, Meditsina, 1965. 863 p. (MIRA 18:6)

1. Deystvitel'nyy chlen AMN SSSR (for Kassirskiy).

AUTHOR: Varshamov, R.R.

TITLE: A-U Sci Conf dedicated to "Radio Day," Moscow, 20-25 May 1957. "Structure and Evaluation of the Quantity of Coded Signals with Correction of Errors."

PERIODICAL: Radiotekhnik i Elektronika, Vol. 2, No. 9, pp. 1221-1224, 1957, (USSR)

For abstract see L.G. Stolyarov.

20-5-2/54

AUTHOR: VARSHAMOV, R.R.

TITLE: Estimation of the Number of Signals in Codes With Correction of Errors (Otsenka chisla signalov v kodakh s korrektsiyey oshibok).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol.117, Nr 5, pp.739-741 (USSR)

ABSTRACT: The coding method given by Hamming [Ref.2] with the correction of an error is improved and generalized by the author. With the aid of the proposed method r errors can be corrected, whereby the sufficient conditions which are simultaneously applied as suppositions are weakened. The method is linear just like Hamming's method, i.e. if the informations b' and b" are transmitted by the signals a' and a" , then b' + b" is retransmitted by a' + a" . 1 Soviet and 1 foreign reference are quoted.

PRESENTED: By A.N. Kolmogorov, Academician, 10 June 1957

SUBMITTED: 10 June 1957

AVAILABLE: Library of Congress

Card 1/1

VARSHAMOV, R.R., Cand Phys Math Sci — (diss) "Problems in the general theory of linear coding." Mos, 1959, 10 pp (Mos Order of Lenin and Order of Labor Red Banner State Univ im M.V. Lomonosov) 150 copies. Bibliography at end of text (12 titles) (KL, 36-59, 111)

Varshamov, R. R.

Я. И. Хургин

Стационарные импульсные процессы в статистической радиофизике.

11 июня
(с 18 до 22 часов)

М. С. Александров

Распределение разности фаз колебаний в совокупности флюктуирующего сигнала, шума и коррелированной шумовой помехи.

В. С. Файнберг

Некоторые теоремы конструктивной теории информации для дискретного канала с нулевой памятью

О. С. Шилов

Определение вероятности потерь сообщений в транспортированных [illegible] с [illegible] потерями.

Р. Р. Варшамов

Некоторые вопросы теории линейного кодирования

12 июня
(с 10 до 16 часов)

Н. П. Бобров

Системы передачи дискретных сигналов с фазоразностной манипуляцией.

6

Н. М. Тезисов

Оптимальный прием сигналов с КИМ с конечным числом элементов пр[redacted]

Г. И. Рунин,
Г. М. Хазанов

Свет как канал передачи информации

Г. И. Рунин,
Г. М. Хазанов

О квантовых флюктуациях электромагнитного поля в связи с проблемой передачи и приема информации

А. А. Сычев

Некоторые соображения по алгоритму преобразования «ПАЛ КОД».

12 июня
(с 18 до 22 часов)

В. И. Маркин

Групповая передача элементарных сигналов и ее преимущества

Д. Д. Кловский

Вопросы потенциальной помехоустойчивости при искажениях сигнала.

7

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

S/058/61/000/004/031/042
A001/A101

69500

AUTHOR: Varshamov, R.R.

TITLE: On the method of linear coding with correction of errors in signals transmitted

PERIODICAL: Referativnyy zhurnal. Fizika, no 4, 1961, 375, abstract 4Zh306 ("Sb. tr. Nauchno-tekhn. o-vo radiotekhn. i elektrosvyazi im. A.S. Popova", 1959, no 3, 43 - 48)

TEXT: The author describes the main ideas of the linear coding method with a posible correction of $r \geqslant 1$ errors; the mathematical formalism of the Abel group theory is employed in the method.

[Abstracter's note: Complete translation.]

√B

Card 1/1

VARSHAMOV, R. R. and OSTIANU, V. M.

"Application of finite fields to synthesis of reliable switching structures"

report submitted for the Intl. Symposium on Relay Systems and Finite Automata Theory (IFAC), Moscow, 24 Sep-2 Oct 1962.

VARSHAMOV, R. R.; OSTIN, V. M.

"Application of the Theory of Finite Fields to the Synthesis of Relay Mechanisms Using Excess."

report presented at the Symp on Relay Systems Theory & Finite Automata, Moscow, 24 Sep-2 Oct 62.

VARSHAMOV, R.R. (U.S.S.R.)

Mathematical theory of the asymmetric coding system. Rev math Roum 10 no.2:165-169 '65.

1. Submitted June 3, 1964.

ACCESSION NR: AP4044823 S/0280/64/000/004/0053/0058

AUTHOR: Varshamov, R.R. (Moscow)

TITLE: Mathematical methods for increasing the reliability of real communications systems

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 4, 1964, 53-58

TOPIC TAGS: reliability, communication system reliability, system noise, coding, decoding, sampled data system, linear signal system, correcting code

ABSTRACT: A sampled-data communications system having a noise source with an arbitrary statistical structure is examined. The principal object investigated, shown in Fig. 1 of the Enclosure, is a general system transmitting signals along a single invariant channel. The signal and noise are assumed to be statistical in nature and it is also assumed that the coding and decoding devices operate perfectly. Thus, the only source of errors is the channel noise which corrupts the individual symbols of the transmitted signal. The purpose of coding is to decrease the effect of noise of a given character and intensity as much as possible. Commonly, the modern theory of coding investigates only signal systems having constant and independent channel distortions of the separate

Card 1/3

ACCESSION NR: AP4044823

symbols of the transmitted signal, since any deviation, however small, from this classical version highly complicates the analysis. The use of such an idealized mathematical model is limited. It is therefore of practical importance to solve the basic problem of coding for the broadest assumptions concerning the statistical structure of the noise sources and intelligence. This problem is solved for linear coding. The solution is used for the formulation of the necessary and sufficient condition for the existence of linear signal systems, used in conjunction with a binary correcting code, which are immune to a special type of noise represented by a sequence of units arising independently and at random in the channel. The mathematical formulation of the condition obtained can be used for constructing such codes. Orig. art. has: 47 formulas and 1 figure.

ASSOCIATION: none

SUBMITTED: 02Oct63 ENCL: 01 SUB CODE: DP

NO REF SOV: 002 OTHER: 002

Card 2/3

ACCESSION NR: AP4044823 ENCLOSURE: 01

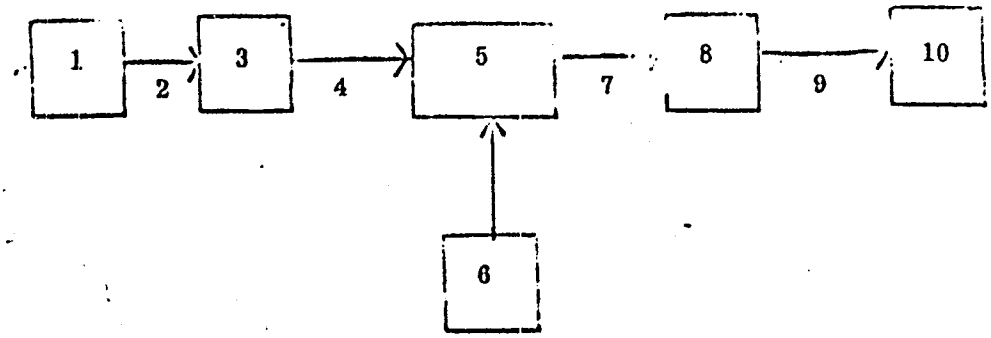

Fig. 1. Block diagram of a communications system.

Legend: 1. Source of communication; 2. Communication; 3. Coding device; 4. Signal; 5. Channel; 6. Noise source; 7. Corrupted signal; 8. Decoding device; 9. Communication; 10. Receiver.

Card 3/3

L 17551-65 ASD(a)-5/AFETR/ESD(dp)/ESD(t)

ACCESSION NR: AP5000154 S/0103/64/025/011/1628/1629

B

AUTHOR: Varshamov, R. R. (Moscow)

TITLE: Evaluating the number of signals in asymmetrical-error-correcting codes

SOURCE: Avtomatika i telemekhanika, v. 25, no. 11, 1964, 1628-1629

TOPIC TAGS: error correcting code

ABSTRACT: Coding systems with an asymmetrical binary channel (having different distortion probabilities for different pulses) are briefly considered. Values of n, r, and M are assessed which makes possible finding M signals immune to r asymmetrical errors out of N possible signals; a set of $N = 2^n$ sequences of the form: $x = (x_1, \ldots, x_n)$, where x_i takes on only two values, 0 and 1, is considered. Formulas for top and bottom evaluation of the maximum number of signals required for a code capable of correcting r asymmetrical errors are developed. Orig. art. has: 10 formulas.

ASSOCIATION: none

SUBMITTED: 07May64 ENCL: 00

SUB CODE: DP NO REF SOV: 001 OTHER: 000

Card 1/1

ACCESSION NR: AP4041394 S/0020/64/156/006/1308/1311

AUTHOR: Varshamov, R. R.; Kulebakin, V. S. (Academician)

TITLE: Concerning one theorem of the theory of polynomial reducibility

SOURCE: AN SSSR. Doklady*, v. 156, no. 6, 1964, 1308-1311

TOPIC TAGS: cybernetics, control theory, polynomial reducibility, Galois fields, irreducible polynomial

ABSTRACT: The theory of the reducibility of polynomials is essential in the modern theory of linear coding. One of its difficult and important problems is the synthesis of irreducible polynomials of a given degree. The present communication deals with this problem. Polynomials are considered with coefficients belonging to the Galois field. By using methods of the number theory, conditions are established for the divisibility of polynomials of a certain type by one another. A basic theorem is then proved from which four theorems of special cases of irreducible polynomials are derived. Orig. art. has: no figures, 6 equations.

ASSOCIATION: Institut avtomatiki i telemekhaniki (Institute of Automation and Telemechanics)

Card 1/2

ACCESSION NR: AP4042783 S/0020/64/157/003/0546/0548

AUTHOR: Varshamov, R. R.

TITLE: On some features of linear codes which correct asymmetrical errors

SOURCE: AN SSSR. Doklady*, v. 157, no. 3, 1964, 546-548

TOPIC TAGS: coding, error correction coding, cybernetics, automatic control theory

ABSTRACT: Coding with an asymmetrical discrete channel (defined as a channel with unequal probabilities of distortion of different elements of the message) has been less thoroughly investigated than with a symmetrical channel. The article is devoted to a rigorous mathematical formulation of the problem and to a proof that it is impossible to obtain new, stronger results if the widely used linear coding method is employed in the theory. The following are

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ACCESSION NR: AP4042783

proved: Lemma 1. To be able to correct r asymmetrical errors it is necessary and sufficient to have the pairwise distances between the used signals be not smaller than d = 2r + 1. Corollary: The norm of each nonzero element of a vector space immune to r asymmetrical error is not smaller than r + 1. Theorem: For any n-zero of the function

$$V_r(x) = \bar{m}_r(x) - \bar{m}_r(x - 2r) - 2r$$

there holds true the equality

$$G(n, r) = \bar{G}(n, r).$$

where G(n, r) is the aggregate of all possible subspaces of dimensionality $m_r(n)$ immune to r symmetrical errors, and $\bar{G}(n, r)$ is the aggregate of all subspaces of dimensionality $\bar{m}_r(n)$ immune to r asymmetrical errors. Orig. art. has: 7 formulas. Presented by Academician V. S. Kulebakin.

2/3

ACCESSION NR: AP4042783

ASSOCIATION: Institut avtomatiki i telemekhaniki (Institute of Automation and Telemechanics)

SUBMITTED: 26Feb64 ENCL: 00

SUB CODE: MA, DP NR REF SOV: 002 OTHER: 001

3/3

VARSHAMOV, R.R.

Some characteristics of linear codes correcting asymmetrical errors. Dokl. AN SSSR 157 no.3:546-548 Jl '64. (MIRA 17:7)

1. Institut avtomatiki i telemekaniki. Predstavlen akademikom V.S. Kulebakinym.

VARSHAMOV, R.R. (Moskva)

Mathematical methods for increasing the reliability of real communication systems. Izv. AN SSSR. Tekh. kib. no.4:53-58 Jl-Ag '64. (MIRA 17:12)

VARSHAMOV, R.R. (Moskva); MEGRELISHVILI, R.P. (Moskva)

Estimation of signal number in a class of correcting codes. Avtom. i telem. 25 no.7:1101-1103 Jl '64. (MIRA 17:12)

VARSHAMOV, R.R. (Moskva)

Estimation of the number of signals in codes with nonsymmetrical error correction. Avtom. i telem. 25 no.11:1628-1629 N '64
(MIRA 18:1)

L 41047-65 EED-2/EWT(d)/T/EWP(1) Pg-4/Pj-4/Pk-4/Pq-4 IJP(c) GG/BB
ACCESSION NR: AP5006279 S/0103/65/026/002/0288/0292

AUTHOR: Varshamov, R. R. (Moscow); Tenengol'ts, G. M. (Moscow)

TITLE: Code correcting single asymmetrical errors

SOURCE: Avtomatika i telemekhanika, v. 26, no. 2, 1965, 288-292

TOPIC TAGS: error correcting code, binary code

ABSTRACT: An asymmetrical — generally speaking, nonlinear — single-error-correcting binary code $W = \sum_{i=1}^{n} i\alpha_i \equiv a \pmod{n+1}$, (where α_i are binary numbers, "a" is an integer satisfying the condition $0 \leqslant a < n+1$) is considered whose capacity (number of signals) is greater than that of a corresponding maximum symmetrical code and also greater than the capacity of W. H. Kim and C. V. Freiman's code (IRE Trans., v. IT-5, no. 2, June 1959). Orig. art. has:

Card 1/2

L 41047-65
ACCESSION NR: AP5006279

9 formulas and 1 table.

ASSOCIATION: none

SUBMITTED: 28Sep63 ENCL: 00 SUB CODE: DP

NO REF SOV: 001 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858710002-9"

ACCESSION NR: AP5010567 UR/0020/65/161/003/0540/0543

AUTHOR: Varshamov, R. R. 16

TITLE: One arithmetical function applicable to the coding theory

SOURCE: AN SSSR. Doklady, v. 161, no. 3, 1965, 540-543

TOPIC TAGS: coding theory

ABSTRACT: The properties, including a method of recurrent evaluation, of this function: $K_{n,q}(z) = \sum_{\substack{a_1+2a_2+\ldots+na_n \equiv z \pmod{n+1} \\ 0 \leq a_i \text{ int.} < q}} 1$, are investigated. Also, conditions of zero value of the irregular function: $V_{n,q}(z) = K_{n,q}(z) - \max_{\xi} (K_{n,q}(\xi))$ are found. The K function is connected with the capacity of special efficient nonsymmetrical self-correcting codes. Orig. art. has: 35 formulas.

Card 1/2

L 57131-65
ACCESSION NR: AP5010567

ASSOCIATION: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, AN SSSR)

SUBMITTED: 10Jul64 ENCL: 00 SUB CODE: DP

NO REF SOV: 002 OTHER: 000

Card 2/2

L 5015-66 EWT(d)

ACC NR: AP5025853 UR/0020/65/164/004/0757/0760

AUTHOR: Varshamov, R. R.

TITLE: The theory of assymmetric codes

SOURCE: AN SSSR. Doklady, v. 164, no. 4, 1965, 757-760

TOPIC TAGS: error correcting code, coding communication coding

ABSTRACT: Recently, several researchers have studied the synthesis of codes used during transmission through assymmetric channels (W. H. Kin, C. V. Freiman, TRE Trans. Inform. Theory, 5, 2, 62, 1959; R R. Varshamov, DAN, 157, no. 3, 1964). However, in the theory of asymmetric codes nothing is known about the upper and lower limits of the maximum possible number of signals in error correction codes. Consequently, the present author 1) studies thoroughly the mathematical structure and characteristic peculiarities of asymmetric codes; and 2) establishes criteria for the lower and upper limits for the maximum possible number of signals in codes with asymmetric error correction. The paper presents this material in the form of definitions, one lemma, and the proof of two theorems. Presented by Academician AN SSSR V. S. Kulebakin. Orig. art. has: 18 formulas.

ASSOCIATION: Institut avtomatiki i telemekhaniki (Institute of automation and telemechanics)

SUBMITTED: 14Jan65 ENCL: 00 SUB CODE: DP, MA

NO REF SOV: 002 OTHER: 002

Card 1/1

09010215

ACC NR: AT6030869 SOURCE CODE: UR/0000/66/000/000/0117/0133

AUTHOR: Varshamov, R. R.

ORG: none

TITLE: Mathematical methods for increasing the reliability of information transmission through an asymmetric channel

SOURCE: Moscow. Institut avtomatiki i telemekhaniki. Abstraktnaya i strukturnaya teoriya releynykh ustroystv (Abstract and structural theory of relay devices). Moscow, Izd-vo Nauka, 1966, 117-133

TOPIC TAGS: error correcting code, encoding theory, error minimization

ABSTRACT: Ω-asymmetric distortions and the necessary and sufficient condition for the existence of codes capable of correcting rΩ-asymmetric errors are defined. Upper and lower limits are established for the maximum possible number of signals in a code with correction of repeated asymmetric distortions. The topological singularities of linear binary optimal asymmetric codes are investigated, and a theorem on the invariancy of the maximal subspaces with respect to the nature of distortion is proved. A new, most effective (among the known) class of asymmetric codes, immune to small distortions of the type +1, -1, is considered. Two arithmetic functions, useful in the encoding theory, are investigated. The asymmetric channel of communication is defined

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as one in which the probabilities of erroneous transmission of different symbols are unequal. As an example of an asymmetric transmission, a system can be cited, in which a threshold detector is used as the decision element. Signals with amplitudes below the threshold are not transmitted. The codes which are designed to correct this condition are called asymmetric. The present work is devoted to deepening the understanding of the mathematical structure and characteristic properties of asymmetric codes, to the investigation of general conformity of their internal structure, and to the establishment of the theoretical existence limits of the codes capable of correcting multiple asymmetric errors. The following specific topics are considered in detail: 1) Conditions for correction of asymmetric errors--*Lemma 1.* To correct $r\Omega(q)$-asymmetric errors it is necessary and sufficient that any $\theta \in GF(q)\Omega(\theta)$ is the distance between any two utilized $\Omega(\theta)$ mutually representative signals, x and y is greater than $d=2r+1$, i. e.,

$$\rho_\theta(x, y) \geqslant 2r + 1.$$

$GF(q)$ is a field containing the elements subject to asymmetric distortion. $\rho(x,y) = x-y$. θ is some value from the field $GF(q)$. *Lemma 2.* For a binary code to be capable of correcting r asymmetric errors, it is necessary and sufficient that for any different pair of utilized signals x and y, the condition

$$\bar{\rho}(x,y) \geq 2r + 1$$

be fulfilled. 2) Upper limit of the number of signals in codes with correction of (q)- asymmetric errors. *Theorem 1.* The maximum number of signals in any code correct-

ing r, $\Omega(q)$-asymmetric errors is

$$q^{(n+1)}\left(\sum_{V=0}^{q-1} S^{r}_{[(n\omega+v)\,q^{-1}],\,q}\right)^{-1},$$

where

$$S^{b}_{a,\,q}=\sum_{V=0}^{b}(q-1)^{V}C^{V}_{a},\quad C^{V}_{a}=\frac{a!}{V!\,(a-V)!},\ C^{V}_{a}=0\,(V>a).$$

3) Lower limit of signals in the same type of code. *Theorem 2.* The minimum number of signals in the best possible code correcting $r\Omega(\theta)$-asymmetric errors is

$$q^{n}\left(\sum_{l=1}^{r\,\mathrm{sig}\,(q-\omega)} L_{n,\,\omega}(l)+\sum_{V=0}^{r}\sum_{v=0}^{2r-V}(q-\omega)^{V}(\omega-1)^{v}\,c_{n}^{V+v}\right)^{-1},$$

where

$$L_{n,\,\omega}(l)=\sum_{V=0}^{r}\sum_{v=0}^{2r-V-l}\omega^{l}(q-\omega)^{V}(\omega-1)^{v}C^{l}_{n-\left[\frac{(n+1)\,(V+v)}{V+v+l}\right]}C^{V+v}_{\left[\frac{(n+1)\,(V+v)}{V+v+l}\right]};$$

is a "signum function", and conforms to the definition $0^{0}=1$. 4) Certain topological singularities of linear asymmetric codes. *Theorem* on invariancy of optical linear correcting codes with respect to the nature of distortion. *Lemma 3.* The norm of each ($x\neq\bar{0}$) element of a vector space immune to r asymmetric errors is greater than $r+1$.

Lemma 4. Two isometric and isomorphic vector spaces H and H' are immune to the identical number of asymmetric errors. *Theorem 3.* For each n-th zero of the function $V_r(x)$ there is an equality $G(n,r) = \overline{G}(n,r)$. 5) A class of asymmetrical codes immune to small distortions. 6) A method for synthesis of asymmetric codes for correction of small distortions. 7) Investigation of arithmetic functions related to the information theory. The functions are of the type $K_{n,q}(t) = \sum_{a_1+2a_2+\cdots+na_n \equiv t \pmod{n+1}} 1,$ $0<a_i<q$, a_i is an integer

Lemma 5. For any positive integers ρ; H, $\tau \mid q+1$ and

$$h(\delta, \rho, H, \tau) = (q+1)^{[\log_{q+1}(\delta-\rho)Hq]-[\log_{q+1}H]}$$

there is an identity

$$M_{\delta, q, h}(t) \equiv (q+1)^{\delta-1-\log_{q+1}h(\delta, \rho, H, \tau)}.$$

Lemma 6. For any values of $a_0, a_1, \ldots, a_{2p-1}$

$$I^{2p}_{\sigma, p, t}(a) \geqslant 0,$$

where

$$I^{n}_{\sigma, p, t}(a) = \sum_{i=0}^{n-1} \sum_{j=0}^{\sigma} a_i \left(a_{\sigma^n((i-pj)} - c_{\sigma^n((i-pj+1)}\right),$$

ACC NR: AT6030869

Theorem 4. For any integer n, satisfying condition

$$n = (q+1)^{[l]-\log_{q+1}H} - 1 \quad (H > 0),$$

the identity

$$K_{n,q}(t) = (q+1)^{n-\log_{q+1}(n+1)}$$

holds. *Theorem 5.* For any μ-th root of the equation $(q+1)^{\sigma} \equiv 0 \pmod{n+1}$ $(\sigma \geq 0)$ there is an equality

$$V_{n,q}(\mu) = 0.$$

Theorem 6. There is an asymptotic formula

$$K_{n,1}(0) \sim 2^{n-\log_2 n}.$$

Orig. art. has: 35 formulas.

SUB CODE: 12/ SUBM DATE: 06Jun65/ ORIG REF: 005/ OTH REF: 003

Card 5/5

ACC NR: AR7004287 SOURCE CODE: UR/0274/66/000/011/A010/A010

AUTHOR: Varshamov, R. R.

TITLE: Mathematical theory of asymmetrical codes

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 11A75

REF SOURCE: Sb. 2-ya Vses. konferentsiya po teorii kodir. i yeye prilozh. Sekts. 1. Ch.2., M., b. g., 39-51

TOPIC TAGS: error detecting code, error correcting code, error correction

ABSTRACT: The mathematical structure and general laws of internal structure of asymmetrical codes are explored; the codes are intended for detecting and correcting errors in transmission over an asymmetrical channel (that has unequal probabilities of fault for various elementary signals). Conditions of correction of asymmetrical errors are considered. Upper and lower limits of the number of elements in the codes correcting multiple asymmetrical errors are determined. Distinctive features of linear asymmetrical codes are analyzed; it is proven that nearly for any natural number n, the linear optimal code of a length n which is stable with respect to r asymmetrical errors, is also suitable for correcting r symmetrical errors. A class of asymmetrical codes stable to small distortion is considered. Bibliography of 2 titles. N.-S. [Translation of abstract]

SUB CODE: 12,09

Card 1/1 UDC: 621.391.1:621.391.7

VARSHAMOV, R.R.

Theory of nonsymmetrical codes. Dokl. AN SSSR 161 no.4:757-760 (MIRA 18:10)
Ap '65.

1. Institut avtomatiki i telemekhaniki. Submitted January 15, 1965.

DZHANAK'YAN, T.K., general-mayor meditsinskoy sluzhby;
VARSHAVOV, Yu.L., podpolkovnik meditsinskoy sluzhby

Primary reaction to irradiation; a review of the literature.
Voen. med. zhur. no.10:10-14 O '65. (MIRA 18:11)

L 27630-66 EWT(m)

ACC NR: AP6018367 SOURCE CODE: UR/0241/66/011/001/0012/0014

AUTHOR: Varshamov, Yu. L.

ORG: Military-Medical Order of Lenin Academy im. S. M. Kirov, Leningrad (Voyenno-meditsinskaya ordena Lenina akademiya)

TITLE: Mechanism of the origin of vomiting in the period of primary reaction to radiation

SOURCE: Meditsinskaya radiologiya, v. 11, no. 1, 1966, 12-14

TOPIC TAGS: dog, reflex activity, radiation biologic effect, drug effect, x ray irradiation, pharmacology

ABSTRACT: Results of the experiments which were carried out on dogs to determine the extent to which the central and reflex mechanisms participate in the origin of vomiting in the period of primary reaction to radiation, and the efficacy of aminazine when used as an antiemetic drug are reported in the article. In model experiments prior to the irradiation, vomiting was induced in the animals by the administration of apomorphine in a dose of 0.1 milligrams per kilogram body weight; the internal administration of copper sulfate in a dose of 10-15 milligrams per kilogram body weight; and the excitation of a skin loop on the external cervical section of the vagus nerve. In further tests the dogs were subjected to x-ray irradiation with doses of 250 and 500 r. Vomiting developed in the animals on the day after irradiation with 500 r. Aminazine, a

Card 1/2

UDC: 617-001.28-06:616.33-008.3-092

L 27650-66

ACC NR: AP6018367

pharmacological analyzer which in small doses selectively blocks the chemoreceptor of the trigger zone and makes it possible to determine the mechanism of vomiting was administered to the animals. The drug in a dose of three milligrams per kilogram body weight arrested the initial vomiting and prevented the onset of further attacks. Doses of 250 r induced vomiting only in combination with apomophine, a drug which causes a central type of vomiting. The experiments established that aminazine arrests apomophine-induced vomiting, but does not prevent reflex vomiting induced by copper sulfate and the excitation of the skin loop, an indication that aminazine acts as a central antiemetic; the successful application of aminazine in primary reaction to radiation points to the central mechanism of the origin of vomiting; the development of vomiting as a result of the combined action of a radiation dose of 250 r and apomophine also indicates the central mechanism of the origin of vomiting in primary reaction to radiation. [JPRS]

SUB CODE: 06 / SUBM DATE: 23Mar64 / ORIG REF: 006 / OTH REF: 010

Card 2/2

VARSHAV, N. A.

USSR/Chemistry Crystallization

Card : 1/1

Authors : Nefedov, V. D., and Varshav, N. A.

Title : Investigation of isomorphous co-crystallization of tetraphenyl derivatives of Pb, Sn and Si

Periodical : Zhur. fiz. khim. 28, Ed. 6, 981 - 984, June 1954

Abstract : The applicability of the V. G. Khlopin law to systems in which metal-organic compounds (phenyl derivatives) of Pb, Sn, and Si serve as macro- and micro-components, was investigated. Roentgenographic data are presented on the isomorphism for tetraphenyl-Pb, Sn and Si derivatives with an explanation of the isomorphic problem. The determination of the value of fractionation coefficients, for above mentioned systems, by the application of the isomorphic co-crystallization method, is described. Four USSR references. Tables.

Institution : ....

Submitted : November 29, 1952

VARSHAVA, Boris Efimovich, 1900-1927.

A dictionary on psychology. Moskva, Gos. uchebno-pedagog. izd-vo, 1931. 206 p.
(51-54079)

BF31.V3

1. Psychology - Dictionaries - Russian.
I. Vygotskii, Lev Semenovich, 1896-1934, jt. au.

VARSHAVCHIK, I.I., inzh.

Static calculating models of electric systems. Elek.sta. 31 no.2:52-56 F '60. (MIRA 13:5)
(Electric networks--Electromechanical analogies)

VARSHAVER, A.

ROZHDESTVENSKAYA, Z.; VARSHAVER, A.

Bank control over distribution costs in trade. Den. i kred.12 no.4:44-45 0'54. (MLRA 8:2)
(Marketing--Costs) (Banks and banking)

AUTHOR: Varshaver, B.A.

TITLE : A-U Sci Conf dedicated to "Radio Day," Moscow 20-25 May 1957. "Theory of Carrying Capacity in Binary Transmission,"

PERIODICAL: Radiotekhnika i Elektroniaka, Vol. 2, No. 9, pp. 1221-1224, 1957, (USSR)

For abstract see L.G. Stolyarov.

VARSHAVER, B.A.

Theory of the transmission of discrete signals with fluctuation noises. Trudy MEI no.29:272-292 '57. (MIRA 13:3)
(Information theory)

VARSHAVER, B. A., Cand Tech Sci -- (diss) "Certain ~~theoretical~~ problems of the theory ~~questions~~ of the transmission of discrete signals during fluctuating interferences." Mos, 1958, 15 pp. (Min Higher Ed USSR, Mos Order of Lenin Power Eng Inst), 100 copies. (KL 9-58, 117)

VARSHAVER, B.A.

Traffic capacity in the transmission of signals with several discrete values. Nauch.dokl.vys.shkoly; radiotekh. i elektron. no.1:46-50 '58. (MIRA 12:1)

1. Kafedra radiopriyemnykh ustroystv Moskovskogo energeticheskogo instituta.

(Information theory)

VARSHAVER, B.A.

Calculation of error probabilities in decoding; one representation of the binomial law of distribution of probabilities. Nauch.dokl.vys.shkoly; radiotekh. i elektron.no.1:51-53 '58. (MIRA 12:1)

1. Kafedra radiopriyemnykh ustroystv Moskovskogo energeticheskogo instituta.
(Information theory)

89559

S/044/60/000/008/031/035
C111/C222

6.9000
16.6100

AUTHOR: Varshaver, B.A.

TITLE: On the theory of the receiver being ideal in the sense of Kotel'nikov

PERIODICAL: Referativnyy zhurnal. Matematika, no.8, 1960, 178-179, abstract no. 9332. Sb. tr. Nauchno-tekhn. o-va radiotekhn. i elektrosvyazi im. A.S.Popova, 1958, no.2, 20-34

TEXT: Let $\xi = (\xi_1, \ldots, \xi_n)$ be an n-dimensional random vector the probability density $p_n(x)$ of which is $x = (x_1, \ldots, x_n)$. If the components ξ are independent, normally distributed, and if they have the mean value 0 and the same dispersion then from the inequality $\sum_{i=1}^{n} x_i^2 > \sum_{i=1}^{n} y_i^2$ there evidently follows the inequality $p_n(x) < p_n(y)$ and reversely. In the theory of the stability of disturbance of V.A.Kotel'nikov, where the vector ξ plays the part of the vector of distrubance, this fact is interpreted as follows: Among two realizations of the disturbance that one is more probable which has a smaller square of the "length" (smaller intensity). The author tries to prove the latter

Card 1/2

AUTHOR: Varshaver, B. A. 108-1-1/10

TITLE: On the Theory of the Transmission Capacity in Binary Transmission (K teorii propusknoy sposobnosti pri binarnoy peredache)

PERIODICAL: Radiotekhnika, 1958, Vol. 13, Nr 1, pp. 11-21 (USSR)

ABSTRACT: Based on the general relations obtained by K. Ye. Shennon and the theory of potential disturbance stability by V. A. Kotel'nikov the author here determines the transmission capacity in binary channels with various ways of modulation and individual elementary reception of the transmitted series. The problem of the transmission when the reception of the series does not take place individually but as a whole will be dealt with in another work by the same author. For the classification of the concrete transmission channels the set up of the problem by Shennon must be somehow altered. Different from Shennon the greatest velocity of transmission is not only wanted in all signal sources but also in all receivers which according to Kotel'nikov are close to an ideal operation. Formulae and diagrams are

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given. These offer the possibility to compare the transmission with various ways of modulation and under the assumption of an individual elementary reception of the transmitted series for the case of a limitation by the mean capacity, the peak capacity and the band. In a transmission with an active interval the best utilization of mean and peak capacity is reached at a probability of the transmission $p \to 0,5$ and with equal apriori probabilities of the transmission of elementary signals. The limit for

$$\frac{C}{P_c / \sigma_y^2}$$

for a phase modulation and a bipolar d. c. pulse modulation is $\frac{2}{\pi \ln 2}$, and for a time pulse- and frequency modulation it is $\frac{2}{\pi \ln 2}$. C denoting the trans-

On the Theory of the Transmission Capacity in Binary Transmission

mission of binary units per second, P_c denoting the mean power of the signal, σ_y denoting the specific noise.

The best utilization of the band takes place at $p \to 0$. It is shown that it is impossible to reach simultaneously a great utilization of the capacity and of the band.

In the case of a transmission with a passive interval the best utilization of the mean capacity takes place at $P \to 0$, $P' \to 0$ and $\tau \to 0$. P denoting the apriori probability of the source, τ denoting the duration of the elementary signal.

In this case it is principally possible to approach the value of the absolute limit

$$\frac{1}{\ln 2}$$

arbitrarely close. Therefore the greatest velocity of transmission can be reached in binary transmission with passive interval and elementary individual reception in the case of a limitation by the mean capacity. This is the one which, according to Shannon, is obtained in a system with a signal

On the Theory of the Transmission Capacity in Binary Transmission

group of the white noise type.
The conditions for the best utilization of the optimum capacity and the channel frequency for the case of a modulation with passive interval are the same as with a modulation with active interval. There are 7 figures, 1 table, and 2 references, 1 of which is Slavic.

SUBMITTED: May 27, 1957

AVAILABLE: Library of Congress

1. Radio transmission-Theory 2. Phase modulation 3. Pulse modulation

VARSHAVER, B. A.

Я. Я. [illegible]

Метод развязки [illegible] связей без изменения конфигурации и числа элементов схемы

В. Ф. [illegible]

Широкополосные [illegible] с [illegible] параметрами.

А. А. [illegible]

Расчет колебательной системы пластинчатого электромеханического фильтра

Р. Г. [illegible]

Расчет магнитного сопротивления пластинчатого магнитопровода.

12 июня
(с 10 до 16 часов)

С. И. [illegible]
Н. С. Степанов

Распространение волн в системах с [illegible] параметрами

А. Я. Фельдштейн,
Я. Р. [illegible]

Опыт и перспективы автоматизации некоторых измерений СВЧ тракта

В. В. [illegible]

Общая теория запуска [illegible] [illegible]

А. Г. Константиновский

Вопрос повышения стабильности режима деления частоты [illegible] релаксационных генераторов

12 июня
(с 18 до 22 часов)

Я. В. [illegible]

Практическая система электромагнитных единиц, однородная с гауссовой

Я. Т. Ким

Воздействие суммы синусоидальных колебаний на нелинейное сопротивление.

В. А. Варшавер

К аппроксимации характеристик нелинейных элементов радиотехнических устройств.

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

S/058/61/000/004/032/042
A001/A101

6.9500

AUTHOR: Varshaver, B.A.

TITLE: The comparison of uniform codes in binary transmission

PERIODICAL: Referativnyy zhurnal. Fizika, no 4, 1961, 375, abstract 4Zh307 ("Sb. tr. Nauchno-tekhn. o-vo radiotekhn. i elektrosvyazi im. A.S. Popova", 1959, no 3, 49 - 58)

TEXT: The author compares the codes: conventional uniform code, code with repetitions and correcting code, as to transmission speed and noise suppressing abilities. The concept of generalized transmission speed is introduced. Formulae and graphs are presented which permit determination of maximum transmission speed and noise suppressing ability when codes of various complicacy are used.

[Abstracter's note: Complete translation.]

√B

Card 1/1

VARSHAVER, B.A.

Transmission theory of signals with several discrete values. Radiotekhnika 14 no.1:3-13 Ja '59. (MIRA 12:2)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi im. A.S.Popova.
(Information theory)

86647

16.9500 (1031, 1132, 1222)
6.7800 (also 1067)

S/119/60/000/011/003/009
B012/B054

AUTHORS: Varshaver, B. A. and Gerasimov, V. G.

TITLE: The Use of a Capacitive Transmitter to Control Geometrical Dimensions

PERIODICAL: Priborostroyeniye, 1960, No. 11, pp. 6 - 8

TEXT: The present paper studies a capacitive transmitter to control the diameters of conductive cylindrical bodies. For the control of cylinder diameters, it is most convenient to give the transmitter the form of a cylindrical capacitor. The body to be controlled plays the role of the cylindrical internal electrode. The error of diameter measurement primarily depends on how far it is possible to center the internal cylinder (the body to be controlled) (Fig. 1). To estimate the resolving power of the capacitive transmitter, the authors investigate the dependence of the capacity of the cylindrical capacitor both on the change in diameter and on the shift of the internal-cylinder center with respect to the external-cylinder center. They derive formulas for the relation between the increase in capacity ΔC of the cylindrical capacitor and the change in diameter Δd

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The Use of a Capacitive Transmitter to Control Geometrical Dimensions

S/119/60/000/011/003/009
B012/B054

(d is the internal-cylinder diameter), as well as for the relation between ΔC and the shift b. Fig. 2 shows the relation (calculated from these formulas) $\Delta C/C_0$ in % of m at q = 0.1 and q = 0.2 in the form of a diagram. $m = d/D$, $q = \frac{b}{D/2}$, and C_0 is the capacity of the cylindrical capacitor. This diagram shows that the effect of b must be considered for a capacitive transmitter. At $m < 0.3$, $\Delta C/C_0$ is approximately constant. At $m > 0.3$, the effect of the shift increases. The most frequent values of m lie between 0.05 and 0.3. The sensitivity of the capacitive transmitter is estimated from the relative shift $\Delta f/f_0$ of the resonant frequency of the oscillation circuit (per unit deviation of the diameter to be controlled). The authors use a formula from the paper (Ref. 5): $\Delta C/C_0 \approx 2\Delta f/f_0$, where $C = C_0 + C^*$, and C^* is the capacity acting in parallel to C_0. It is shown that the sensitivity is the higher, the smaller C^* becomes. The resonant frequency of the oscillation circuit is to be selected sufficiently high. The authors recommend $f_0 > (2 \div 3)$ megacycles per second. Finally, they derive

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The Use of a Capacitive Transmitter to Control Geometrical Dimensions

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B012/B054

the principal formula for calculations:

$$l \approx 1.8 \frac{C^*}{Q} \cdot \frac{\ln n \nu \cdot \ln n}{\ln n \nu - \ln n}$$

$$Q = f_0/\Delta f_0 \ , \ \nu = d_{max}/d_{min} \ , \ n = D/d_{max} \ .$$

This formula indicates the relationship between the geometrical dimensions of the transmitter and the oscillation-circuit data, the capacity of the transmitter being an element of this oscillation circuit. The authors give recommendations for the use of this formula. There are 2 figures and 5 Soviet references.

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S/119/60/000/011/003/009
B012/B054

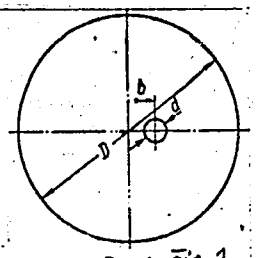

Рис. 1. Fig. 1

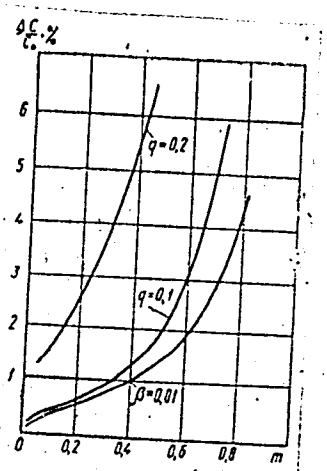

Рис. 2. Fig. 2

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A055/A033

9,3271

AUTHOR: Varshaver, B. A.

TITLE: Approximation of Characteristics of Non-Linear Elements of Radiotechnical Systems

PERIODICAL: Elektrosvyaz', 1960, No. 12, pp. 75-76

TEXT: In a number of cases, actual characteristics of non-linear elements are represented approximately by a broken line forming one or several angles. Thus, the characteristic of the usual amplitude detector is represented approximately by the equations:

$$i = Su \quad (u>0)$$
$$i = 0 \quad (u\leq 0) \qquad (1)$$

where S is the steepness of the detector's characteristic. Such an approximation, however, leads sometimes to complicated calculations and cumbrous designs, and it is not always possible to reach a satisfactory solution. It seems useful, therefore, to work out a method allowing to replace the approximate function represented by straight lines forming angles by a continuous

Card 1/2

S/106/60/000/012/009/009
A055/A033

Approximation of Characteristics of Non-Linear Elements of Radiotechnical Systems

function presenting no angles. The author of the present article describes such a method. Resorting to a comprehensive methematical reasoning and, namely, to auxiliary continuous functions of the type $\varphi(\alpha u)$ where α is a constant coefficient, he shows how the equations (1) can be replaced by an approximate continuous function, for instance by the function :

$$i = \frac{Su}{1-e^{-\frac{S}{I_0}u}} \quad (8)$$

which represents, with sufficient fidelity, the actual characteristic of the amplitude detector for any value of u. He then applies this method to the cases of non-linear elements with an approximate broken line characteristic containing more than one angle, namely two angles and any number (n) of angles. Approximate continuous functions presenting no angles are developed by him for either of these two cases, the obtained formula being a general formula in the latter case. There are 2 figures.

4f

Card 2/2

33787
S/108/62/017/002/002/010
D201/D305

6.9000

AUTHOR: Varshaver, B.A., Member of the Society (see Asscciation)

TITLE: Comparison of discrete signal reception methods

PERIODICAL: Radiotekhnika, v. 17, no. 2, 1962, 10 - 14

TEXT: The author attempts to compare, on the basis of the theory of the potential interference-killing and of information theories, the speeds of information transmission through a channel for two particular cases: a) The code combination is received by the idealized Kotel'nikov receiver "in the whole" (Ref. 1: Teoriya potentsial'noy pomekho ustoychivosti (Theory of Potential Interference-Killing Properties) Gosenergoizdat, 1956); b) The code combination is received by the idealized Kotel'nikov receiver but in sequence by its component elements. No work, in which numerical analysis of the two methods of reception has been made is known to the author and the comparison is made for one particular case of transmission of a four digit (n = 4) ternary code (m = 3), correcting a single

Card 1/3

Comparison of discrete signal ...

error ($\triangle = 1$). All signals represented by code combinations are assumed to be equally probable. In making the comparison the author uses the results obtained by him earlier (Ref. 2: NDVSh. Radiotekhnika i elektronika, no. 1, 1958; Ref. 3: Radiotekhnika, v. 14, no. 1, 1959). The results of the analysis are given in a figure, showing the graphs of the generalized speed of transmission with limited average power $\frac{R}{P_s/k_s\ \sigma_n^2}$ against the probability of decoding error P_{er}. R - the speed fo binary digit transmission; P_s - the average power of signal; k_s - a coefficient depending on the method of modulation: for frequency and time-pulse modulation $k_s = 1$. The graphs show that the generalized transmission speed for the reception "in the whole" exceeds by approximately 40 % that of the reception element by element, so that a relatively considerable increase in the interference-killing properties of reception may be achieved by a comparatively small decrease in the speed of transmission. There are 1 figure and 6 Soviet-bloc references.

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33787
S/108/62/017/002/002/010
D201/D305

Comparison of discrete signal ...

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A.S. Popov) [Abstractor's note: Name of Association taken from first page of journal]

SUBMITTED: May 10, 1961

Card 3/3

VARSHAVER, B.G.

USSR

77.01 : 77.021.11

Some Similarities and Differences in the Processes Involved In Photolysis and Second Ripening of Photographic Emulsions. A. A. Trov and B. G. Varshaver. *Dokl. Akad. Nauk SSSR.*, 1953, 91, 111-114.—Characteristic curves are obtained for layers of diluted emulsions, only one grain thick, after various periods of second ripening, and from them are deduced the "photolytically equivalent ripenings" $\Delta H/\Delta\tau$, where ΔH = period of additional exposure producing the same effect as an additional period of ripening $\Delta\tau$. The variations of this quantity with the photographic density of the developed single grain layer indicate that in second ripening, the grains are mainly surface sensitized, whereas in photolysis, sensitization may occur equally on the surface and in the interior of a grain. *J. Appl. Chem.*

62
1

All-Union Sci. Res. Cine-Photo Inst.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Photography

The unique nature of sensitization and desensitization of photographic emulsions. K. V. Chibisov, A. A. Mikhailova, and B. G. Varshaver. *Doklady Akad. Nauk S.S.S.R.* 88, 519-22. The authors demonstrate the difference between oxidizing agents (I), desensitizers (II), and antifoggants (III). I (dichromate, persulfate) decrease light sensitivity and remove nonhalide Ag and fog. II and III decrease light sensitivity, but do not change the nonhalide Ag content. II (pinacryptol, pinacryptol white, phenosafranine, cystine) in the emulsion do not impede fog formation nor do they influence development rate when added to the developer. III (benzotriazole, mercaptobenzimidazole, [illegible] 2-naphthotriazole, adenine, cysteine) in the emulsion prevent fog formation and in the developer decrease development rate. G. Kornfeld

[illegible], [illegible], TI[illegible], [illegible], and [illegible], [illegible]

"On the formation and the role of the active centres in the photographic process," a paper submitted at the International Conference of Scientific Photography, Cologne, FRG, 24-27 Sep 56.

VARSHAVER, B.G.

VARSHAVER, B.G.; KRAUSH, L.Ya.; CHIBISOV, K.V.

Spectral sensitivity of nonsensitized photographic emulsions. Zhur.nauch.i prikl.fot.i kin. 2 no.6:413-420 N-D '57. (MIRA 10:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy kino-fotoinstitut i Kafedra uchebnoy i nauchnoy fotografii i kinematografii Moskovskogo gosudarstvennogo universiteta.
(Photographic sensitometry)

SOV/20-126-5-30/69

5(4), 23(5)
AUTHORS: Varshaver, B. G., Broun, Zh. L., Chibisov, K. V., Corresponding Member, AS USSR

TITLE: On the Spectral Properties of Optically Non-sensitized Photographic Emulsions (O spektral'nykh svoystvakh opticheski nesensibilizirovannykh fotograficheskikh emul'siy)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 5, pp 1021-1024 (USSR)

ABSTRACT: On the basis of papers (Refs 1-3) according to which silver bromide is not only sensitive to rays of its own absorption spectrum but also to rays with longer waves, the conclusion is drawn that in this connection local disturbances in the microcrystals caused by impurities play a part. The change in the light sensitivity of the emulsion must be in connection with the absorption spectrum of the impurities. These spectra were, therefore, taken by means of the spectrophotometer SF-4 and a spectrographic apparatus by Ye. A. Kirillov (Fig 1). The relation between the absorption by impurities and light sensitivity was studied by comparing the isochromatic curves, which show the dependence of the absorption by impurities on the time for

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ripening of the emulsion for different λ, with the kinetic curves of the total light sensitivity (Figs 2,3). The fine structure of the absorption spectra indicates that the crystallization of silver bromide is in the first ripening accompanied by the formation of impurities consisting of silver nuclei. The latter have an immediate effect upon the total sensitivity as well as the sensitivity to blue light. The sensitivity to long-wave light increases only slowly during the time for ripening and is not determined by the amount of AgJ, which increases only the concentration of the primary nuclei (silver nuclei) and the total sensitivity and the sensitivity to blue light. According to Mitchell (Ref 7) the following is assumed: The sensitivity to long-wave light is caused by a kind of coagulation of the nuclei to larger units. The concentration of these units remains inconsiderable compared with that of the primary nuclei. Experiments made by Ye. P. Kramaley (Ref 8) show that silver may occur in the emulsion also in atomic or molecular state apart from the colloidally disperse form. This is assumed for the primary nuclei (I) which, therefore, consist of Ag_2, are in equilibrium with AgBr, and are adsorbed in

the lattice defects of the microcrystals. They cause the total and blue light sensitivity. The secondary nuclei (II) - the units - determine the sensitivity to long-wave light and represent the sublatent nuclei. The third kind are the catalytic developmental nuclei (III). They consist of amorphous silver particles with a high energy potential. They are formed during the capture of photo electrons by the positively charged sublatent nuclei (II). The transformation (I) - (II) - (III) takes place in the course of ripening of the emulsion as well as under the action of light. These impurity nuclei take part in the formation of the latent image. There are 3 figures and 13 references, 7 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (All-Union Scientific Research Institute of Cinematography and Photography), Institut fiziki Odesskogo gosudarstvennogo universiteta im. I. I. Mechnikova (Physics Institute of Odessa State University imeni I. I. Mechnikov)

SUBMITTED: April 1, 1959

ACCESSION NR: AP4013973 S/0077/64/009/001/0038/0046

AUTHORS: Broun, Zh. L.; Varshaver, B. G.; Mel'nichnuk, L. P.; Chibisov, K. V.

TITLE: Interaction investigations between spectral sensitivity and admixture spectral absorption of photographic emulsions

SOURCE: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 9, no. 1, 1964, 38-46

TOPIC TAGS: spectral sensitivity, photographic emulsion, silver bromide, admixture center, gold sensitizer, discrete bands

ABSTRACT: The possible existence of a discrete character in the spectral sensitivity of an optically unsensitized photographic emulsion has been studied. First, the magnitude of relative spectral sensitivity $S'_\lambda = H_\lambda, {}_0H_\lambda, t$ (H_λ - energy of monochromatic radiation) is calculated for various values of λ and, secondly, a silver bromide Lieppman emulsion is used to observe carefully the thin structure of the admixture center spectra, using the differential method with a gold sensitizer. The spectrosensitometer ISP-73 is used to determine S_λ in the wave-length interval 420-700 mμ. It is shown that the admixture spectral sensitivity is distributed in

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ACCESSION NR: AP4013973

discrete bands both in the limits of fundamental absorption of silver halogenide and in the long wave-length region, with a spectral position corresponding to thin structured bands of the admixture spectra. A discussion is given on the role played by these centers on the emulsion layer under the action of light. "The authors are grateful to Professor Ye. A. Kirillov for evaluating this work." Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: Odesskiy gosudarstvenny*y universitet im. I. I. Mechnikova (Odessa State University); Vsesoyuzny*y nauchno-issledovatel'skiy kinofotoinstitut (NIKFI) (All-Union Scientific Research Motion Picture Institute)

SUBMITTED: 13Nov62 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PG NO REF SOV: 017 OTHER: 003

Card 2/2

DENSHCHIKOV, I.[illegible]; KOZLOV, N.S.; VARSHAVER, G.N.; STOLPER, A.M.

Electric tensometric scales for lorry cars. Koks i khim. no.2:61-63 '63. (MIRA 16:2)

1. Yenakiyevskiy koksokhimicheskiy zavod.
(Scales) (Coke industry—Equipment and supplies)

VARSHAVER, G.S.

CA

11A

PROCESSES AND PROPERTIES INDEX

The spectral changes in the blood after ultraviolet irradiation. G. S. Varshaver. *Arch. sci. biol.* (U. S. S. R.), 41, No. 2, 31-41(in English 41)(1936).—In the absorption curves of human dil. hemolyzed blood after an erythema dose from a Hg-quartz lamp, certain changes were observed in the region of 2800-2500 A., varying with the lapse of time after the exposure of the subject.

W. A. Perlzweig

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PIONTKOVSKIY, I.A., professor, redaktor; ANIKIN, M.M., dotsent, redaktor; VARSHAVER, G.S., dotsent, redaktor; MANIKOV, M.Ye., starshiy nauchnyy sotrudnik, redaktor; OBROSOV, A.N., professor, redaktor; PASYNKOV, Ye.I., professor, redaktor.

[Problems of physiotherapy; joint-plenum of the administration of the All-Union Society of Physiotherapists and the Scientific Council of the State Physiotherapy Scientific Research Institute of the Ministry of Health of the R.S.F.S.R.] Voprosy fizioterapii; ob"edinennyi plenum pravleniia Vsesoiuznogo obshchestva fizioterapevtov i uchenogo soveta Gosudarstvennogo nauchno-issledovatel'skogo instituta fizioterapii Ministerstva zdravookhraneniia RSFSR. Moskva, 29 iiunia- 2 iiulia 1951 g. Moskva, Medgiz, 1953. 239 p. (MLRA 7:2)

1. Vsesoyuznoye obshchestvo fizioterapevtov. (Physical therapy)

FRANK, G.M., prof., otv.red.; VARSHAVER, G.S., dotsent, zamestitel' otv. red. (Moskva); GALANIN, N.F., prof., red. (Leningrad); DANTSIG, N.M., prof., red. (Moskva); LAZAREV, D.N., kand.tekhn.nauk, red. (Leningrad); SOKOLOV, M.V., prof., red. (Moskva); SKOBELEV, V.M., kand.tekhn.nauk, red. (Moskva); LANDAU-TYLKINA, S.P., red.; KHANOVA, T.M., red.; LYUDKOVSKAYA, N.I., tekhn.red.

[Ultraviolet radiation; sources, measurement, hygienic and therapeutic use] Ul'trafioletovoe izluchenie; istochniki, izmerenie, gigienicheskoe i lechebno-profilakticheskoe primenenie. Moskva, Gos.izd-vo med.lit-ry, 1958. 298 p. (MIRA 13:3)

1. Chlen-korrespondent AMN SSSR (for Frank, Galanin).
(ULTRAVIOLET RAYS)

FRANK, G.M., red.; VARSHAVER, G.S., red.; DANTSIG, N.M., red.; SOKOLOV, M.V., red.; FANIKOV, M.Ye., red.; ZUYEVA, N.K., tekhn. red.

[Transactions of the Conference on the Biological Effect of Ultraviolet Radiation] Trudy konferentsii po biologicheskomu deistviiu ul'trafioletovogo izlucheniia. 6th, Leningrad, 1958. Moskva, Medgiz. Vol.3. [Ultraviolet radiation; biological effect, therapeutic, preventive, and hygienic uses, and measurement] Ul'trafioletovoe izluchenie; biologicheskoe deistvie, lechebno-profilakticheskoe i gigienicheskoe primenenie, izmerenie. Pod red. G.M.Franka i dr. 1960. 271 p. (MIRA 15:3)

1. Konferentsiya po biologicheskomu deystviju ul'trafioletovogo izlucheniya. 6th, Leningrad, 1958.
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(ULTRAVIOLET RAYS—PHYSIOLOGICAL EFFECT)

VARSHAVER, L. G.; SOKOLOVA, M. N.

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1. Iz kafedry patologicheskoy anatomii (zav. - prof. M. K. Dal') Kiyevskogo instituta usovershenstvovaniya vrachey i prozektury (zav. - prof. V. L. Byalik) Kiyevskogo okruzhnogo voyennogo gospitalya.

(LEUKEMIA)

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(BRAIN—DISEASES) (SPINAL CORD—DISEASES)

VARSHAVER, L.G.; SOKOLOVA, M.N.

Some clinical anatomicopathological juxtapositions in cancer of the pancreas. Sbor.nauch.trud.Kiev.okruzh.voen.gosp. no.4: 165-170 '62. (MIRA 16:5)

(PANCREAS—CANCER)

VARSHAVER, N. B.

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SO: PREDECESSOR OF JOURNAL OF G NERAL BIOLOGY. (Biologicheskii Zhurnal) Vol. VII, [illegible] No. 1

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Clonal cultivation of mammalian and human cells. TSitologiia 3 no.6: 653-661 N-D '61. (MIRA 14:12)

1. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii i Laboratoriya virusnoy tsitopatologii Moskovskogo instituta virusnykh preparatov.
(TISSUE CULTURE)

VARSHAVER, N.B.

Comparative karyological study of transplanted cellular lines of the human amnion. Dokl.AN SSSR 145 no.5:1145-1147 '62.
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(TISSUE CULTURE) (AMNION) (CHROMOSOME NUMBERS)

SOLOV'YEV, V.D.; GULEVICH, N.Ye.; VARSHAVER, N.B.

Virological and karyological study of a cell line resistant to poliomyelitis virus. Vop. virus. 8 no.5:580-583 S-O'63 (MIRA 17:1)

1. Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov.

VARSHAVER, N.B.; GULEVICH, N.Ye.

Genetic studies on the principle of cell immunity. II. Karyological studies on resistant leukemia cells. Vop. virus 9 no.4:482-489 Jl-Ag '64. (MIRA 18:7)

1. Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov.

RAPOPORT, R.I.; KOKOVIKHINA, K.I.; VARSHAVER, N.B.; YERMAKOVA, M.N.; KOLESOV, I.M.; ROZINA, N.Ye.

Cultivation of a strain of diploid cells of the lungs of a human embryo. Vop. virus. 10 no.2:187-191 Mr-Ap '65.

(MIRA 18:10)

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SOLOV'YEV, V.D.; GEORGADZE, I.I.; VARSHAVER, N.B.

Study of natural changes in the susceptibility to viruses in the transplantable culture of J-96 cells and in clonal subcultures. Vop. virus. 10 no. 6:699-703 N-D '65 (MIRA 19:1)

1. Institut epidemiologii i mikrobiologii imeni N.F. Gamaleĭ AMN SSSR, i Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov. Submitted August 4, 1965.

VARSHAVER, R.A.

Clinical, X-ray, and morphological comparisons of chronic appendicitis in children. Khirurgiia 34 no.7:71-75 Jl '58 (MIRA 11:9)

1. Iz kliniki detskoy khirurgii (zav. - prof. A.V. Gabay) Khar'kovskogo meditsinskogo instituta na baze Khar'kovskoy oblastnoy klinicheskoy bol'nitsy (glavnyy vrach M.G. Madiyevskiy)
(APPENDICITIS, in infant & child
clin., x-ray & pathol. comparisons in child (Rus))

VARSHAVER, R. A., Cand Med Sci -- (diss) "Clinico-x-ray-morphological comparisons in children with chronic appendicitis." Khar'kov, 1960. 14 pp; (Khar'kov Medical Inst); 200 copies; free; (KL, 17-60, 168)

VARSHAVER, Ye.M., inzhener; BERNADYUK, Z.A., inzhener.

Calculating the cost of petroleum products. Neftianik 1 no.10:31 O '56. (MLRA 9:11)

1. Novokuybyshevskiy neftepererabatyvayushchiy zavod.
(Petroleum products)

VARSHAVER, Ye.M., inzhener; BERNADYUK, Z.A., inzhener; YASTREBOV, G.I., inzhener.

Two-step filtration in deparaffination plants. Neftianik 1 no.11:16-17 N '56. (MLRA 9:12)

1. TSekh deparafinizatsii Novokuybyshevskogo neftepererabatyvayushchego zavoda.
(Petroleum--Refining) (Paraffins)

VARSHAVER, Ye.M.

Some defects in the design of apparatus for exhaustive deparaffinization of oils. Neftianik 2 no.4:17-18 Ap '57. (MLRA 10:5)

1. Nachal'nik tsekha deparafinizatsii Novokuybyshevskogo nefteperera-batyvayushchego zavoda.
(Lubrication and lubricants)

65-10-10/13

AUTHOR: Varshaver, Ye.M.

TITLE: An Increase in the Productivity and an Increase in the Degree of Recovery of Oil from a Raw Material on the Operating De-paraffinisation Plants (Uvelicheniye proizvoditel'nosti i uglubleniye otbora masla ot syr'ya na deystvuyushchikh ustanovkakh deparafinizatsii)

PERIODICAL: Khimiya i Tekhnologiya Topliva i Masel, 1957, No.10, pp. 52 - 61 (USSR)

ABSTRACT: Modification introduced on a typical de-paraffinisation plant (designed by Giproneftezavody) are described in some detail. The layout of the original plant (Fig.1) and the quality of the distillate and residual raffinates (Table 1) and operating indices of the plant (Table 2) are described. For the de-paraffinisation of distillate, the final modification of the plant (proposed by Engineers A. Ye.Al'tusher, Z.A. Bernadyuk, Ye.M. Varshaver, A.I. Demidov, L.M. Korchak, M.G. Mitrofanov and G.I. Yastrebov) is shown in Fig.5. Its characteristic feature is stepwise dilution with dry solvent and re-circulation of filtrate. According to this scheme, the plant operated from April, 1955 to July, 1956. The results and mean operating conditions are given in Table 2. A comparison of operating results with every modification tested is given in Table 3.

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An Increase in the Productivity and an Increase in the Degree of Recovery of Oil from a Raw Material on the Operating De-paraffinisation Plants

The yield of oil from the distillate raw material increased from 57 to 72%, mean daily output (calculated on oil) by 22% in respect of the actual capacity when the plant was operated according to the designed scheme. De-paraffinisation of the residual raffinate was designed to be carried out according to the same scheme (Fig.1), but with a higher dilution with solvent (4:1 instead of 3:1 by weight). Operating indices are given in Table 4. Results of the laboratory investigations on the influence of the degree of dilution on the de-paraffinisation process are given in Table 5. Changes in dilution did not improve the process. In 1954, on the proposal of Engineers Z.A. Bernadyuk et al., crystallisation conditions were changed by a 5-7% addition to residual raffinate of low-melting paraffins (m.t. 22-28 °C) from de-oiling of "gach" which previously was passed into fuel oil. Kerosenes with low-melting paraffins were precipitating from the raw material in large crystals which made filtering easy. This permitted decreasing the dilution with solvent from 4:1 to 3:1 and increasing the velocity of filtration and thus the output by 15-18% and the yield of oil from

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