SARMABEKH'YAN, S. B. July 52

USSR/Medicine - Brucellosis Treatment

"The Treatment of Nervous Diseases at Goryachiy Klyuch Health Resort (Psekup Mineral Waters)," S. B. Sarmabekh'yan, Clinic of Nervous Diseases, Kuban Med Inst

Zhur Nevropat i Psikh, Vol 52, No 7, p 50

Observed the balneosurgical treatment of various nervous diseases such as traumatic neuritis at Goryachiy Klyuch (Hot Springs), where 11 wells supply Psekup mineral waters. More important however than these observations, were the results obtained in treating encephalopathy, neurosyphilis, and brucellosis.

Source #264T46

GALAMB, M.; SARMAI, E.

Statistical results in ambulatory executed cholecystographic studies. Orv. hetil. 94 no.25:693-694 21 June 1953. (CLML 25:1)

1. Doctors. 2. Roentgen Department (Head Physician -- Dr. Erno Sarmai), Madach-teri Metropolitan Council Dispensary (Director -- Dr. Tibor Tamas).

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001447210017-4"

SARMAI, E.

Alternate use of two kinds of automatic systems in three-phase diagnostic x-ray apparatus. Acta Chir. Acad. Sci. Hung. 2 no.4:489-495 '61.

(RADIOGRAPHY equip & supplies)

SARMAI, Erno, dr.

Solution of angiographic and tomographic problems based on calculated exposure data with the aid of Autoheliophos kilowatt-device. Magy radiol. 13 no.1:38-45 Ja '61.

1. A Fovarosi Tanacs VIII. ker. Szanto Kovacs Janos utcai Rendelointezete Rontgenosztalyanak (foorvos: Sarmai Erno dr.) kozlemenye.
(ANGIOGRAPHY equip & supply)
(RADIOMETRY equip & supply)

SARMAI,E.; HORANYI,J.; ERDELYI,M.; KANTOR,E.

Significance of preoperative irradiation in the treatment of breast cancer. Orv. hetil. 105 no 13:618-620; 29 Mr'64.

*

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001447210017-4"

SARMAKESHEV, S.L.

A permanent conference becomes an active force. Mashinostroitel' no.2:45-46 F '60. (MIRA 13:5)
(Technological innovations)

SARMAKESHEV, V.N.

POBEGAYLO, N.V.; SARMAKESHEV, V.N.

Sochi-Matsesta health resort. Vop.kur., fizioter. i lech. fiz. kul't. 22 no.2:68-69 Mr-Ap '57. (MIRA 11:1)

1. Glavnyy vrach Sochinskogo territorial'nogo upravleniya kurortami, sanatoriyami i domami otdykha (for Pobegaylo). 2. Glavnyy vrach sanatoriya "Kryl'ya Sovetov" (for Sarmakeshev)
(SOCHI-MATSESTA--HEALTH RESORTS, WATERING PLACES, ETC.)

1. SARMANAYEV, R.B.

2. USSR (600)

4. Gums-Diseases

7. Treatment of amphodontosis (alveolar pyorrhea) with penicillin-novocaine block. Stomatologiia no. 4. 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

SARMANAYEV, R.B.

Modification of conduction anesthesia of the inferior alveolar nerve. Stomatologiia 35 no.3:57 My-Je '56. (MIRA 9:9)
(LOCAL ANESTHESIA)

KOVALEVSKAYA, I.L.; EPSHTEYN-LITVAK, R.V.; DMITRIYEVA-RAVIKOVICH, Ye.M.; KURNOSOVA, N.A.; SHCHEGLOVA, Ye.S.; FERDINAND, Ya.M.; KHOMIK, S.R.; MAKHLINOVSKIY, L.P.; PETROVA, S.S.; GOLUBOVA, Ye.Ye.; GONCHAROVA, Z.I.; SARMANEYEV, A.P.; SIZINTSEVA, V.P.; Prinimali uchastiye: MEDYUKHA, G.A.; OSOKINA, L.A.; RACHKOVSKAYA, Yu.K.; OSOVTSEVA, O.I.; DEDUSENKO, A.I.; KOVALEVA, P.S.; KARASHEVICH, V.P.; CHEBOTAREVICH, N.D.; CHIGIR', T.R.; SKUL'SKAYA, S.D.; KECHETZHIYEV, B.A.; DEMINA, A.S.; ZUS'MAN, R.T.; YESAKOV, P.I.; SYSOYEVA, Z.A.; ZINOV'YEVA, I.S.; FAL'CHEVSKAYA, A.A.; DENISOVA, B.D.; TIMOFELEVA, R.G.; SYRKASOVA, A.V.; LYANTSMAN, S.G.

Reactivity and immunological and epidemiological effectiveness of alcoholic typhoid and paratyphoid fever vaccines in school children. Zhur. mikrobiol., epid. i immun. 33 no.7:72-77 Jl '62. (MIRA 17:1)

1. Iz Moskovskogo, Rostovskogo, Omskogo institutov epidemiologii i mikrobiologii, Stavropol'skogo instituta vaktsin i syvorotok i Ministerstva zdravookhraneniya RSFSR. 2. Rostovskiy institut epidemiologii i mikrobiologii (for Kovaleva). 3. Stavropol'skiy institut vaktsin i syvorotok (for Sysoyeva). 4. Kuybyshevskiy institut epidemiologii i mikrobiologii (for Zinov'yeva). 5. Saratovskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya (for Lyantsman).

H-26

COUNTRY : Rumania
CATEGORY :

80043

ABS. JOUR. : RZKhim., No. 22 1959 No.

AUTHOR : Macovschi, E. and Sarmanioti, C.
INST. : Rumanian Academy of Sciences
TITLE : Modifications of the Bertrand and Bierri Methods for the Determination of the Glucoses Content

ORIG. PUB. : Studii si Cercetari Biochim Acad RPR, 1, No 3, 271-276 (1958)

ABSTRACT : The main drawback in the application of the above-indicated methods for the determination of the content of glucoses heretofore has been the need for the utilization of complicated filtration procedures for the separation of the cupric oxide which is formed. The authors propose a modification of the above method which consists in the addition of sodium bicarbonate to the Fehling solution (before filtration), which permits the filtration to be made with standard filter paper.

CARD: 1/2

SARMANOV, I.O.

Generalization of S.N. Bernshtein's theorem on normal correlation. Trudy Len. lesotekh. akad. no.78:49-50 '57. (MIRA 11:10)
(Correlation (Statistics))

SARMANOV, I.O. (Moskva)

Liapunov's theorem on sums of weakly dependent random variables. Izv. vys. ucheb. zav.; mat. no.3:123-130 '64.

(MIRA 17:12)

SARMANOV, O. V.

Ob izogennoy korrelyatsii. dan, 32, (1941), 16-18.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A. G.,
Markushevich, A. I.,
Rashevskiy, P. K.
Moscow-Leningrad, 1948

SARMANOV, O. V.

Ob izogennoy korrelyatsii. IAN. ser. matem., 9 (1945), 169-200.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A. G.,
Markushevich, A. I.,
Rashevskiy, P. K.
Moscow-Leningrad, 1948

SARMANOV, O.

...integrals. In ... [illegible]

[illegible]

... solution ... [illegible]

$$\lambda \int_{a}^{b} \phi(y) \frac{F(x, y)}{p(x)} dy = \phi(x), \qquad b - a = \infty,$$

where $F(x, y)$ is a symmetrical distribution function for the variables (x, y) and $p(x)$ is the prior distribution function of x. The main conclusion is that such a solution, which is unique, exists provided ... function [illegible]

Sarmanov, O. V. Generalization of a limit theorem of the theory of probability to sums of almost independent variables satisfying Lindeberg's condition. [illegible]

[illegible]

[illegible] and assumes that they obey the Lindeberg conditions uniformly [illegible] X [illegible] X [illegible]. The proof of the central [illegible] characteristic functions [illegible] difficulty [illegible] further results of this type cf. Loève, J. Math. Pures Appl. (9) 24, 249–318 (1945); these Rev. [illegible] 453.

W. Feller (Ithaca, N. Y.).

SARMANOV, O. V.

Nov 1947

USSR/Geology
Geological Prospecting
Potassium Sulphate

"Stochastic Proof of One Widely Known Geological Probability," A. B. Vistelius, O. V. Sarmanov, All-Union Petroleum Geological Prospecting Institute, Leningrad, 3¼ pp

"Dok Ak Nauk" Vol LVIII, No 4

During the period 1946-1947 many authors wrote articles describing studies on the distribution of potassium sulphate deposits in the Paleozoic layer of the Eastern Russian platform. In this article, Vistelius and Sarmanov develop a stochastic system for the deposotion process of sulphate sediments and compare it with one of the more typical of the known asymmetric distributions. Submitted by Academician S. N. Bernshteyn, 5 May 1947

PA 38T36

SARMANOV, O. V.

PA 38T65

USSR/Mathematics - Function Theory Nov 1947
Mathematics - Correlation

"Rectification of a Symmetrical Correlation," O. V. Sarmanov, 3 pp

"Dok Ak Nauk" Vol LVIII, No 5

Author assumes that we let F (x,y) = F(y,x) be the symmetrical function of distribution, which determines a correlation at all levels. If the correlation is a curved line, i.e., m.o.$_x$y = ψ (x) nonlinear function, it is necessary to find a conversion so that X = φ (x), Y = φ (y), so that the correlation between X and Y would be a straight line. The rectification can be carried out with the following equation:

38T65

USSR/Mathematics - Function Theory (Contd) Nov 1947

$$\varphi(x) = \lambda \int_{-\infty}^{\infty} \varphi(y) \frac{F(x,y)}{f(x)} \, dy$$

where $p(x) = \int_{-\infty}^{\infty} F(x,y)\,dy$. Submitted by Academician S. N. Bernshteyn, 12 May 1947, at the Leningrad Branch, Mathematics Institute imeni V. A. Steklov, Academy of Sciences of the USSR.

38T65

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001447210017-4"

Sarmanov, [illegible] V. On the rectification of correlation [illegible]

[illegible] of the author's dissertation [illegible] his papers in Doklady Akad. Nauk SSSR (N.S.) 58, 745-747 (1947); 59, 861-863, 1061-1064 (1948); 60, 545-548 (1948); these Rev. 10, 45; 9, 442, 593.

Source: Mathematical Reviews, Vol. 10 No. 5

SARMAROV, O. V.

PA5/49T60

USSR/Mathematics - Probability Jul 48

"Academician S. N. Bernsteyn's Book, 'The Theory of Probabilities,'" O. V. Sarmarov, 1 p

"Priroda" No 7

Favorably reviews fourth edition of subject work, over one third larger than third edition published in 1934. Summarizes contents of extra chapters. Published by Gostekhizdat, 1946, 556 pp, Moscow-Leningrad.

[redacted] 5/49T60

SARMANOV, O.V.

correla[illegible] ... [illegible]metrical ... 59 861–

... of ... al ... a ... vi- ... and ... exists ... tes ... is ... said ... a ... is

... that the ... transforma[illegible] ... the authors ... equivalent to ... system of ...

$\int$ ...

$\int$ ...

where ... are the ... respectively ... system ... another system ... inequalities ... distribution ... earlier paper ... R. ... 53 ... these Re[views] ... some of the results of that paper ... functions to the nonsymmetric ... conditional distribution functions ... x for a given ... satisfy certain ... (1) will have monotone solutions ... corresponding to the first characteristic ... absolute value is greater than one. The ... $X=\varphi_1(x)$, $Y=\psi_1(y)$ will yield a linear correl[ation] ... coefficient of correlation equal to λ_1 ... H. P. ... (Iowa)

... to ... al ... in ... extends ... tion ... the ... of ... system ...

Sarmanov, O. V. On the order of magnitude of a[illegible] of regression. Doklady Akad. Nauk SSSR (N.S.) 59, 1061–1064 (1948). (Russian)

Let $F(x, y)$ be the density of the distribution of two variables which determines a correlation in the whole plane, and satisfies the condition

$$(1) \qquad \int_{-\infty}^{\infty}\int_{-\infty}^{\infty} \frac{F^2(x, y)}{p(x)P(y)} dxdy = K < \infty,$$

where $p(x)$ and $P(y)$ are the marginal densities of x and y, respectively. On the basis of the results of an earlier paper [reference in the preceding review] the author proves the following theorems. There exists no symmetrical correlation which satisfies condition (1) and which is such that the lines of regression $\varphi(x)$ of y on x, satisfy the condition [illegible] $c>0$, $\alpha>0$, for $|x|>A$, while at the same time [illegible] 0, where

$$[illegible] = \int_{-\infty}^{\infty} y \,[F(x, y)/p(x)]\, dy.$$

There exists no nonsymmetrical correlation satisfying condition (1) which is such that the lines of regression $\varphi(x)$, of y on x, $\psi(y)$, of x on y, satisfy the conditions

$$\varphi(x) [illegible] x^{1+\alpha}, \ c>0, \ \alpha>0, \qquad |x|>A,$$

$$\psi(y) \cong c_1^{-1} y^{1/(1+\alpha)+\beta}, \ c_1>0, \ \beta>0, \qquad |y|>B,$$

while at the same time lim inf $\varphi_1(x)>0$, lim inf $\psi_1(y)>0$, where $\psi_1(y)$ has an analogous meaning to that given for $\varphi_1(x)$ above. The following results are stated as corollaries. If for any correlation which satisfies condition (1) the lines of regression are polynomials of positive degree, they must be linear. If the lines of regression $\varphi(x)$, $\psi(y)$ are algebraic curves of degrees $\delta>0$, $\delta_1>0$, then $\delta\delta_1 \leq 1$.

H. P. Thielman (Ames, Iowa).

Source: Mathematical Reviews, No. 8

SARMANOV, O V.

Sarmanov, O. V. On the order of magnitude of a line of regression. II. Doklady Akad. Nauk SSSR (N.S.) 60, 545–548 (1948). (Russian)

The following two theorems generalize previous results of the author [same Doklady (N.S.) 59, 1061–1064 (1948); these Rev. 9, 442]. There exists no symmetric correlation which satisfies the condition (1) of the review of the earlier paper, and which is such that the lines of regression $\phi(x)$, of y on x, satisfy the condition $|\phi(x)| \geqq \lambda(|x| - A)$ for $|x| \geqq A$, $\lambda > 1$, $A > 0$. There exists no nonsymmetric correlation satisfying the same condition (1) and which is such that the lines of regression $\phi(x)$, of y on x, and $\psi(y)$, of x on y, satisfy the conditions $|\phi(x)| \geqq r(|x|)$ for $|x| \geqq A > 0$; $|\psi(y)| \geqq r^{-1}[(1+\mu)|y|]$ for $|y| \geqq B > 0$, $\mu > 0$, where $r(|x|)$ is a monotone increasing, continuous convex function of $|x|$ such that $r(0) = 0$, and $r^{-1}(|y|)$ is its inverse function.

H. P. Thielman (Ames, Iowa).

Source: Mathematical Reviews, Vol 9 No. 10

SARMANOV, O. V.

USSR/Mathematics - Distributions, Statistics 11 Jun 52

"Functional Moments of Symmetric Correlation," O. V. Sarmanov, Leningrad Mining Inst

"Dok Ak Nauk SSSR" Vol LXXXIV, No 5, pp 887-890

Clarifies the limits of the order of growth of the function f(x) which is the conditional functional moment of a certain function r(y) which is unbounded, which limits follow from the symmetry of density F(x,y) and certain familiar conditions of boundedness; here $f(x) = \int_{-\infty}^{\infty} r(y)F(x,y)dy/p(x)$ and $p(x) = \int_{-\infty}^{\infty} F(x,y)dy$ is the a priori density of x. Submitted by Acad S. N Bernshteyn 19 Apr 52.

223T74

USSR/Mathematics - Statistics, Functional Moments 21 Jun 52

"Functional Moments of Asymmetrical Correlation," O.V. Sarmanov, Leningrad Mining Inst

"Dok Ak Nauk SSSR" Vol LXXXIV, No 6, pp 1139-1142

Considers an asymmetrical (F(x,y) + F(y,x)) distribution density of 2 variables which determines a correlation on the entire plane and satisfies usual conditions of bounds; also considers the unbounded function r(y). States that the pressing problem of the theory of correlations is the investigation of the properties of the functions phi(x) = $M.O._x r(y)$ and

223T83

psi(y) = $M.O._y r(x)$, which are called conditional functional moments of the functions r(y) and r(x) relative to the kernels F(x,y)/p(x) and F(x,y)/P(y) resp occurring in the integral expressions for the moments. Submitted by Acad S. N. Bernshteyn 19 Apr 52.

223T83

SARMANOV, O. V.

САРМАНОВ, О.В.

VISTELIUS, A.B., doktor geologo-mineralogicheskikh nauk; SARMANOV, O.V.
professor, doktor matematicheskikh nauk.

Some remarks on professor P.A.Ryzhov's article "On evaluating the precision of mineral deposit estimates." Trudy VNIMI no.29: 200-201 '54. (MLRA 8:3)

(Mines and mineral resources--Statistics)

SARMANOV, O. V.

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

There are 3 references, 2 of which are USSR, and 1 is English. 125-127

Sanov, I. N. (Moscow). On the Probability of the Large Deviations of a Random. 127-129

Mention is made of Smirnov, N. N. and Petrov, V. V.

Sarmanov, O. V. (Leningrad). Limiting Discrete Distribution for Nonhomogeneous Two-state Markov Chains. 129-130

There are 2 references, 1 of which is USSR, and the other one English.

Sarymsakov, T. A. (Tashkent). Limit Theorems for Nonhomogeneous Markov Chains. 130

There is 1 USSR reference.

Card 41/80

SARMANOV, O.V.

[redacted]

Creator of the concept of the mathematical series. Priroda 45 no.11:73-76 N '56. (MLRA 9:11)

(Markov, Andrei Andreevich, 1856-1922)

SARMANOV, O.V.

CARD 1/2 PG - 784

SUBJECT USSR/MATHEMATICS/Theory of probability
AUTHOR SARMANOV O.V.
TITLE ~~Necessary and~~ sufficient conditions for the existence of a discrete limit law for Markov chains of two states.
PERIODICAL Doklady Akad.Nauk 110, 735-738 (1956) reviewed 5/1957

Let be given an unbounded sequence of exponential series. Let the experiments have two possible results (states) A and $\bar{A}$ and be combined in a simple, inhomogeneous Markov chain, where the n-th series consists of n experiments. Let $p_{1,n}$ be the probability of A in the first experiment; $\alpha_{k,n}$ and $\beta_{k,n}$ (k=2,3,...,n) the probabilities of the transition of A and of $\bar{A}$ in the (k-1)st experiment to A in the k-th experiment. Let $P_{s,n}$ be the probability of an s-fold appearence of A in a series of n experiments. The sequence of experimental series has a discrete limit distribution if there exist the limit values

$$\lim P_{s,n} = P_s \qquad s=0,1,2,\ldots, \tag{1}$$

where $\sum\limits_{s=0}^{\infty} P_s = 1$. Let the following conditions be satisfied: $\lim\limits_{n\to\infty} p_{1,n} = p_1$

In ord

(k=2,3,4,...).

20-120-4-8/67

AUTHOR: Sarmanov, O.V.

TITLE: Maximum Correlation Coefficient (Symmetric Case) (Maksimal'nyy koeffitsiyent korrelyatsii (simmetrichnyy sluchay)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 120, Nr 4, pp 715-718 (USSR)

ABSTRACT: Let $F(x,y) = F(y,x) \geqslant 0$ be the density of the distribution determining the correlation between the random variables x and y in the domain $[a \leqslant x, y \leqslant b]$. Let furthermore

$$K(x,y) = \frac{F(x,y)}{\sqrt{p(x)\ p(y)}}, \quad p(x) = \int_a^b F(x,y)dy$$

and let K(x,y) be square-integrable with respect to x and y. In a former paper [Ref 1] the author showed that the spectrum of the kernel K(x,y) has the form

$$\lambda_0 = 1, \lambda_1, \lambda_2, \lambda_3, \ldots$$

$$\varphi_0(x) = 1\sqrt{p(x)}, \quad \varphi_1(x)\sqrt{p(x)}, \quad \varphi_2(x)\sqrt{p(x)}, \ldots$$

where $|\lambda_1| > 1$, since $1/\lambda_1$ is the correlation coefficient between the eigenfunctions $\varphi_1(x)$ and $\varphi_1(y)$.

Card 1/2

Maximum Correlation Coefficient (Symmetric Case) 20-120-4-8/67

$R^* = \frac{1}{\lambda_1}$ is denoted to be the maximum correlation coefficient corresponding to the density $F(x,y)$.

Theorem: In order that x and y are independent it is necessary and sufficient that $R^* = 0$.

Theorem: If the correlation is rectilinear, then the ordinary correlation coefficient R is identical with R^*.

An analogous definition and results are given for the discrete case.

There are 3 Soviet references.

ASSOCIATION: Matematicheskiy institut imeni V.A. Steklova Akademii nauk SSSR (Mathematical Institute imeni V.A. Steklov of the Academy of Sciences of the USSR)

PRESENTED: January 23, 1958, by S.N. Bernshteyn, Academician
SUBMITTED: January 23, 1958

1. Mathematics

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001447210017-4"

AUTHOR: Sarmanov, O.V. SOV/20-121-1-13/55

TITLE: The Maximal Coefficient of Correlation (Asymmetric Case) (Maksimal'nyy koeffitsiyent korrelyatsii (nesimmetrichnyy sluchay))

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 1, pp 52-55 (USSR)

ABSTRACT: Let $F(x,y)$ be the density of distribution determining in $\Omega = [a \leq x \leq b;\ a_1 \leq y \leq b_1]$ the correlation between x and y. Let

$$p(x) = \int_{a_1}^{b_1} F(x,y)\,dy, \qquad P(y) = \int_a^b F(x,y)\,dx$$

be the a priori-densities of x and y let the kernel

$$K(x,y) = \frac{F(x,y)}{\sqrt{p(x)P(y)}}$$

be integrable in the square with respect to both variables. The asymmetric density $F(x,y)$ determines two symmetric densities

$$(1) \quad F_1(x,y) = \int_{a_1}^{b_1} \frac{F(x,t)F(y,t)}{P(t)}\,dt, \quad F_2(x,y) = \int_a^b \frac{F(t,x)F(t,y)}{p(t)}\,dt$$

Card 1/3

and two symmetric kernels

$$(2) \quad K_1(x,y) = \frac{F_1(x,y)}{\sqrt{p(x)p(y)}}, \qquad K_2(x,y) = \frac{F_2(x,y)}{\sqrt{P(x)P(y)}} .$$

The kernels (2) are positive and have the same spectrum of the eigenvalues

$$1 < \lambda_1^2 \leq \lambda_2^2 \leq \ldots \leq \lambda_k^2 \leq \ldots$$

and in general different spectra of the eigenfunctions. The magnitude $R^* = \frac{1}{\lambda_1}$ is called the maximal coefficient of correlation corresponding to the density $F(x,y)$. For the calculation of R^* the author commends a method of successive approximation, the convergence of which was proved in an earlier paper of the author [Ref 2].

Theorem: For the independence of x and y it is necessary and sufficient that R^* vanishes.

Theorem: If the correlation is rectilinear, then R^* is identical with the ordinary coefficient of correlation.

Finally, in a similar manner, the maximal coefficient of correlation in the case of discrete random variables is introduced.
There are 3 Soviet references.

ASSOCIATION: Matematicheskiy institut imeni V.A.Steklova Akademii nauk SSSR (Mathematical Institute imeni V.A.Steklov of the Academy of Sciences of the USSR)

PRESENTED: February 21, 1958, by S.N.Bernshteyn, Academician

SUBMITTED: February 20, 1958

1. Mathematics

16(2) SOV/20-126-1-5/62

AUTHORS: Sarmanov, O.V., Visteliyus, A.B.

TITLE: On the Correlation Between the Percentage Variables (O korrelyatsii mezhdu protsentnymi velichinami)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 1, pp 22 - 25 (USSR)

ABSTRACT: Let $x_1, x_2, \ldots, x_n, z_1, z_2, \ldots, z_m$ be nonnegative random variables, the sum of which is assumed to be 100% . Let only the values :

$$\xi_i = \frac{100x_i}{x_1+\ldots+x_n+z_1+\ldots+z_m}, \quad \zeta_j = \frac{100z_j}{x_1+x_2+\ldots+x_n+z_1+\ldots+z_m}$$

be observable. The new random variables ξ_i and ζ_j are denoted as percentage variables.

Theorem : Let z_1 = const. If the correlation coefficient between ξ_1/ζ_1 and ξ_2/ζ_1 is calculated, then the real correlation coefficient between x_1 and x_2 is found.

Card 1/2

6

On the Correlation Between the Percentage Variables SOV/20-126-1-5/52

Theorem: Let z_1 and z_2 be independent of each other and of the other variables. The ς_1, ς_2 are assumed to be positive. The correlation coefficient $R_o = R(\xi_1/\varsigma_1 ; \xi_2/\varsigma_2)$ is $\leq$ the correlation coefficient $R = R(x_1 ; x_2)$ with respect to the absolute value and has the same sign. The coefficients $R(\xi_1/\varsigma_1 ; \xi_2/\varsigma_2)$ and $R(x_1 ; x_2)$ can only simultaneously vanish.

There are 3 references, 1 of which is Soviet, and 2 are American.

ASSOCIATION: Matematicheskiy institut imeni V.A. Steklova AN SSSR (Mathematical Institute imeni V.A. Steklov, AS USSR)

PRESENTED: November 26, 1958, by S.N. Bernshteyn, Academician

SUBMITTED: November 25, 1958

Card 2/2

16(1) SOV/20-128-2-6/59

AUTHORS: Sarmanov, O.V., and Zakharov, V.K.

TITLE: Spectra of Enlarged Stochastic Matrices

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 2, pp 243-245 (USSR)

ABSTRACT: Let $\{A_i\}$, $\{B_i\}$ be two dependent finite sequences of events with a symmetric table of correlation $\{p_{ij}\}$, i,j=1,2,...,n:

(1) $0 \leq p_{ij} = p_{ji} = P(A_i \cap B_i)$.

Let

(2) $p_i = P(A_i) = P(B_i) = \sum_{j=1}^{n} p_{ij} > 0$

and

(3) $\sum_{i,j=1}^{n} p_{ij} = \sum_{i=1}^{n} p_i = 1$.

The spectrum of the stochastic matrix

(4) $\left\{\frac{p_{ij}}{p_i}\right\}$, i,j=1,...,n

has the form

(5) $1 \geqslant \frac{1}{|\lambda_1|} \geqslant \frac{1}{|\lambda_2|} \geqslant \dots \geqslant \frac{1}{|\lambda_{n-1}|}$.

Card 1/2

Spectra of Enlarged Stochastic Matrices SOV/20-128-2-6/59

Some events A_i (and simultaneously the events B_i with the corresponding numbers) are united in one event. The authors obtain a stochastic matrix of lower order. Let e.g. $A_1' = A_1 \cup A_2$. Principal theorem: The eigenvalues $1/\lambda_i'$ of this enlarged stochastic matrix are always weighted means of the eigenvalues $1/\lambda_i, 1/\lambda_{i+1}, \ldots, 1/\lambda_{n-1}$ of the initial matrix (4), i.e.:

(10) $$\frac{1}{\lambda_i'} = \sum_{k=i}^{n-1} \frac{a_{ik}^2}{\lambda_k},$$

where

(11) $$\sum_{k=i}^{n-1} a_{ik}^2 = 1.$$

Several conclusions are given. There are 2 Soviet references.

ASSOCIATION: Matematicheskiy institut imeni V.A.Steklova Akademii nauk SSSR (Mathematical Institute imeni V.A.Steklov, AS USSR)

PRESENTED: May 18, 1959, by S.N.Bernshteyn, Academician

SUBMITTED: May 15, 1959

Card 2/2

KOLMOGOROV, A.N.; SARMANOV, O.V.

S.N. Bernshtein's works on the theory of probability; on his 80th birthday. Teor. veroiat. i ee prim. 5 no.2:215-221 '60.
(MIRA 13:9)
(Bernshtein, Sergei Natanovich, 1880-)

S/038/60/024/03/01/008

AUTHORS: Gel'fond, A.O., and Sarmanov, O.B.

TITLE: On the Occasion of the 80th Birthday of Sergey Natanovich Bernshteyn

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1960, Vol. 24, No. 3, pp. 309-314

TEXT: This is a survey on the papers of S.N. Bernshteyn on the theory of differential equations, the theory of approximations of functions and probability calculus, and a list of Bernshteyn's publications during the years 1950 - 1959 with 20 titles.
The authors mention P.L. Chebyshev, Ye.I. Zolotarev, A.A. Markov and N.I. Akhiyezer.

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It is assumed that

$$(2) \quad \int\limits_{\Omega_1+\Omega_2} \frac{p^2(Q)}{p_1(Q_1)p_2(Q_2)} \, d\,Q < \infty$$

Definition : The maximum correlation coefficient $\bar{r}\,(Q_1,Q_2)$ for the random vectors Q_1 and Q_2 is defined to be the maximum of the integral

$$(3) \quad I\,(\varphi,\psi) = \int\limits_{\Omega_1+\Omega_2} p(Q)\,\varphi(Q_1)\,\psi(Q_2)\,d\,Q$$

with respect to absolute value, where φ and ψ run through the functions for which

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$$(4)\quad \int_{\Omega_1} p_1(Q_1)\psi(Q_1)\, d\,Q_1 = \int_{\Omega_2} p_2(Q_2)\psi(Q_2)\, d\,Q_2 = 0$$

$$(5)\quad \int_{\Omega_1} p_1(Q_1)\psi^2(Q_1)\, d\,Q_1 = \int_{\Omega_2} p_2(Q_2)\psi^2(Q_2)\, d\,Q_2 = 1$$

Fundamental theorem :For the complete independence of the random magnitudes $x_1, x_2, \ldots, x_n$ it is necessary and sufficient that all possible maximum correlation coefficients vanish each one is obtained for two vectors from 2 disjoint subspaces of the R_n ; the sum of the dimensions of them varies between 2 and n).
The authors mention A.N. Kolmogorov.

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Maximum Coefficients of Multiple Correlation SOV/20-130-2-7/69

There are 3 Soviet references.

ASSOCIATION: Matematicheskiy institut imeni V.A. Steklova Akademii nauk SSSR (Mathematical Institute imeni V.A. Steklov AS USSR)

PRESENTED: October 8, 1959, by S.N. Bernshteyn, Academician

SUBMITTED: October 6, 1959

Card 4/4

80474

16.6100 16.6200 S/020/60/132/02/15/067

AUTHOR: Sarmanov, O. V.

TITLE: Pseudonormal Correlation and its Various Generalizations

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 2, pp. 299-302

TEXT: Definition: A correlation which is given on the plane $-\infty < x;\ y < \infty$ by the density of the common probability distribution

(1)
$$P_{-\frac{1}{2},\lambda}(x,y) = \frac{1}{4\pi\sqrt{1-\lambda^2}}\left\{\exp\left[-\frac{x^2+y^2-2\lambda xy}{2(1-\lambda^2)}\right] + \exp\left[-\frac{x^2+y^2+2\lambda xy}{2(1-\lambda^2)}\right]\right\},$$

where $|\lambda| < 1$, is denoted as pseudonormal.
The density (1) is a special case of

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Pseudonormal Correlation and its Various Generalizations

(5)

$$p_{\alpha,\lambda}(x,y) = \frac{|xy|^{2\alpha+1} \exp\left[-\frac{x^2+y^2}{2(1-\lambda^2)}\right]}{(1-\lambda^2)^{\alpha+1}\, 2^{2\alpha+2}\, \Gamma(\alpha+1)} \sum_{k=0}^{\infty} \frac{\left[\frac{xy\lambda}{2(1-\lambda^2)}\right]^{2k}}{k!\, \Gamma(\alpha+k+1)} =$$

$$= \frac{|xy|^{1+\alpha} \exp\left[-\frac{x^2+y^2}{2(1-\lambda^2)}\right]}{\Gamma(\alpha+1)\, |\lambda|^{2+\alpha}\, (1-\lambda^2)}\, I_\alpha\left(\frac{xy\lambda}{1-\lambda^2}\right)$$

where $I_\alpha(z)$ is the Bessel function of an imaginary argument, $\alpha > -1$, $\lambda^2 < 1$.

The desity (5) is of essential interest for the theory of the stationary Markov processes and is investigated in detail in various directions.

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S/020/60/132/02/15/067

Pseudonormal Correlation and its Various Generalizations

There are 3 references: 2 Soviet and 1 American.

ASSOCIATION: Matematicheskiy institut imeni V. A. Steklova AN SSSR (Mathematical Institute imeni V. A. Steklov AS USSR)

PRESENTED: January 16, 1960, by S. N. Bernshteyn, Academician

SUBMITTED: January 15, 1960

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S/052/60/005/004/003/007
C 111/ C 333

AUTHORS: Gnedenko, B. V., Kolmogorov, A. N., Prokhorov, Yu. V., Sarmanov, O. V.

TITLE: On the Work of N. V. Smirnov in Mathematical Statistics (On the Occasion of his 60-th Birthday)

PERIODICAL: Teoriya veroyatnostey i yeye primeneniye, 1960, Vol. 5, No. 4, pp. 436-440

TEXT: On October 17, 1960 Nikolay Vasil'yevich Smirnov, Corresponding Member of the Academy of Sciences USSR, Professor, had his 60-th birthday.

The first group of his papers is devoted to non-parametric problems. He considers: the distribution of the criterion ω^2 of Mises, the deviations from the empiric curves, "criterion of Smirnov".

The second group deals with the properties of the terms of the variation series. For papers of this group N. V. Smirnov obtained the Stalin prize. The third group is devoted to probability theory.

The authors call special attention to the difficulty of the considered problems and the elegance of the solutions.

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C 111/ C 333

On the Work of N. V. Smirnov in Mathematical Statistics (On the Occasion of his 60-th Birthday)

Tables of functions and integrals needed in applied statistics are in the press at the moment.

J. J. Gikhman, G. Kh. Maniya, A. Ren'i, Ye. L. Rvacheva, S. Kh. Tumanyan, A. A. Borovkov, V. S. Korolynk and others work on the base of the results of Smirnov.

Smirnov is the editor of the section of probability theory and statistics of the Referativnyy Zhurnal and is the director of the Department of Mathematical Statistics in the Mathematical Institute imeni V. A. Steklov of the Academy of Sciences USSR.

A list of the publications of Smirnov with 40 titles is given.

A photo of Smirnov is added.

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S11 B

S/020/60/132/04/10/064

16.6100

AUTHOR: Sarmanov, O.V.

TITLE: Characteristic Correlation Functions and Their Use in the Theory of Stationary Markov Processes /b

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 4, pp. 769-772

TEXT: The author considers a stationary real process with a continuable parameter $\{x_t;\ -\infty < t < \infty\}$. Let the means of the x_t be = 0, the dispersion = 1. Let x_{t_1} be denoted by x and x_{t_1+t} be denoted by y. Let the distribution of x and y have the density $p(t,x,y)$, where

$$p(t,x,y) = p(t,y,x) \tag{4}$$

in $\Omega = [a \leqslant x;\ y \leqslant b]$, and for all $t \neq 0$ it holds

$$\iint_{\Omega} \frac{p^2(t,x,y)}{p(x)p(y)}\,dxdy < \infty, \tag{5}$$

where

$$p(x) = \int_a^b p(t,x,y)dy,\quad p(y) = \int_a^b p(t,x,y)dx.$$

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Characteristic Correlation Functions and Their S/020/60/132/04/10/064
Use in the Theory of Stationary Markov Processes

Theorem 1: In order that the symmetrical two-dimensional density $p(t,x,y)$ which satisfies (5) determines a continuous Markov process [Abstracter's note: by satisfying the Markov equation

(9) $$p(t_1+t_2,x,y) = \int_a^b \frac{p(t_1,x,z)p(t_2,z,y)}{p(z)} dz \text{]},$$

it is necessary and sufficient that the following conditions are satisfied: a) the eigenfunctions $\{\varphi_k(x), \varphi_k(y)\}$ of the kernel

(7) $$\frac{p(t,x,y)}{\sqrt{p(x)p(y)}}$$

do not depend on t; i.e. the process is stationary, b) the eigennumbers of (7) have the form

(10) $$r_k(t) = e^{-\lambda_k t}, \quad t \geqslant 0, \quad 0 < \lambda_1 \leqslant \lambda_2 \quad \dots .$$

Theorem 2: The normal correlation

(24) $$p(t,x,y) = \frac{1}{2\pi\sqrt{1-e^{-2\lambda_1 t}}} \exp\left[-\frac{x^2+y^2-2e^{-\lambda_1 t}xy}{2(1-e^{-2\lambda_1 t})}\right]$$

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SARMANOV, O.V.

PHASE I BOOK EXPLOITATION SOV/4981

Soveshchaniye po teorii veroyatnostey i matematicheskoy statistike, Yerevan, 1958

Trudy Vsesoyuznogo soveshchaniya po teorii veroyatnostey i matematicheskoy statistike, Yerevan, 19-25 sentyabrya 1958 g. (All-Union Conference on the Theory of Probability and Mathematical Statistics. Held in Yerevan 19-25 September, 1958. Transactions) Yerevan, Izd-vo AN ASSR, 1960. 291 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk Armyanskoy SSR.

Editorial Staff: G.A. Ambartsumyan, B.V. Gnedenko, Ye.B. Dynkin, Yu.V. Linnik and S. Kh. Tumanyan; Ed. of Publishing House: A.G. Sikuni; Tech. Ed.: M.A. Kaplanyan.

PURPOSE: The book is intended for mathematicians.

COVERAGE: The book contains 41 articles submitted to the Conference and dealing with the theory of probability and mathematical statistics. Some of the articles are the papers read at the Conference and edited for publication, while others outline the theses of papers which appeared or are scheduled to appear, wholly or in part, in other publications; in some cases, such publications are quoted. A list of the papers whose contents were published elsewhere is included and the places of publication are indicated. Individual articles examine theories of mass service, spectral instruments, numbers, games, and certain functions, and discuss the theorems of Shannon, Markov's chains, and certain processes, quantities, and functions. Such items as the method of least squares, the stochastic, Markov's and diffusion processes, measures and their applications, a scheme of Bernoulli experiments, Markov-type random fields, visible distribution of stars, Brownian motion, capacity of radio channels, and defective products are considered. No personalities are mentioned. References accompany some of the articles.

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S/044/61/000/005/014/025
C111/C444

16.6100

AUTHOR: Sarmanov, O. V.

TITLE: On the discrete limit theorem for an inhomogenous Markov chain with two states

PERIODICAL: Referativnyy zhurnal, Matematika, no. 5, 1961, 4, abstract 5V16.("Sibirsk. matem. zh.", 1960, 1, no. 1, 117 - 138)

TEXT: An unbounded sequence of test-series is considered, connected in a simple inhomogenous Markov chain. The n^{th} series consists of n tests; with every test two results are connected - the occurence of the event A and the occurence of the opposite event $\bar{A}$. It is settled which conditions the initial probability and the transition probability have to satisfy such that a discrete limit distribution does exist; analytic expressions are given for the limit probabilities of an s-times (s = 0,1,2...) occurence of the event A in a series of n tests, for its generating function and for the characteristic function of the limit distribution. $p^{(n)}$ be the probability of A in the first test or the initial probability; $\alpha_k^{(n)}$, $\beta_k^{(n)}$ (k = 2,3,...,n)

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be the transition probabilities of A, respectively $\bar{A}$, in the $(k-1)^{th}$ test to A in the k^{th} test of the n^{th} series. $P_s^{(n)}$ be the probability of an s-times occurence of A in a series with n tests. It is said that a sequence of test series has a discrete probability distribution, if for all s = 0,1,2... there exist the limits:

$$\lim_{n\to\infty} P_s^{(n)} = P_s, \qquad (1)$$

where

$$\sum_{s=0}^{\infty} P_s = 1, \qquad (2)$$

A discrete limit distribution of the probabilities is searched, and the basic theorem on the necessary and sufficient conditions for their existence is proved. One assumes that the following conditions are satisfied: 1) there always exists the limit of the initial probability:

$$\lim_{n\to\infty} p^{(n)} = p \quad (0 \leqslant \rho \leqslant 1), \qquad (3)$$

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On the discrete limit theorem... S/044/61/000/005/014/025
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2) $$\lim_{n\to\infty} \sup_{2 \leq k \leq n} \beta_k^{(n)} = 0. \qquad (4)$$

The contents of the basic theorem is formed by the proof of the fact that under the assumption of (3) and (4), it is necessary and sufficient for the existence of a discrete limit distribution of the probabilities (for arbitrary initial limit probabilities) that the following limits do exist:

$$\left.\begin{aligned} &\lim_{n\to\infty} \sum_{l=2}^{n} \beta_l^{(n)} = \gamma < \infty; \\ &\lim_{n\to\infty} \sum_{l=2}^{n-1} \beta_l^{(n)} \alpha_{l+1}^{(n)} = \gamma_2, \\ &\lim_{n\to\infty} \sum_{l=2}^{n-k} \beta_l^{(n)} \alpha_{l+1}^{(n)} \alpha_{l+2}^{(n)} \ldots \alpha_{l+k}^{(n)} = \gamma_{k+1}, \end{aligned}\right\} \qquad (5)$$

$$\ldots\ldots\ldots\ldots\ldots\ldots$$

$$\lim_{n\to\infty} \alpha_2^{(n)} \alpha_3^{(n)} \ldots \alpha_k^{(n)} = \pi_k \quad (k = 2, 3, \ldots) \qquad (6)$$

and that the following conditions are satisfied:

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On the discrete limit theorems... S/044/61/000/005/014/025
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$$\lim_{k\to\infty} \pi_k = 0, \quad (7)$$

$$\lim_{k\to\infty} \gamma_k = 0, \quad (8)$$

It is proved: For the existence of the limits (1), the existence of the limits (5) and (6) is necessary and sufficient; for the existence of the relation (2), it is necessary and sufficient that (7) and (8) is satisfied. An analytic expression for the limit probabilities P_s is obtained; this fact permits later on to obtain expressions for the characteristic and generating functions of the limit distribution. Several examples refer to the determination of the characteristic functions of the limit distribution of a homogenous chain and of an inhomogenous cyclic chain, to the proof that the conditions (5) are independant from each other, and to the fact that from the existence of the first k limits (5), the existence of the $(k-1)^{th}$ limit does not follow for every k = 1, 2,...

(Abstracter's note: Complete translation.)

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S/039/60/052/004/001/002
C111/C222

16.6100

AUTHORS: Sarmanov, O.V., and Zak-harov, V.K. (Moscow)

TITLE: Measures of the Dependence Between Random Terms and Spectra of Stochastic Kernels and Matrices

PERIODICAL: Matematicheskiy sbornik, 1960, Vol.52, No.4, pp.953-990.

TEXT: The authors consider two continuous dependent random variables in $\Omega = [a \leq x \leq b,\ c \leq y \leq d]$. Let $F(x,y)$ be the distribution density of x and y; let $p(x)$ and $P(y)$ be the a priori distribution densities of x and y. Let

$$(0.1)\begin{cases} F(x,y) \geqslant 0, \quad \int_a^b\int_c^d F(x,y)\,dxdy = 1, \\ p(x) = \int_c^d F(x,y)\,dy > 0, \quad P(y) = \int_a^b F(x,y)\,dx > 0, \\ \int_a^b\int_c^d \frac{F^2(x,y)}{p(x)P(y)}\,dxdy < \infty . \end{cases}$$

The random terms shall have the first and second moments m_x, m_y, m_{xy},

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Measures of the Dependence Between Random Terms and Spectra of Stochastic Kernels and Matrices

σ_x^2, σ_y^2 so that the correlation coefficient

$$(1.1) \qquad R_{xy} = \frac{m_{xy} - m_x m_y}{\sigma_x \sigma_y}$$

has a sense. The authors seek functions $\varphi(x), \psi(y)$ with the property that their correlation coefficient characterizes completely the dependence between x and y so that from $R_{\varphi\psi} = 0$ it follows that x and y are independent. It is stated that the determination of φ and ψ leads to an isoperimetric variation problem for which φ and ψ under certain conditions give a maximum to the form

$$(1.3) \qquad L(\varphi, \psi) = \int_a^b \int_c^d \varphi(x)\psi(y)F(x,y)dx\,dy$$

Definition 3: $R^* = \frac{1}{\lambda_1}$, where λ_1 is the first eigennumber of the kernel $\frac{F(x,y)}{\sqrt{p(x)P(y)}}$, is called the maximal correlation coefficient.

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Measures of the Dependence Between Random Terms and Spectra of Stochastic Kernels and Matrices

Theorem 1.1: For the independence of the random terms x and y it is necessary and sufficient that the maximal correlation coefficient equals zero.

Let $A_1, A_2, \ldots, A_n, \quad P(A_i A_j) = 0, \quad i \neq j$
$B_1, B_2, \ldots, B_m, \quad P(B_k B_l) = 0, \quad k \neq l$
be two complete series of incompatible events. Let the dependence between these schemes be given by the rectangular correlation table $\{p_{ij}\}$ $(i=1,2,\ldots,n;\ j=1,2,\ldots,m)$, where

$$(0.3)\quad \begin{cases} p_{ij} = P(A_i B_j) \geqslant 0, \\ p_i = \sum_{j=1}^{m} p_{ij} = P(A_i) > 0, \quad P_j = \sum_{i=1}^{n} p_{ij} = P(B_j) > 0, \\ \sum_{i=1}^{n} \sum_{j=1}^{m} p_{ij} = \sum_{i=1}^{n} p_i = \sum_{j=1}^{m} P_j = 1. \end{cases}$$

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Measures of the Dependence Between Random Terms and Spectra of Stochastic Kernels and Matrices

Let besides

(0.4) $p_{ij} = p_{ji}$ $(i,j=1,2,\ldots,n)$, $m = n$, $P_j = p_j$ $(j=1,2,\ldots,n)$

(symmetric case). The first eigennumber $R^{*} = \frac{1}{\lambda_1}$ of the matrices

$\left\{\frac{p_{ij}}{\sqrt{p_i p_j}}\right\}$, $\left\{\frac{p_{ij}}{p_i}\right\}$ $(i,j=1,2,\ldots,n)$ is called the maximal correlation

coefficient (definition 4). Here, too, it holds theorem 1. In the unsymmetric case, where only (0.3) is valid, two quadratic symmetric matrices

(1.16) $\left\{\frac{p_{ij}^{(1)}}{\sqrt{p_i p_j}}\right\}$ $(i,j=1,2,\ldots,n)$, $\left\{\frac{p_{ij}^{(2)}}{\sqrt{P_i P_j}}\right\}$ $(i,j=1,2,\ldots,m)$

are formed, where

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Measures of the Dependence Between Random Terms and Spectra of Stochastic Kernels and Matrices

$$(1.17)\quad p_{ij}^{(1)} = \sum_{k=1}^{m} \frac{p_{ik}p_{jk}}{p_k}, \qquad p_{ij}^{(2)} = \sum_{k=1}^{n} \frac{p_{ki}p_{kj}}{p_k}.$$

Here the correlation coefficient between the first eigenvectors of the matrices (1.16) is the maximal correlation coefficient.
Given the correlation table $\{p_{ij}\}$, $p_{ij} = p_{ji}$; $i,j=1,2,\ldots,n$.
Definition: The table $\{p_{ij}\}$ and the corresponding stochastic matrix $\left\{\frac{p_{ij}}{p_i}\right\}$ is called indifferent for the arithmetization if the correlation coefficient (calculated with the aid of $\{p_{ij}\}$) between two arbitrary equally distributed vectors having each at least two different coordinates, is always one and the same constant.
Theorem 2.1: In order that the correlation table is indifferent for the arithmetization it is necessary and sufficient that it has the form

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Measures of the Dependence Between Random Terms and Spectra of Stochastic Kernels and Matrices

(2.6)
$$\left\| \begin{matrix} p_1^2\left[1+R\left(\frac{1}{p_1}-1\right)\right] & p_1p_2(1-R) & \dots & p_1p_n(1-R) \\ p_1p_2(1-R) & p_2^2\left[1+R\left(\frac{1}{p_2}-1\right)\right] & \dots & p_2p_n(1-R) \\ \dots & \dots & \dots & \dots \\ p_1p_n(1-R) & p_2p_n(1-R) & \dots & p_n^2\left[1+R\left(\frac{1}{p_n}-1\right)\right] \end{matrix} \right\| \quad (2.6)$$

where R is the constant mentioned in the preceding definition.
Conclusion: R is the maximal correlation coefficient corresponding to the table (2.6).
Theorem 2.2: In order that the stochastic matrix is indifferent for the arithmetization it is necessary and sufficient that its spectrum has the form $1, \underbrace{\lambda^{-1}, \lambda^{-1}, \dots, \lambda^{-1}}_{(n-1)\ \text{times}}$.

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Measures of the Dependence Between Random Terms and Spectra of Stochastic Kernels and Matrices

Given two dependent finite schemes of only possible incompatible events $(A_1^{(1)}, A_2^{(1)}, \ldots, A_n^{(1)})$ and $(A_1^{(2)}, A_2^{(2)}, \ldots, A_n^{(2)})$ with a symmetric correlation table $\{p_{ij}\}$. The symmetrizable stochastic matrix

$\wp = \left\{\frac{p_{ij}}{p_i}\right\}$, $i,j=1,2,\ldots,n$ is called the matrix of the given schemes of events. If two events, e.g. $A_1^{(i)}$ and $A_2^{(i)}$ are united: $A_*^{(i)} = A_1^{(i)} \cup A_2^{(i)}$ then the correlation table changes according to the scheme

$$\left\| \begin{array}{cc|ccc} p_{11} & p_{12} & p_{13} & \cdots & p_{1n} \\ p_{12} & p_{22} & p_{23} & \cdots & p_{2n} \\ \hline p_{13} & p_{23} & p_{33} & \cdots & p_{3n} \\ \cdot & \cdot & \cdot & \cdots & \cdot \\ p_{1n} & p_{2n} & p_{3n} & \cdots & p_{nn} \end{array} \right\| \to \left\| \begin{array}{cccc} p'_{11} & p'_{13} & \cdots & p'_{1n} \\ p'_{13} & p_{33} & \cdots & p_{3n} \\ \cdot & \cdot & \cdots & \cdot \\ p'_{1n} & p_{3n} & \cdots & p_{nn} \end{array} \right\|,$$

Measures of the Dependence Between Random Terms and Spectra of Stochastic Kernels and Matrices

where $p'_{11} = p_{11}+2p_{12}+p_{22}$, $p'_{13} = p_{13}+p_{23}, \dots, p'_{1n} = p_{1n}+p_{2n}$. Let $1, \frac{1}{\lambda'_1}, \frac{1}{\lambda_2}, \dots, \frac{1}{\lambda'_{n-2}}$ be the spectrum of the eigennumbers of the new matrix.

Theorem 3.1 states that $\frac{1}{\lambda'_i} = \sum_{k=i}^{n-1} \frac{a_{ik}^2}{\lambda_k}$ $(i=1,2,\dots,n-2)$, where $\frac{1}{\lambda_k}$ are the eigennumbers of the old matrix and the sum of the weights a_{ik}^2 always equals 1.

Theorem 3.2 generalizes this result by a multiple application of the last formula to the case where not two but several events are united so that the new matrix gets a certain order $m < n$.

Finally the authors consider the connection between the normal correlation coefficient and other characteristics of dependence between probability schemes. A measure of the dependence the vanishing of which is equivelent with the independence of the random terms, is called "objective".

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Measures of the Dependence Between Random Terms and Spectra of Stochastic Kernels and Matrices

Theorem 4.1: In order that the ordinary correlation coefficient is an objective measure of dependence it is necessary and sufficient that it is identical with the maximal correlation coefficient. In the symmetric case, the ordinary correlation coefficient is given by

$$R = \sum_{i,j=1}^{n} p_{ij} x_i x_j \quad \text{(discrete case)} \tag{4.7}$$

or

$$R = \int_a^b \int_a^b xy\, F(x,y)\, dx\, dy \quad \text{(continuous case)}. \tag{4.8}$$

Theorem 4.2: The correlation coefficient between two equally distributed random terms having at least two different values and combined with a positive definite correlation table, satisfies the inequality

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Measures of the Dependence Between Random Terms and Spectra of Stochastic Kernels and Matrices

$$(4.12) \qquad \inf_i \frac{1}{\lambda_i} \leq R \leq \sup_i \frac{1}{\lambda_i} = R^*.$$

The authors mention A.N.Kolmogorov. There are 9 references: 6 Soviet, 1 German and 2 American.

SUBMITTED: March 26, 1959

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SARMANOV, O.V.

Investigation of stationary Markov processes by the method of expansion by eigenfunctions. Trudy/Mat. inst. no.60:238-261 '61. (MIRA 14:10)

(Markov processes)
(Eigenfunctions)

GEL'FOND, A.O.; SARMANOV, O.V.

Sergei Natanovich Bernshtein; on his 80th birthday. Izv.AN SSSR Ser.mat. 24 no.3:309-314 My-Je '61. (MIRA 14:4)

(Bernshtein, Sergei Natanovich, 1880-)

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AUTHOR: Sarmanov, O. V.

TITLE: Investigation of stationary Markov processes by the method of expansion in a series of eigenfunctions

SOURCE: Akademiya nauk SSSR. Matematicheskiy institut. Trudy. v. 60, 1961, 238 - 261

TEXT: The author considers stationary Markov processes which are represented by a density $p(t,x,y) = p(t,y,x)$. The kernel $K(t,x,y) = p(t,x,y)/\sqrt{(\int pdx)(\int pdy)}$ satisfies the inequality $\iint K^2(t,x,y)dxdy < \infty$ and the Markov equation $K(t_1 + t_2,x,y) = \int K(t_1,x,z)K(t_2,y,z)dz$. First, the author derives a necessary and sufficient condition for s-continuity (continuity of the eigenvalues $r_k(t)$ and of the eigenfunctions $\varphi_k(x,t)$ of the kernel K) of a stationary Markov process. Next, in connection with continuous processes, the equations of Kolmogorov (UMN, 1938, vyp. 5, 5 - 41) are investigated. Finally, the author considers polynomial processes. For the cases of the

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Investigation of stationary Markov ... B112/B125

polynomials of Gegenbauer, Chebyshev, and Jacobi, it is shown that the eigenfunctions of the kernel K constitute a complete system of orthogonal polynomials. Numerous examples illustrate the general part of the paper. There are 2 tables and 18 references: 10 Soviet and 8 non-Soviet. The two most recent references to English-language publications read as follows: G. N. Watson. Notes on generating functions of polynomials: (3). The Journ. London Math. Soc., 1933, 8, 289 - 292, G. N. Watson. Notes on generating functions of polynomials: (4). The Journ. London Math. Soc., 1934, 9, 22 - 28.

4

Card 2/2

SARMANOV, ~~O.V.~~

False correlation between random quantities. Trudy Mat.inst. 64: 173-184 '61. (MIRA 15:3)
(Correlation (Statistics)) (Distribution (Probability theory))

SARMANOV, O.V.

Properties of a two-dimensional density defining a stationary Markov process. Dokl. AN SSSR 136 no.6:1295-1297 F '61. (MIRA 14:3)

1. Matematicheskiy institut im. V. A. Steklova AN SSSR. Predstavleno akademikom S. N. Bernshteynom.
(Markov processes)

SARMANOV, O.V.

MARKOV PROCESSES

Transactions of the 6th Conf. on Probability Theory and Mathematical Statistics and of the Symposium on Distributions in Infinite-Dimensional Spaces held in Vil'nyus, 5-10 Sep '60. Vil'nyus Gospolitizdat Lit SSR, 1962. 493 p. 2500 copies printed

ZAKHAROV, V.K.; SARMANOV, O.V.

Consolidation of the states in a Markov chain and the stationary variation of the spectrum. Dokl. AN SSSR 160 no.4:762-764 F '65. (MIRA 18:2)

1. Matematicheskiy institut im. V.A. Steklova AN SSSR. Submitted July 21, 1964.

L 28895-66 EWT(d)/T IJP(c)

ACC NR: AP6019165 SOURCE CODE: UR/0020/65/162/002/0281/0284

23
B

AUTHOR: Sarmanov, O. V.

ORG: Mathematics Institute im. V. A. Steklov, AN SSSR (Matematicheskiy institut AN SSSR)

TITLE: Characteristic coefficients of random distributions

SOURCE: AN SSSR. Doklady, v. 162, no. 2, 1965, 281-284

TOPIC TAGS: distribution function, polynomial, mathematic transformation

ABSTRACT: The exponential moments $m_k = Mx^k = \int_{-\infty}^{\infty} x^k dF(x), \quad k = 1, 2, \ldots,$ in contrast to characteristic function $\varphi(t) = Me^{itx}$, can easily be evaluated according to statistical observations and, in the cases where they exist, they quite fully characterize the distribution F(x). But since moments do not exist for many distributions, it is of interest to consider other characteristics which would permit a statistical evaluation, would exist for all distributions and, like characteristic functions, would completely define this distribution. The author suggests considering for such characteristics the sequence of complex numbers $\{\lambda(k)\}$, which he calls characteristic coefficients:

$$\lambda(k) = Me^{2ik \operatorname{arc\,tg} x} = \omega(k) + i\tilde{\omega}(k), \quad k = 1, 2, \ldots,$$

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ACC NR: AP6019165

it being given that

$$\omega(k) = M\cos 2k \operatorname{arc\,tg} x = MT_{2k}\left(\frac{1}{\sqrt{1+x^2}}\right) = M(1+x^2)^{-k}\sum_{l=0}^{k}(-1)^l C_{2k}^{2l}x^{2l},$$

$$\tilde{\omega}(k) = M\sin 2k \operatorname{arc\,tg} x = MU_{2k}\left(\frac{1}{\sqrt{1+x^2}}\right) = M(1+x^2)^{-k}\sum_{l=1}^{k}(-1)^{l-1}C_{2k}^{2l-1}x^{2l-1},$$

where $T_{2k}(y)$ and $U_{2k}(y)$ are Chebyshev polynomials of the first and second kind respectively. Easily found with the aid of known generating functions of Chebyshev polynomials is the generating function of the characteristic coefficients:

$$\psi(u) = M\frac{\frac{1-u^2}{2}(1+x^2)+2iux}{(1+u)^2x^2+(1-u)^2} = \frac{1}{2}+\sum_{k=1}^{\infty}\lambda(k)u^k, \quad 0 < u < 1.$$

Generating function $\Psi(u)$ is said to be a Chebyshev transformation of the distribution F(x) and is designated by $\mathfrak{T}_u(F(x))$. The following fundamental theorem is proved: The sequence of characteristic coefficients defined by equation (1) and $m_1 = M\,2\operatorname{arc\,tg} x$ completely characterizes any probability distribution, it being possible to consider the above Chebyshev transformation in place of sequence (1). This paper was presented by Academician S. N. Bernshteyn on 28 October 1964. Orig. art. has: 21 formulas. [JPRS]

SUB CODE: 12 / SUBM DATE: 20Nov64 / ORIG REF: 002

Card 2/2

SARMANOV, O.V.

Method of characteristic coefficients. Dokl. AN SSSR 163 no.5:1081-1084 Ag '65. (MIRA 18:8)

1. Matematicheskiy institut im. V.A.Steklova AN SSSR. Submitted January 25, 1965.

L 43141-66 EWT(d) IJP(c)
ACC NR: AP6013889 SOURCE CODE: UR/0020/66/167/006/1238/1241

32
B

AUTHOR: Smirnov, N. V. (Corresponding member AN SSSR); Sarmanov, O. V.; Zakharov, V. K.

ORG: Mathematics Institute im. V. A. Steklov, Academy of Sciences SSSR (Matematicheskiy institut Akademii nauk SSSR)

TITLE: Local limit theorem for the number of transitions in a Markov chain and its application

SOURCE: AN SSSR. Doklady, v. 167, no. 6, 1966, 1238-1241

TOPIC TAGS: Markov process, transition probability

ABSTRACT: A simple homogeneous Markov chain with s + 1 states E_i, i = 1, 2, ..., s + 1 and a positive matrix of transition probabilities $\{P_{ij}\}$, $P_{ij} > 0$, i, j = 1, 2, ..., s + 1 is considered. It is assumed that the initial probability of E_i is $P_i(1) > 0$. A chain consisting of s states among whose elements must be distributed in a definite way a series of states E_{s+1} is treated. It is noted that the expression for the number of different chains of length n consisting of s + 1 states reduced earlier by the same author (Vestn. LGU, No. 11, 47, 1955) is in error. It is pointed out that the assumption that P_{ij} be always positive is not necessary. Orig. art. has: 14 formulas.

SUB CODE: 12/ SUBM DATE: 08Dec65/ ORIG REF: 003/ OTH REF: 001
Card 1/1 MLP UDC: 519.217

GNEDENKO, B.V.; KOLMOGOROV, A.N.; PROKHOROV, Yu.V.; SARMANOV, O.V.

Work of N.V. Smirnov in mathematical statistics; on his 60th birthday. Teor. veroiat. i ee prim. 5 no. 4:436-440 '60. (MIRA 13:12)

(Smirnov, Nikolai Vasil'evich, 1900-)

SARMANOV, O.V.; ZAKHAROV, V.K. (Moskva)

Measures of dependency between the random magnitudes and spectra of stochastic kernels. Mat. sbor. 52 no. 4:953-990 D '60. (MIRA 14:2)

(Probabilities)

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S/020/61/136/006/004/024
C 111/ C 333

16.6100 (also 1031)

AUTHOR: Sarmanov, O. V.

TITLE: On the properties of a two-dimensional density defining a stationary Markov process

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 136, no. 6, 1961, 1295-1297

TEXT: In (Ref. 1: DAN, 132, No. 4 (1960) the author showed that the symmetric density of the two-dimensional distribution p(t,x,y) with the continuous parameter t defines a stationary Markov process if and only if

$$p(t,x,y) = p(x)p(y)\left[1 + \sum_{k=1}^{\infty} e^{-\lambda_k t}\varphi_k(x)\varphi_k(y)\right] \qquad (1)$$

holds, where $p(x) = \int_b^a p(t,x,y)dy$; $\varphi_k(x)$ are with the weight p(x) on [a,b] orthogonally normed eigenfunctions of the kernel $p(t,x,y)/\sqrt{p(x)p(y)}$ and $0 < \lambda_1 \leq \lambda_2 \leq \ldots\ldots$.

In the present paper the following theorems are proved:

Theorem 1: If p(x) and $\varphi_k(x)$, k = 1,2,..., , are continuous in

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On the properties of a two-dimensional..C 111/ C 333

$[a,b]$ and $p(x) \neq 0$ on $[a,b]$, then the finite sum

$$F(t,x,y)=p(x)p(y)\left[1+\sum_{k=1}^{n} e^{-\lambda_k t}\varphi_k(x)\varphi_k(y)\right], \qquad (3)$$

where $n > 1$, is of variable sign for sufficiently small $t > 0$ in the domain

$$\Omega = \begin{bmatrix} a \leq x \leq b \\ \\ a \leq y \leq b \end{bmatrix}.$$

Theorem 2: There exist (discontinuous) stationary Markov processes with arbitrary apriori density $p(x)$ and discontinuous $\varphi_k(x)$, where the density of these processes is representable by finite sums of the form (3).

For the proof of theorem 2 the author constructs such a process for n = 1. B. A. Sevast'yanov called the author's attention to the possibility of such a construction.

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S/020/61/136/006/004/024

On the properties of a two-dimensional..C 111/ C 333

There is 1 Soviet-bloc and 1 non-Soviet-bloc reference.

ASSOCIATION: Matematicheskiy institut imeni V. A. Steklova Akademii nauk SSSR (Institute of Mathematics imeni V. A. Steklov of the Academy of Sciences USSR)

PRESENTED: October 10, 1960, by S. N. Bernshteyn, Academician

SUBMITTED: June 26, 1960

Card 3/3

SMOL'NIKOV, Ye.A.; SARMANOVA, L.M.

Salt mixtures used in Czechoslovakia and the German Democractic Republic for the heat treatment of steel products. Metalloved. i term. obr. met. no.11:56-57 N '63. (MIRA 16:11)

SARMAROVA, Ye. S. and LEVKOVICH, Ye. M.

SARMANOVA, Ye. S.

"The Results of and Prospects for the Study of the Problems of Tick-Borne Encephalitis," an article presented at the Interoblast' Scientific-Practical Conference of Medical Workers of the Urals, Siberia, and the Far East, Krasnoyarsk, 8-12 Dec 55.

Sum. No. 1047, 31 Aug 56

SARMANOVA, Ye.S.

Spring summer tick-borne encephalitis." N.N. Gorchakovskii, Reviewed by E.S. Sarmanova. Zhur.mikrobiol.epid. i immun. no.6: 112-113 Je '55. (MLRA 8:9)
(GORCHAKOVSKII, N.N.)(ENCEPHALITIS)

SHAPOVAL, A.N.; SARMANOVA, Ye.S. (Leningrad)

An unusual case of encephalomyelitis. Klin. med. 33 no.9:75-80 S '55.
(MLRA 9:2)

1. Iz kliniki nervnykh bolezney Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova (nach. general-mair o meditsinskoy sluzhby S.I. Karchikyan) i laboratorii entsefalitov (zav. prof. Ye. N. Levkovich) Instituta virusologii imeni D.I. Ivanovskogo AMN SSSR (dir.-prof. P.N. Kosyakov)
(ENCEPHALOMYELITIS,
unusual cases)

SARMANOVA, Ye.S.

Study of virusemia in white mice and rats infected with the viruses of spring-summer encephalitis and louping ill. Vop.virus. 1 no.2: 27-31 Mr-Ap '56. (MLRA 10:1)

1. Institut virusologii imeni D.I.Ivanovskogo AMN SSSR, Moskva.
(ENCEPHALITIS, EPIDEMIC, experimental,
louping ill & Russian tick-bone encephalitis in white mice & rats (Rus))

SARMANOVA, Ye.S.; DUMINA, A.L.

Study of virusemia in wild animals and birds experimentally infected with the tick-borne spring-summer encephalitis virus. Vop.virus. 1 no.3:23-26 My-Je '56. (MLRA 10:1)

1. Institut virusologii imeni D.I.Ivanovskogo AMN SSSR, Moskva.
(ENCEPHALITIS, EPIDEMIC, experimental,
in wild animals (Rus))

LEVKOVICH, Ye.N.; SARMANOVA, Ye.S.

New data on the epidemiology, prevention and diagnosis of spring-summer tick-borne encephalitis. Sov.med. 20 no.11:23-29 N '56. (MLRA 10:1)

1. Iz laboratorii entsefalitov (zav. - prof. Ye.N.Levkovich) Inst. virusologii imeni D.I.Ivanovskogo (dir. - prof. P.N.Kosyakov) Akad. med. nauk SSSR.
(ENCEPHALITIS, EPIDEMIC, prev. and control
tick-borne vernal-aestival encephalitis in Russia)

SARMANOVA, YE.S.

SHPOVAL, A.N.; SARMANOVA, Ye.S. (Leningrad)

Clinical manifestations of epidemic encephalitis in a district in Western Siberia. Klin.med. 35 [i.e.34] no.1 Supplement:46 Ja '57. (MIRA 11:2)

1. Iz laboratorii entsefalitov (zav. - prof. Ye.N.Levkovich) Instituta virusologii imeni D.I.Ivanovskogo AMN SSSR (dir. - prof. P.N.Kosyakov)

(SIBERIA, WESTERN--ENCEPHALITIS)

SARMANOVA, Ye.S.

SHAPOVAL, A.N.; SARMANOVA, Ye.S. (Leningrad)

Incidence of epidemic encephalitis during the winter. Klin.med. 35 [i.e.34] no.1 Supplement:46 Ja '57. (MIRA 11:2)

1. Iz Instituta virusologii imeni D.I.Ivanovskogo AMN SSSR (dir. - prof. P.N.Kosyakov)
(ENCEPHALITIS)

SARMANOVA, Ye.S.; CHUMACHENKO, G.G.

Etiology of Vilyui encephalomyelitis. Vop. psikh. i nevr. no.5: 15-20 '59. (MIRA 14:5)

1. Institut virusologii imeni D.I.Ivanovskogo AMN SSSR (direktor - prof. P.N.Kosyakov).
(ENCEPHALOMYELITIS)

SARMANOVA, YE. S., Moscow:

"Course of tick-borne encephalitis virus infection in immune organism."

report submitted for the Symposium on the Biology of Viruses of Tick Borne Encephalitis Complex, Smolenice Czechoslovakia, 11-14 Oct 60.

CHUMAKOV, M.P.; L'VOV, D.K.; SARMANOVA, Ye.S.; GOL'DFARB, L.G.; NAYDICH, G.N.; CHUMAK, N.F.; VIL'NER, L.M.; ZASUKHINA, G.D.; IZOTOV, V.K.; ZAKLINSKAYA, V.A.; UMANSKIY, K.G.

Comparative study of the epidemiological effectiveness of vaccinations with tissue culture and brain vaccines against tick-borne encephalitis. Vop. virus. 8 no.3:307-315 My-Je'63. (MIRA 16:10)

1. Institut poliomyelita i virusnykh entsegalitov AMN SSSR, Moskva i Kemerovskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya.. (ENCEPHALITIS—PREVENTIVE INOCULATION)

CHUMAKOV, M.P.; KARPOVICH, L.G.; SARMANOVA, Ye.S.; SERGEYEVA, G.I.; BYCHKOVA, M.V.; TAPUPERE, V.O.; LIBIKOVA, Ye.O.; Mayyer, V.; RZHEGACHEK, R. [Rehacek, R.]; KOZHUKH, O. [Kozuch, O.]; ERNEK, E.

Isolating from the tick Ixodes persulcatus and from sick persons in Western Siberia a virus differing from the pathogen of tick-borne encephalitis. Vop. virus. 8 no.1:98-99 Ja-F'63. (MIRA 16:6)

(VIRUSES) (ENCEPHALITIS--MICROBIOLOGY)

L 25987-66 EWT(1)/T JK

ACC NR: AP6016098 (N) SOURCE CODE: UR/0402/65/000/006/0663/0669

AUTHOR: Sarmanova, Ye. S.--Sarmanova, E. S.; Izotov, V. K.; Pivanova, G. P.; Bannova, G. G.; Bychkova, M. V.

ORG: Institute of Poliomyelitis and Viral Encephalitis, AMN SSSR, Moscow (Institut poliomiyelita i virusnykh entsefalitov AMN SSSR)

TITLE: Hemagglutinating properties of Kemerovo virus

SOURCE: Voprosy virusologii, no. 6, 1965, 663-669

TOPIC TAGS: virus, encephalitis, antigen, mouse, serum

ABSTRACT: During the spring-summer season of 1962, periodic investigation of foci of tick-borne encephalitis in Kemerovskaya Oblast resulted in the isolation of a virus producing a cytopathic effect in cell cultures of chick embryos. Strains KM-3, No 17, 32, 35, 37 were isolated from Ixodes persulcatus ticks, and strain No 98 was isolated from the blood of a healthy man bitten by a tick. In this connection, the authors present the results of an investigation of the hemagglutinating properties of Kemorovo virus, as based on tests of cultures infected with the strains named above. Antigens prepared from Kemerovo virus-containing brain tissue of suckling mice by means of the techniques used to obtain arbovirus antigens failed to agglutinate goose erythrocytes in the presence of pH = 5.7-7.4. The allantoic

Card 1/2 UDC: 576.858.25.097.34

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ACC NR: AP6016098

fluid of virus-infected chick embryos displayed hemagglutinating activity for from 14 to 40 hours following infection. Hemagglutinating activity was also detected in the cultural medium of infected chick embryo tissue and continuous swine embryo kidney cultures. The hemagglutination titers of allantoic fluid were 1:128 to 1:2,048. The specificity of the hemagglutination reaction was proved by hemagglutination-inhibition reaction with sera of guinea pigs immunized with Kemerovo virus. (To eliminate nonspecific inhibitors, the sera were treated with a 25% kaolin suspension.) Thus it can be definitely established that the investigated strains of Kemerovo virus are closely interrelated and similar from the antigenic standpoint. Orig. art. has: 7 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 07Sep64 / ORIG REF: 002 / OTH REF: 001

Card 2/2

SARMANY, D.

"Planning and Evaluating Prime Cost with Special Reference to Operative Planning and Methods of Continuous Evaluation of the Formation of Prime Cost; A Guide for our Pofessional Associations." P.17. (TOEBTERMELES, Vol. 8, No. 4, April 1954, Budapest, Hungary)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955, Uncl.