"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 4147-66

ACCESSION NR: AP5023773 ENCLOSURE: 01

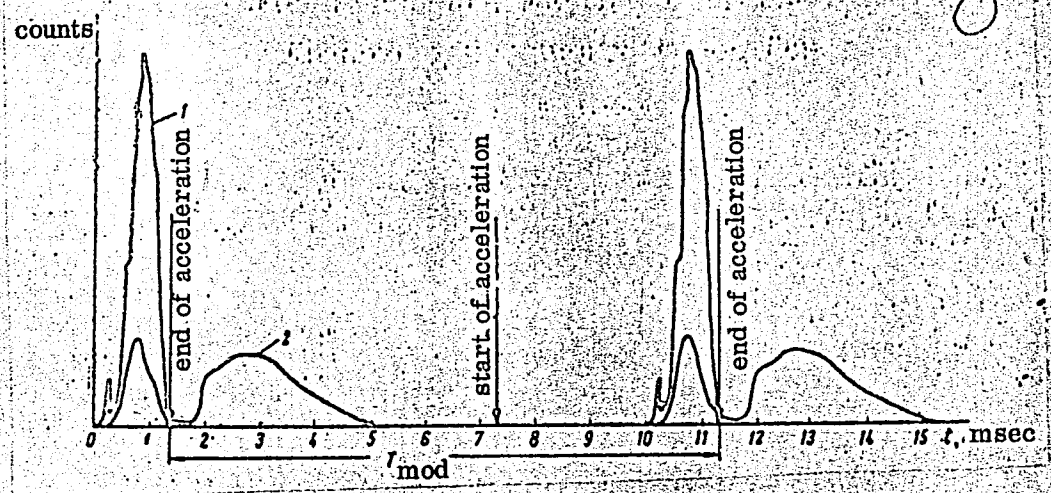


Figure 1. Shape of OIYaI synchrocyclotron beam pulses. 1- standard operation; 2 - extended beam pulse operation.

Card 4/4

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 07919-67 EWT(m) IJP(c)

ACC NR: AP6021991 SOURCE CODE: UR/0120/66/000/003/0019/0022

39
35
B

AUTHOR: Danilov, V. I.; Yenchevich, I. B.; Rozanov, Ye. I.; Tomilina, T. N.; Shestov, A. V.

ORG: Joint Nuclear Research Institute, Dubna (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: Control of a 680 Mev synchrocyclotron 19

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1966, 19-22

TOPIC TAGS: synchrocyclotron, particle acceleration, coincidence circuit

ABSTRACT: The paper presents a system of control of various synchrocyclotron operating conditions. A phototransducer, having an optico-mechanical connection with a high frequency generator furnishes square pulses of positive polarity. These pulses are used for the regulation of the generator and for synchronizing the operating auxiliary apparatus with the accelerator. A flow chart of this operation is shown. In the continuous mode of operation, the capture and acceleration of the particles occurs in each period of modulation. The synchronization pulses, coincident with the front of the phototransducer pulses, are directed into two channels. In the first of these, the actuating pulses are formed; these pulses move into the exit tube with or without time delay and then into the operator of the high frequency generator. In the second chan-

UDC: 621.384.611.2

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 07919-67

ACC NR: AP6021991

3

nel, the cut-off pulses are formed; these pulses move into the operator with a time delay, approximately equal to half the period of modulation. In the single mode, acceleration of the particles occurs with the frequency of the starting pulses. The synchronization pulse, before entering the actuating pulse channel, must go through a coincidence circuit. After leaving the coincidence circuit the pulse returns the trigger to the initial condition. Other modes of operation of this system include the single mode with damping, accumulation, increase of pulse width of beam, and operation of an ionic source with the pulse method. Lost time due to shutdown using this control scheme did not exceed 0.1% of the operating time of the accelerator. The authors thank V. I. Ivanov, Yu. V. Maksimov, and N. P. Sechenov for taking part in the construction of the apparatus. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 29Apr65/ ORIG REF: 010/ OTH REF: 001

Card 2/2 vmb

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

15

L 58861-65 EPA(w)-2/EWT(m)/EWA(m)-2 Pt-7 IJP(c) GS
ACCESSION NR: AT5007940 S/0000/64/000/000/0591/0594

AUTHOR: Danilov, V. I.; Yenchevich, I. B.; Zamolodchikov, B. I.; Marchenko, B. N.; Novikov, D. L.; Polferov, E. A.; Rozanov, Ye. I.; Savenkov, A. L.; Safonov, A. N.; Shestov, A. V.

TITLE: Increasing the internal beam current of the OIYaI synchrocyclotron to 680-Mev

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 591-594

TOPIC TAGS: synchrocyclotron, high energy accelerator

ABSTRACT: The Laboratory of Nuclear Problems of OIYaI modified the synchrocyclotron to increase the intensity of the internal beam, with the work being conducted in two directions: (a) obtaining a high-frequency program in the synchrocyclotron such that the current at the terminal radius of the accelerator would be a maximum; and (b) creating a focusing system that compensates for the defocusing action of the spatial charge at the center of the accelerator and thus increases the mean current of accelerated protons. The phase motion in the synchrocyclotron is analyzed in

Card 1/5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 58861-65

ACCESSION NR: AT5007940

0

two principal stages: first, the capture of the particles at the center of the synchrocyclotron during the accelerating regime; and second, their phase motion during the acceleration process up to the terminal radius. The equations of D. Bohm and L. Foldy (*Phys. rev.*, 72, 649 (1947)) are insufficient for the solution of the problem of the optimum capture of charged particles in the accelerating regime in synchrocyclotrons of several hundred Mev. This is explained by the fact that the growth in energy per revolution in the first stage for a constant accelerating potential ($U_0$=const.) depends upon the radius of the orbit. The curve describing the relative growth of proton energy per revolution as a function of radius was calculated by means of pictures of the dee potential field which were obtained from a model of the central region of the OIYaI synchrocyclotron in an electrolytic tank. Experimental measurements of the current at the radius $R$=30 cm determined the magnitude of $\dot{\omega}_{s\ init}$ (growth of the circular frequency in units of radians per second$^2$) that ensures optimum capture conditions. Choice of this radius necessitates excluding the influence of variations in the phase conditions during proton acceleration in the region of the middle and terminal radii. The magnitude of $\dot{\omega}_{s\ init}$ varied over a wide range with variation of the magnetic field strength at the center of the accelerator. For voltage at the dee of $U_0$=12 kilovolts and for existing geom-

Card 2/5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 58861-65

ACCESSION NR: AT5007940

0

etry of the accelerating gap, the dependence of the intensity (capture effectiveness) upon $\dot{\omega}_{s\ init}$ for the OIYaI synchrocyclotron showed the optimum value to be 2.25x $10^{10}$ rad/sec$^2$ (B.I. Zamolodchikov, et al. Preprint OIYaI P-720, Dubna, 1961). Correction of the parameters of the accelerator's resonance system in January 1961 led to a frequency program with the indicated value of $\dot{\omega}_{s\ init}$ at the beginning of acceleration, which led in turn to increasing the internal beam from 0.3 to 0.8 microamperes at the terminal radius $R$=274.5 cm. The proton current was measured by means of the induced activity of an aluminum target, according to the reaction $Al^{27}(p,3pn)Na^{24}$, obtained at radii $R$=270 to 280 cm. A target with a lead backing was calibrated against a beam of protons, extracted from the synchrocyclotron chamber, by means of a Faraday cylinder. The second stage of the work consisted in creating high-frequency characteristics of the synchrocyclotron $\omega_g=\omega_g(t)$ and $U_0=U_0(\omega_g)$ such that they ensure simultaneously the optimum conditions for the capture of the ions and their subsequent acceleration up to the terminal radius without phase loss. During selection of the frequency program of the synchrocyclotron consideration was taken of the damping of phase oscillations during the process of proton acceleration up to the terminal radius of the accelerator. Use was made of the invariance of the integral of action $J$ during the adiabatic variations of the system's parameters.

Card 3/5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 58861-65

ACCESSION NR: AT5007940

Further increase in the intensity of the synchrocyclotron was reached by introduction of additional vertical (axial) focusing of the accelerated ion beam in the central region of the accelerator. Investigations of the focusing systems demonstrated the advantage of electrostatic focusing over magnetic focusing at the center of the accelerator. The system of focusing electrodes used in the OIYaI synchrocyclotron was constructed with the possibility of regulating the gap between the dee and supplementary electrodes. Moreover, the configuration of the electric field can be varied by regulation of the arrangement of the grounded screen placed between the dee and the potential electrodes. The Hill equation can describe the motion of the ions in the accelerator's magnetic field and in the electrostatic field created by the supplementary electrodes. The optimum arrangement of the electrodes of the focusing installation was found by experimental study of the properties of the system according to the dependence of the beam current upon $U_f$ (focusing voltage in kilovolts) for various distances of the electrodes from the center of the accelerator. The internal beam current for the indicated conditions was approximately doubled, amounting at the present time to 2.2-2.3 microamperes. Orig. art. has: 7 figures.

Card 4/5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 58861-65

ACCESSION NR: AT5007940

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy, Dubna (Joint Institute of Nuclear Research)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: NP

NO REF SOV: 001 OTHER: 002

Card 5/5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

PETROV, I.T.; POVKH, B.V.; BLIKHARSKIY, B.A.; CHERNOV, V.I. [deceased]; KLITINA, S.Ye.; ROZANOV, Ye.M.; SHUFLAT, A.N.

Incidence of influenza and acute cararrhs of the upper respiratory tracts in miners of Chervonograd, Lvov-Volyn' Basin. Vrach. delo no.1:105-109 Ja'64 (MIRA 17:3)

1. Chervonogradskaya mediko-sanitarnaya chast' kombinata Ukrzapadugeol' (for Petrov, Povkh, Blikharskiy). 2. Kafedra propedevticheskoy terapii lechebnogo fakul'teta - zav. dotsent V.I.Chernov [deceased]) L'vovskogo meditsinskogo instituta ( for Klitina, Rozanov, Shuflat).

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Ye.M.

Evaluation of the therapeutic value of butadione in rheumatism and infectious nonspecific polyarthritis. Nauch.trudy L'vov.obl. terap.ob-va no.1:255-261 '61. (MIRA 16:5)

1. Kafedra propedevticheskoy terapii lechebnogo fakul'teta L'vovskogo meditsinskogo instituta (zav. kafedroy - dotsent V.I. Chernov).
(BUTADIONE) (ARTHRITIS, RHEUMATOID) (RHEUMATIC FEVER)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

MONASTYRSKIY, R.Ya.; CHERNOV, V.I., dotsent; OSNOS, M.L., dotsent; ROZANOV, Ye.M.

Further qualitative improvement of medical aid to cardiovascular patients in Lvov Province. Nauch.trudy L'vov.obl.terap. ob-va no.1:5-9 '61. (MIRA 16:5)
(LVOV PROVINCE—CARDIOVASCULAR SYSTEM—DISEASES)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu. A.

SOV/52-2-4-7/7

A Summary of Papers Presented at the Sessions of the Scientific Research Seminar on the Theory of Probabilities. Moscow, Feb-May 1957.

Teoriya Veroyatnostey i yeye Primeneniya, 1957, v. 2, no.4, pp. 478-488

is supposed that the space R is locally bicompact and has a countable basis. It is further supposed that the stochastic phenomenon is given by its finite dimensional Boolean distributions. Dobrushin, R.L., Certain classes of homogeneous denumerable Markov processes. The contents of this report have been published in Vol.2, Nr.3 of this journal. Rozanov, Yu.A., On linear interpolation of multi-dimensional stationary sequences in a Hilbert space. The contents of this report have been published in the Proceedings of the Academy of Sciences, Vol.116, Nr.6, 1957, pp.923-927. Dobrushin, R.L., On the formulation of Shannon's fundamental theorem. Let $\xi$ which takes values in some space X be a random quantity related to the transmission of information. Let there be given a space $\tilde{X}$ with some class V of distributions of pairs of quantities $(\xi, \tilde{\xi})$ where $\tilde{\xi}$ takes values from $\tilde{X}$ and it is required that the information $\tilde{\xi}$ arising in the transmission of information $\xi$ is such that the distribution of the pair $(\xi, \tilde{\xi})$ belongs to V. Let H be the

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, IU. A.

ROZANOV, IU. A. Natural mineral pigments in the RSFSR. Moskva, Gos. izd-vo mestnoi promyshl. RSFSR, 1947. 174 p. maps. (49-12325)

TP935.R69

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ZALESKIY, B.V.; ROZANOV, Yu.A.; PERVUKHINA, Ye.Ye.; TOLSTIKHINA, K.I.

Deposits of natural mineral pigments in the Moscow and Riazan districts. Trudy Inst. Geol. Nauk No.89, Petrograf. Ser. No.28, 127-49 '48. (CA 47 no.22:12143 '53)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

KOSYGIN, Yu.A.; LUCHITSKIY, I.V.; ROZANOV, Yu.A.

Experiments on gypsum deformations and its geological significance. Biul. MOIP. Otd. geol. 24 no.2:3-19 '49. (MIRA 11:5)
(Gypsum)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

CA

**The influence of unilateral pressure on the structure of pyrite ores.** T. N. Shadlun and Yu. A. Rozanov. *Izvest. Akad. Nauk S.S.S.R., Ser. Geol.* 1949, No. 3, 45-9; *Chem. Zentr.* 1950, I, 1077-8.—Three cylinders of sphalerite (I), chalcopyrite (II), and pyrite (III) ores contg. slight amts. of quartz and sericite were heated in boiling water 20-30 min. and then subjected to pressures of 10,300-20,600 kg./sq. cm. at normal temp. From an examn. of the resulting masses it is concluded that minerals such as I and II when assocd. with III and quartz possess extraordinarily great plasticity and some fluidity. This accounts for the jointing of the brittle minerals. The formation of a striated texture in the ores during regional dynamic metamorphosis and the complete soln. and recrystn. of most minerals can be explained on the basis of these findings.—M. G. Moore

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

CA

The behavior of minerals in rocks of granite composition under the influence of high pressure. I. V. Ginzburg and Yu. A. Rozanov. *Izvest. Akad. Nauk U.S.S.R., Ser. Geol.* No. 5, 138-141(1951).—A note reporting an investigation of the effects of high pressures on gneiss and granite. From samples of the two rocks, cylinders about 15 mm. in diam. and 25-30 mm. high were prepd. The amt. of pressure applied to these cylinders of rock was about 8500 kg./cc. Temps. were 15-20°. The degree of plasticity of the minerals was found to increase in the following order: quartz; feldspar; aegirite; arfvedsonite; biotite.

Gladys S. Macy

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ZALESSKIY, B.V.; ROZANOV, Yu.A.

Physicomechanical experiment in petrography. (In: Soveshchanie po eksperimental'noi mineralogii i petrografii. 4th, Moscow, 1952. Trudy, Moskva, 1953. No.2, p.22-29). (MLRA 7:3)

1. Laboratoriya fiziko-mekhanicheskikh issledovaniy gornykh porod Instituta geologicheskikh nauk Akademii nauk SSSR. (Petrology)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

In the Institute of Geological Sciences; lectures of the German scientist, P.Ramdor. Vest. AN SSSR 26 no.3:129-130 Mr '56. (MLRA 9:6)

(Witwatersrand--Gold ores)(Witwatersrand--Uranium ores)
(Geochemistry)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu. A. and ZALISSKIY, B. V.,

"The Relation of Physicomechanical Properties of Rocks to their Lithologic And Petrographic Properties," paper presented at the First All-Union Conference on Techtonophysics, Moscow, 29 January through 5 February 1957.

Institute of Geology of Deposits of Useful Minerals, Academy of Sciences USSR

Sum 1563

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

Efficient method for studying frost resistance of stones. Trudy IGEM no. 13:41-48 '58. (MIRA 11:7)

(Stone)
(Frost)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu. A.

Testing Sok carbonates for frost resistance following saturation with preliminary vacuuming. Trudy IGEM no. 13:61-64 '58. (MIRA 11:7)

(Sok Valley--Carbonates(Mineralogy))
(Frost)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

Deformation of barite under high pressure during the compressibility in all directions. Trudy IGEM no.13:76-80 '58. (MIRA 11:7)
(Barite)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

VOL'FSON, F.I.; LUKIN, L.I.; ZALESSKIY, B.V.; ROZANOV, Yu.A.

Role of the study of the structures of ore deposits and of the physicomechanical properties of rocks in the determination of conditions of localization of endogenic ore deposits. Trudy IGEM no.41:5-14 '61. (MIRA 14:8)

1. Laboratoriya struktur rudnykh poley i mestorozhdeniy Instituta geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geofiziki i Laboratoriya fiziko-mekhanicheskikh issledovaniy gornykh porod Instituta geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geofiziki.

(Ore deposits)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

S/169/61/000/009/024/056
D228/D304

AUTHOR: Rozanov, Yu. A.

TITLE: The influence of the frequency of the feeding stress on the operation of the magnesene gear of the M-48 (M-48) anemorumbometer

PERIODICAL: Referativnyy zhurnal. Geofizika, no. 9, 1961, abstract 9B73 (Tr. Nauchno-issled. in-ta gidrometeorol. pribo-rostr., no. 9, 1960, 60-63)

TEXT: The parameters of the magnesene gear, used for the automatic distance recording of the angle magnitude in the M-48 anemorumbometer, were investigated. Data were obtained about the relationship of the synchronizing moment which determines the precision of the magnesene gear's operation to the frequency of the feeding stress and the inlet power. The possibility is shown of working under frequency and stress conditions differing from the normal. The bases are given with respect to the use of dry batteries for supplying the circuit with the employment

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

The influence of...

S/169/61/000/009/024/056
D228/D304

of a transformer--working on the principle of the blocking generator--in the semiconductor triodes. [Abstracter's note: Complete translation.]

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.; KRISTAL'NYY, B.V.; NEKRASOV, Ye.M.; PASHKOVSKAYA, M.D.

Changes in the pores of enclosing rocks in some deposits of northern Tajikistan. Trudy IGEM no.41:171-177 '61. (MIRA 14:8)
(Tajikistan--Ore deposits) (Porosity)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

Porosity of rocks and its role in the localization of endogenous ores. Geol. rud. mestorozh. no.2:57-65 Mr-Ap '61. (MIRA 14:5)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR.
(Porosity) (Ore deposits)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

Some characteristics of the physical properties of limestones and dolomites of different origin. Trudy IGEM no.43:3-6 '61. (MIRA 14:10)

(Limestone) (Dolomite)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

Deformation of carbonate rocks under high pressures and increased temperatures. Trudy IGEM no.43:120-123 '61. (MIRA 14:10)

(Ural Mountains—Rocks, Carbonate)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yuriy Alekseyevich; ZALESSKIY, B.V., prof., otv.red.; SHEYNMAN, V.S., red.izd-va; YEGOROVA, N.R., tekhn.red.

[Experimental investigation of the deformation of rocks at high pressures and temperatures up to 200°C] Eksperimental'nye issledovaniia deformatsii gornykh porod pri vysokikh davleniiakh i temperature do 200°C. Moskva, Izd-vo Akad.nauk SSSR, 1962. 82 p. (Akademiia nauk SSSR. Institut geologii rudnykh mestorozhdenii, petrografii, mineralogii i geokhimii. Trudy, no.66). (MIRA 15:7)
(Rock pressure)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

DVOROV, Ivan Mikhaylovich; ROZANOV, Yu.A., kand. geol.-miner. nauk, otv. red.

[Natural resources of Ryazan Province] Prirodnye resursy Riazanskoi oblasti. Moskva, Nauka, 1965. 233 p. (MIRA 18:9)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

ROZANOV, Yu.A. (Moskva).

A local limit theorem for lattice distributions [with summary in English]. Teor. veroiat. i ee prim. 2 no.2:275-281 '57. (MLRA 10:11)
(Limit theorems (Probability theory))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

Rozanov, Yu.A.

AUTHOR: ROZANOV, Yu.A. 20-6-7/42

TITLE: On Linear Interpolation of Stationary Processes With Discrete Time (O lineynom interpolirovanii statsionarnykh protsessov s diskretnym vremenem)

PERIODICAL: Doklady Akad.Nauk, SSSR, . 1957,Vol.116,Nr 6,pp.923-926 (USSR)

ABSTRACT: The condition for the interpolation of a stationary sequence $\int_{-\pi}^{\pi} \frac{d\lambda}{f\lambda} = \infty$ of Kolmogorov [Ref. 1] and some former results of Yaglom [Ref.2] are generalized to multi- and infinite-dimensional processes. A definition, free of coordinates, of the notion of the stationary process allows an elegant formulation of the final results. There are 3 references, 2 of which are Slavic.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova)

PRESENTED: By A.N.Kolmogorov, Academician, April 16, 1957
SUBMITTED: April 13, 1957

AVAILABLE: Library of Congress

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

Spectral theory of multidimensional random processes of discrete time. Usp.mat.nauk 13 no.2:93-142 Mr-Ap '58. (MIRA 11:4)
(Probabilities)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu. A. Cand Phys-Math Sci -- (diss) "Certain limit theorems for accidental functions." Mos, 1959. 5 pp (Acad Sci USSR. Math Inst im V. A. Steklov), 185 copies (KL, 48-59, 113)



APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

3(5) SOV/11-59-7-11/17

AUTHORS: Delitsin, I.S. and Rozanov, Yu.A.

TITLE: Experimental Data on Plastic Deformations in Quartzite

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geologicheskaya, 1959, Nr 7, pp 103-108 (USSR)

ABSTRACT: The American scientists, D.Griggs, J.Bell and P.W. Bridgeman showed by their experiments that only crumbly deformation is characteristic of quartz submitted to a high compression. Experiments by Ye.V.Tsinzerling and A.V.Shubnikov showed that a plastic deformation of quartz can occur if the natural surrounding conditions (temperature, pressure and solution) of the quartz were observed during the experiment. A small, cylindrical, 24-26 mm long and 15 mm of diameter, piece of intensely deformed quartzite was soaked for 7 days in an alkaline solution, then placed in a special steel cylinder, heated up to 200° and submitted to a pressure

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

SOV/11-59-7-11/17

Experimental Data on Plastic Deformations in Quartzite

of about 1600 kg/sq cm. After the experiment, an examination of the sample showed the following: it became slightly shorter (from 25,5 mm to 25,2); the quartz grains became bright and transparent, their dimensions increased by 1.5 to 2 times, and they were slightly bent. The formation of Dauphiné twins was also observed in diopside grains of the sample. The formation of these twins and the bending of the quartz grains proves that at least the first stage of plastic deformation was reached. There are 2 photographs, 6 diagrams, and 5 references, 4 of which are Soviet and 1 American.

ASSOCIATION: Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR Moskva, (The Institute of Geology of Mineral Deposits, Petrography, Mineralogy and Geochemistry of the AS USSR, Moscow)

SUBMITTED: March 26, 1958

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4



16(1),16(2)

AUTHORS: Volkonskiy,V.A., and Rozanov,Yu.A. SOV/52-4-2-5/13

TITLE: Some Limit Theorems for Random Functions. I

PERIODICAL: Teoriya veroyatnostey i yeye primeneniya, 1959, Vol 4, Nr 2, pp 186-207 (USSR)

ABSTRACT: The authors prove several limit theorems for random functions $H(\Delta)$ of the interval $\Delta$. The functions $H(\Delta)$ satisfy the strong mixing condition

$$(1) \qquad \sup_t \sup_{A\in\mathfrak{M}^t_{-\infty},\ B\in\mathfrak{M}^\infty_{t+\tau}} |P(AB) - P(A)P(B)| = \alpha(\tau) \to 0$$

for $\tau\to\infty$; here $\mathfrak{M}^t_s$ is the $\sigma$-algebra generated by events of the type $\{H(\Delta_1)<h_1,\ldots,H(\Delta_n)<h_n\}$, where $\Delta_k\subseteq(s,t)$ and $h_1\ldots,h_n$ are arbitrary real numbers.

In §1 the authors investigate conditions under which additive functions $H(\Delta)$ of the interval $\Delta=[s,t)$ are asymptotically normal for $t-s\to\infty$. 4 theorems, 2 lemmas, and 5 examples are given;e.g.: Theorem: Given a family of stochastic processes $\xi(t)$ which satisfy (1) and for which

Card 1/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4



$$\sigma^2(\Delta) = D\int_{\Delta} \xi(t)dt \asymp t-s\ , \quad \Delta = (t-s),$$

$$M|\xi(t)|^m \leqslant C_0$$

for a certain $m \geqslant 3$. Uniformly for all processes let

$$\alpha(\tau) = 0\left(\tau^{-\frac{m+1}{m-2}}\right).$$

Then the random variables $\eta(\Delta)$, $\Delta = (s,t)$,

$$\eta(\Delta) = \frac{1}{\sigma(\Delta)}\int_{\Delta}\left[\xi(t) - M\xi(t)\right] dt$$

are asymptotically normal for $t-s \to \infty$, i.e.

$$F_{\eta(\Delta)}(x) \to \frac{1}{\sqrt{2\pi}}\int_{-\infty}^{x} e^{-\frac{x^2}{2}} dx$$



APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4



Some Limit Theorems for Random Functions. I SOV/52-4-2-5/13

for $t-s \to \infty$, here uniformly for the whole family.
In §2 the authors give conditions that spectral measures $\phi(\Delta)$ of stationary processes, $\Delta = (\lambda, \mu)$, for $\mu - \lambda \to 0$ are locally normal. 5 theorems, 2 lemmas, and 4 examples are given.
One of the authors' theorems was proved independently by I.A. Ibragimov. The authors mention A.N.Kolmogorov, and M.S.Pinsker. There are 20 references, 12 of which are Soviet, 1 Polish, 3 American, 1 Dutch, and 3 English.

SUBMITTED: July 15, 1958

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

16(1) SOV/52-4-3-3/10

AUTHOR: Rozanov, Yu.A.

TITLE: Spectral Analysis of Abstract Functions

PERIODICAL: Teoriya veroyatnostey i yeye primeneniye, 1959, Vol 4, Nr 3, pp 291-310 (USSR)

ABSTRACT: Let $x(t)$ be a function of the real variable $t$, $-\infty < t < +\infty$, with values in a Hilbert space H. For stationary functions $x(t)$

(1.0) $$(x_{t+\tau}, x_t) = B(\tau)$$

does not depend on $t$ and $x(t)$ admits the representation

(2.0) $$x(t) = \int_{-\infty}^{\infty} e^{i\lambda t} \phi(d\lambda),$$

where $\phi$ satisfies certain conditions.
The present paper is devoted to the generalization of the spectral theory developed for stationary functions. The generalization is carried out for two classes of functions: 1) for functions which admit the representation (2.0), where $\phi$ has not to satisfy the above mentioned conditions, and 2) for functions for which for all $\tau$ there exists the limit value

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

Spectral Analysis of Abstract Functions SOV/52-4-3-3/10

$$(4.0) \qquad \lim_{T\to\infty} \frac{1}{T}\int_0^T (x_{t+\tau}, x_t)\,dt = B(\tau).$$

§ 1. Abstract measures and integration; § 2. Harmonizable abstract functions; § 3. Spectrum of an abstract function. Most of the results are also valid if H is an arbitrary Banach space. 5 theorems and numerous examples are given. There are 13 references, 3 of which are Soviet, 1 French, 3 English, 1 Finnish, and 5 American.

SUBMITTED: March 5, 1959

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4



05801
SOV/52-4-4-12/13

16(1),16(2)

AUTHOR: Rozanov, Yu. A.

TITLE: On Extrapolation of Random Distributions

PERIODICAL: Teoriya veroyatnostey i yeye primeneniya, 1959, Vol 4, Nr. 4, pp 465-471 (USSR)

ABSTRACT: Let $\varphi(t)$ be an arbitrary function of the class D of the infinitely often differentiable functions which vanish identically outside of an interval. A random distribution is a random linear functional $\xi(\varphi)$ for which $m(\varphi) = M\xi(\varphi)$ and $B(\varphi_1,\varphi_2)=M\xi(\varphi_1)\overline{\xi(\varphi_2)}$ satisfy the condition

(1) $m(\tau\varphi) = m(\varphi)$, $B(\tau\varphi_1,\tau\varphi_2) = B(\varphi_1,\varphi_2)$ ,

where $\tau\varphi(t)$ denotes the displaced function $\varphi(t+\tau)$. Let $\xi(\varphi)$ be continuous. Let $H_s^-$ be the linear closure of the $h = \xi(\varphi)$ in the sense of the distance $\|h_1-h_2\| = (M|h_1-h_2|^2)^{1/2}$, where $\varphi(t) = 0$ for $t \geqslant s$. Let H be the linear closure of the $\xi(\varphi)$, $\varphi \in D$. The random distribution $\xi(\varphi)$ is called singular if $H = \bigcap_s H_s^-$ and it is called regular if $\bigcap_s H_s^- = 0$.

Theorem 1: Necessary and sufficient for the singularity of $\xi(\varphi)$ is

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

16(1),16(2) SOV/20-125-2-9/64

AUTHOR: Rozanov, Yu.A.

TITLE: Linear Extrapolation of Multi-Dimensional Stationary Processes of Rank 1 With Discrete Time (Lineynaya ekstrapolyatsiya mnogomernykh statsionarnykh protsessov ranga 1 s diskretnym vremenem)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 2, pp 277-280 (USSR)

ABSTRACT: The investigation joins the author's paper [Ref 3] and generalizes to the multi-dimensional case the considerations of linear extrapolations of stationary processes with a discrete time carried out by A.N.Kolmogorov [Ref 1]. Theorem 1: The stationary process $x(t) = \{x_1(t), \ldots, x_n(t)\}$ of rank 1 either is singular or regular (compare [Ref 1,3]). Theorem 2 contains necessary and sufficient conditions for the regularity of a stationary process with $x_k(t) \neq 0$ for all $k=1,\ldots,n$. Theorem 3 contains data on the coefficients $a_{km}$ in the representation $x_k(t) = \sum_{m=0}^{\infty} a_{km} u(t-m)$, where $u(t)$ is a certain

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4



Linear Extrapolation of Multi-Dimensional Stationary Processes of Rank 1 With Discrete Time

SOV/20-125-2-9/64

stationary process with not correlated values. Theorem 4 gives an integral representation of u(t) which is contained implicitly already in [Ref 3]. There are 5 references, 4 of which are Soviet, and 1 American.

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

PRESENTED: January 7, 1959, by A.N.Kolmogorov, Academician

SUBMITTED: January 7, 1959



APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

Effect of the frequency of supply voltage on the performance of the magnetosynchrostransmission of the M-48 anemorhumbometer. Trudy NIIGMP no.9:60-63 '60. (MIRA 14:7)
(Anemometer)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

Transistor d.c.-voltage converter. Trudy NIIMP no.9:102-106 '60. (MIRA 14:7)

(Electric current converters)
(Transistors)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

87984

S/052/60/005/002/001/003
C111/C222

16.6100

AUTHORS: Kolmogorov, A.N., and Rozanov, Yu.A.

TITLE: On a Strong Mixing Condition for Stationary Random Gaussian Processes

PERIODICAL: Teoriya veroyatnostey i yeye primeneniye, 1960, Vol.5, No.2, pp.222-227

TEXT: Two $\sigma$-algebras of events $\mathfrak{M}'$ and $\mathfrak{M}''$ are independent if for arbitrary $A' \in \mathfrak{M}'$, $A'' \in \mathfrak{M}''$ it holds: $P(A', A'') = P(A')P(A'')$. As a measure of dependence of two $\sigma$-algebras M. Rosenblatt (Ref.1) proposed

$$\alpha(\mathfrak{M}', \mathfrak{M}'') = \sup_{A' \in \mathfrak{M}', A'' \in \mathfrak{M}''} |P(A' \cap A'') - P(A')P(A'')|.$$

For the stationary random process $\xi(t)$, $\alpha(\mathfrak{M}^t_{\infty}, \mathfrak{M}^{\infty}_{t+\tau})$, (where $\mathfrak{M}^t_s$ denotes the $\sigma$-algebras generated by $\xi(u)$, $s \leq u \leq t$) depends only on $\tau$ and is denoted with $\alpha(\tau)$. If $\alpha(\tau) \to 0$ for $\tau \to \infty$ then $\xi(t)$ has the property of a strong mixing. For arbitrary systems $\{\xi\} = \mathfrak{A}'$ and $\{\eta\} = \mathfrak{A}''$ with finite second moments the author introduces the magnitude

Card 1/5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

87984

S/052/60/005/002/001/003
C111/C222

On a Strong Mixing Condition for Stationary Random Gaussian Processes

$$\rho(\mathfrak{A}', \mathfrak{A}'') = \sup_{\xi,\eta} \frac{|M(\xi - M\xi)(\eta - M\eta)|}{[M(\xi - M\xi)^2 M(\eta - M\eta)^2]^{1/2}} .$$

If $\mathfrak{A}'$ and $\mathfrak{A}''$ are the sets of all magnitudes with finite second moments being measurable with respect to $\mathfrak{M}'$ and $\mathfrak{M}''$ then, according to the definition (Ref.2)

$$\rho(\mathfrak{M}', \mathfrak{M}'') = \rho(\mathfrak{A}', \mathfrak{A}'')$$

is the maximal correlation coefficient between $\mathfrak{M}'$ and $\mathfrak{M}''$.

It always holds

(1) $$\alpha(\mathfrak{M}', \mathfrak{M}'') \leq \rho(\mathfrak{M}', \mathfrak{M}'').$$

Let $\{\xi\}$ and $\{\eta\}$ be two sets of random magnitudes having Gaussian distributions (for arbitrary finite $\xi_1, \ldots, \xi_m$ and $\eta_1, \ldots, \eta_n$). Let $\mathfrak{M}_\xi$ and $\mathfrak{M}_\eta$ be $\sigma$-algebras generated by the events $(\xi \in \Gamma')$ and $(\eta \in \Gamma'')$, where $\Gamma'$ and $\Gamma''$ are arbitrary Borel sets on the straight line. Let $H_\xi$, $H_\eta$ be closed linear closures (in the quadratic mean) of the sets $\{\xi\}$ and $\{\eta\}$.

Theorem 1:

(2) $$\rho(\mathfrak{M}_\xi, \mathfrak{M}_\eta) = \rho(H_\xi, H_\eta).$$

Card 2/5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

87984
S/052/60/005/002/001/003
C111/C222

On a Strong Mixing Condition for Stationary Random Gaussian Processes

Theorem 2: The maximal correlation coefficient satisfies

(3) $\alpha(\mathfrak{M}_\xi, \mathfrak{M}_\eta) \leq \rho(\mathfrak{M}_\xi, \mathfrak{M}_\eta) \leq 2\pi\alpha(\mathfrak{M}_\xi, \mathfrak{M}_\eta)$.

From the theorems 1 and 2 there follows that a Gaussian stationary process $\xi(t)$ has the property of strong mixing then and only then if for the maximal correlation coefficient it holds $\rho(\mathfrak{M}^{+}_{-\infty}, \mathfrak{M}^{\infty}_{t+\tau})$ for $\tau \to \infty$.

Let $\xi(t)$ be a stationary process in the weak sense and

$$\rho(\tau) = \rho(H^{t}_{-\infty}, H^{\infty}_{t+\tau}).$$

Let the spectral function $F(\lambda)$ be absolutely continuous; let $f(\lambda)$ be the spectral density.

Theorem 3: In the case of an integral time it holds

(4) $$\rho(\tau) = \inf_{\varphi} \text{ vrai } \sup_{\lambda} \left[ \left| f(\lambda) - e^{i\lambda\tau} \varphi(e^{-i\lambda}) \right| \frac{1}{f(\lambda)} \right],$$

where $\inf_{\varphi}$ is taken over all $\varphi(z)$ being analytically continuable into

Card 3/5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4



On a Strong Mixing Condition for Stationary Random Gaussian Processes

the interior of the interior of the unit circle. In the case of a continuous time it holds

(4') $$\varrho(\tau) = \inf_{\varphi} \text{ vrai } \sup_{\lambda} \left[ \left| f(\lambda) - e^{i\lambda\tau} \varphi(\lambda) \right| \frac{1}{f(\lambda)} \right],$$

where $\inf_{\varphi}$ is taken over all functions $\varphi(z)$ being analytically continuable into the lower halfplane.

Theorem 4: If there exists a $\varphi_0(z)$ being analytic in the interior of the unit circle (for a discrete time) or in the lower halfplane (for a continuous time) and having the boundary value $\varphi_\xi(e^{-i\lambda})$ and $\varphi_\xi(\lambda)$ respectively, and having the property that $f/\varphi_0$ is uniformly continuous in $\lambda$ and $|f/\varphi_0| \geq \varepsilon > 0$ holds for almost all $\lambda$ then for $\tau \to \infty$ it holds

(7) $$\varrho(\tau) \to 0.$$

Card 4/5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

87984

S/052/60/005/002/001/003
C111/C222

On a Strong Mixing Condition for Stationary Random Gaussian Processes

If there exists an analytic function $\varphi_0(z)$ so that $|f/\varphi_0| \geq \varepsilon > 0$ and the derivative $(f/\varphi_0)^{(k)}$ is uniformly bounded then

$$\rho(\tau) \leq c\tau^{-k}.$$

The authors mention O.V.Sarmanov. They thank Yu.V.Prokhorov for remarks. There are 9 references: 7 Soviet and 2 American.

SUBMITTED: November 18, 1959

Card 5/5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

87985

S/052/60/005/002/002/003
C111/C222

16.6100

AUTHOR: Rozanov, Yu.A.

TITLE: A Central Limit Theorem for Additive Random Functions

PERIODICAL: Teoriya veroyatnostey i yeye primeneniye, 1960, Vol.5, No.2, pp. 243-246

TEXT: Given a space $\Omega$ with the probability measure $P(d\omega)$, and a family of $\sigma$-algebras of $\mathfrak{M}_s^t$-measurable sets; $\mathfrak{M}_{s'}^{t'} \subseteq \mathfrak{M}_s^t$ for $s \leq s' \leq t' \leq t$. Let the family satisfy the condition of the strong mixing: for $\tau \to \infty$ let

(1) $$\alpha(\tau) = \sup_t \sup_{A,B} |P(AB - P(A)P(B)| \to 0,$$

where sup is taken over all $A \in \mathfrak{M}_{-\infty}^t$ and $B \in \mathfrak{M}_{t+\tau}^{\infty}$. Let $H(\Delta)$ be a family of functions on $\Omega$, where for almost all $\omega$ it holds

(2) $$H(\Delta) = H(\Delta_1) + H(\Delta_2)$$

if $\Delta = \Delta_1 + \Delta_2$, where $\Delta = [s,t)$. Let $H[s,t)$ be measurable with respect to $\mathfrak{M}_s^t$;

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

87985

S/052/60/005/002/002/003
C111/C222

A Central Limit Theorem for Additive Random Functions

The author considers

(3) $$\eta(\Delta) = \frac{1}{\sigma(\Delta)}\left[H(\Delta)-m(\Delta)\right],$$

where $m(\Delta) = \mathbb{M}H(\Delta)$, $\sigma^2(\Delta) = \mathbb{D}H(\Delta)$. Let

(4) $$0 \leq \lim_{|\Delta|\to\infty} (\sigma^2(\Delta)/|\Delta|) \leq \overline{\lim_{|\Delta|\to\infty}} (\sigma^2(\Delta)/|\Delta|) < \infty$$

if $|\Delta| = t-s \to \infty$.

Theorem: Let

(5) $$\alpha(\tau) = O[\tau^{-1-\varepsilon}]$$

for a certain $\varepsilon > 0$. If there exists a $t_0 > 0$ so that for all $\Delta_0 = [t_0, t+t_0)$ it holds

(6) $$\mathbb{M}|H(\Delta_0)-m(\Delta_0)|^{2+\delta} \leq M_0 < \infty,$$

Card 2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

87985

S/052/60/005/002/002/003
C111/C222

A Central Limit Theorem for Additive Random Functions

where $\delta > 2/\varepsilon$ then it holds

(7) $$\mathbb{P}\{\eta(\Delta) < x\} \to \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{x} e^{-u2/2} du$$

for $|\Delta| \to \infty$.

There are 3 references: 2 Soviet and 1 American.

SUBMITTED: November 18, 1959

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

86017

16.6100 16.1500

3/052/60/005/004/001/007
C 111/ C 333

AUTHOR: Rozanov, Yu. A.

TITLE: Spectral Properties of Multivariate Stationary Processes and Boundary Properties of Analytic Matrices 16

PERIODICAL: Teoriya veroyatnostey i yeye primeneniye, 1960, Vol. 5, No. 4, pp. 399-414

TEXT: The spectral theory of multivariate stationary processes in closely connected with the boundary properties of analytic matrices. The author gives a survey on the results on this domain. He brings 10 theorems which are partially known. Let

$$x(t) = \begin{pmatrix} x_1(t) \\ \vdots \\ x_n(t) \end{pmatrix},$$

where $x_k(t)$ are functions of a Hilbert space H, be a stationary process. The correlation matrix $B(\tau) = \left\{B_{kl}(\tau)\right\}_{k,l = \overline{1,n}}$, $B_{kl}(\tau) = (x_k(t), x_l(t-\tau))$, where t attains integer values, does not depend on t and admits the representation

Card 1/8

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

86017

S/042/60/005/004/001/007
C 111/ C 333

Spectral Properties of Multivariate Stationary Processes and Boundary Properties of Analytic Matrices

(1) $$B(\tau) = \int_{-\pi}^{\pi} e^{i\lambda t} dF(\lambda)$$

where $F(\lambda)$ is a monotone, bounded matrix function, the spectral function of $x(t)$. Let $F(\lambda)$ be absolutely continuous. Let $H_x^-(\tau)$ be the linear closure of the $x_k(t)$, $t \leqq \tau$, $k = \overline{1,n}$. $x(t)$ is called regular, if $\bigcap_{\tau} H_x^-(\tau) = 0$. A matrix function $f(\lambda)$ is called factorizable, if there is an analytic matrix $A(z)$ in the unit circle, the boundary value of which is

$$a(\lambda) = \lim_{\rho \uparrow 1} A(\rho e^{-i\lambda})$$

and for which it is

(2) $$a(\lambda) a^*(\lambda) = 2\pi f(\lambda),$$

where $a^*$ is conjugate to $a$.

Theorem 1: A stationary process $x(t)$ is regular, if and only if its spectral function $F(\lambda)$ is absolutely continuous and the spectral

Card 2/8

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

26017
S/052/60/005/004/001/007
C 111/ C 333

Spectral Properties of Multivariate Stationary Processes and Boundary Properties of Analytic Matrices

density $f(\lambda) = F'(\lambda)$ is factorizable.

A function $\Gamma(z)$ analytic in the unit circle is said to belong to the class $H_\delta$, if

$$\lim_{\varrho \uparrow 1} \int_{-\pi}^{\pi} |\Gamma(\varrho e^{-i\lambda})|^\delta \, d\lambda = H_\delta(\Gamma) < \infty .$$

Furthermore, $\Gamma(z)$ is said to belong to $N_\delta$, if $\Gamma(z) = \frac{\Gamma_1(z)}{\Gamma_2(z)}$ and $\Gamma_1(z), \Gamma_2(z) \in H_\delta$.

Theorem 2: A positive-definite integrable matrix function $f(\lambda)$ is factorizable, if and only if 1.) the rank of $f(\lambda)$ is equal to a certain m for almost all $\lambda$ ; 2.) there exists a main minor $M(\lambda) = \det \{ f_{i_p i_q}(\lambda) \}_{p,q = \overline{1,m}}$ of order m for which $\int_{-\pi}^{\pi} \log M(\lambda) \, d\lambda > -\infty$ ; 3.) the functions $\gamma_{i_p j}(\lambda) = M_{i_p j}(\lambda)/M(\lambda)$ (where $M_{i_p j}(\lambda)$ arises from $M(\lambda)$ by replacing the

Card 3/8

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

66017
S/052/60/005/004/001/007
C 111/ C 333

Spectral Properties of Multivariate Stationary Processes and Boundary Properties of Analytic Matrices

$i_p$-th line by the j-th, $p = \overline{1,m}$, $j \neq i_p$) are boundary values of $\Gamma^p_{i_p j}(z) \in H_\delta$, $\delta > 0$.

Theorem 3: Let $x(t)$ be an n-dimensional stationary regular process with rank m and spectral density $f(\lambda)$. To every analytic matrix $A(z) = \{A_{kj}(z)\}$ $k = \overline{1,n}$; $j = \overline{1,m}$, $A(z) = \sum_{\tau=0}^{\infty} a(z)\, z^{\tau}$, the boundary value

$$a(\lambda) = \lim_{\rho \uparrow 1} A(\rho e^{-i\lambda})$$

of which satisfies the condition (2), there corresponds an m-dimensional stationary process $u(t)$ with orthogonal normed values, so that

$$x(t) = \sum_{\tau=0}^{\infty} a(\tau)\, u(t-\tau) \tag{3}$$

where: if

Card 4/8

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

86017
S/052/60/005/004/001/007
C 111/ C 333

Spectral Properties of Multivariate Stationary Processes and Boundary Properties of Analytic Matrices

$$\phi(d\lambda) = \begin{pmatrix} \phi_1(d\lambda) \\ \vdots \\ \phi_n(d\lambda) \end{pmatrix}$$

is the spectral family of $x(t)$: $x(t) = \int_{-\pi}^{\pi} e^{i\lambda t}\, \phi(d\lambda)$, then it is

(4) $u(t) = \int_{-\pi}^{\pi} e^{i\lambda t}\, \varphi(\lambda)\, \phi(d\lambda)$, where $\varphi(\lambda) =$

$= \{\varphi_{jk}(\lambda)\}$ $j = \overline{1,m}$; $k = \overline{1,n}$

is to be determined from

(5) $\varphi(\lambda)\, f(\lambda) = \frac{1}{2\pi} a^*(\lambda)$, $\varphi(\lambda)\, f(\lambda)\, \varphi^*(\lambda) = \frac{1}{2\pi} I$.

$u(t)$ in (3) is called fundamental, if it is

(10) $H_u^-(\tau) = H_u^-(\tau)$ for all $\tau$.

Card 5/8

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

86017
S/052/60/005/004/001/007
C 111/ C 333

Spectral Properties of Multivariate Stationary Processes and Boundary Properties of Analytic Matrices

Theorem 4: A process $u(t)$ corresponding to the analytic matrix $A(z)$ is fundamental, if and only if $A(z)$ is maximum, i. e. if it is

(11) $A(z)\,A^*(z) - B(z)\,B^*(z) \geqq 0$ for all $z$, $|z| < 1$

for every analytic matrix $B(z)$, the boundary value $b(\lambda)$ of which satisfies the same condition (2) as the boundary value $a(\lambda)$ of $A(z)$. All maximum matrices are uniquely determined up to unitary matrices T as constant factors.

Theorem 5: Let $A(z) = \left\{A_{kj}(z)\right\}_{k=\overline{1,n};\ j=\overline{1,m}}$ be a maximum matrix which satisfies (4). An arbitrary analytic matrix $B(z) = \left\{B_{kj}(z)\right\}_{k=\overline{1,n};\ j=\overline{1,m}}$ satisfying the same condition (4) has the form

(12) $B(z) = A(z)\,C(z)$

where $C(z) = \left\{C_{ij}(z)\right\}_{i,j=\overline{1,m}}$ is a unitary matrix on the

Card 6/8

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

50017
S/052/60/005/004/001/007
C 111/ C 333

Spectral Properties of Multivariate Stationary Processes and Boundary Properties of Analytic Matrices

boundary $z = e^{i\lambda}$, where it is $I - C(z)\, C^{*}(z) \geqq 0$ for all $z$, $|z| < 1$.

Theorem 6: Corollary to theorem 5.

Theorem 7: Let $f(\lambda) = \{ f_{kl}(\lambda) \}_{k,l = \overline{1,n}}$ be a positive-definite matrix function of rank $m$, the elelemts $f_{kl}(\lambda)$ are assumed to be rational relative to $e^{i\lambda}$. The analytic matrix $A(z) = \{ A_{kj}(z) \}_{k = \overline{1,n};\ j = \overline{1,m}}$ which satisfies (2) is maximum, if and only if its rank is equal to $m$ for all $z$, $|z| < 1$, and all $A_{kj}(z)$ are rational in $z$.

Theorem 8 is a conjecture which is proved under additional assumptions (see (Ref.9)).

Theorem 9 does not appear in the text.

Theorem 10 brings a formula for the minimum error for extrapolation of the process $x(t)$ under a single step (see (Ref.10)).

Card 7/8

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

86917

S/052/60/005/004/001/007
C 111/ C 333

Spectral Properties of Multivariate Stationary Processes and Boundary Properties of Analytic Matrices

The author mentions J. J. Privalov, M. G. Kreyn and D. G. Polyak. There are 14 references: 10 Soviet, 2 Swedish, 1 American and 1 Swiss.

[Abstracter's note: (Ref. 9) is a paper of N. Wiener and P. Masani in Acta Math. Vols. 98 and 99; (Ref. 10) is a paper of H. Helson and D. Lowdenslager in Acta Math. Vol. 99 ]

SUBMITTED: November 18, 1959

Card 8/8

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

67877

S/020/60/130/06/006/059

~~16(1)~~ 16.6100

AUTHOR: Rozanov, Yu. A.

TITLE: Stationary Sequences Forming the Basis

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 6, pp 1199-1202 (USSR)

ABSTRACT: Let $x(t) = \{x_1(t), \ldots, x_n(t)\}$ be a multidimensional stationary random process (t assumes only integral values). Let H be the linear closure (in the quadratic mean) of the values $x_k(t)$, $k=1,\ldots,n$, $-\infty < t < \infty$ observed at the times $t \in T$. The author investigates the representability of the random terms $h \in H$ in the form of a series

$$(1) \qquad h = \sum_{k=1}^{n} \sum_{t \in T} c_k(t) x_k(t) .$$

Let $f(\lambda) = \{f_{kj}(\lambda)\}_{k,j=1,\ldots,n}$ be the spectral density of $x(t)$. Theorem 1: In order that the system $\{x_k(t)\}$ is minimal it is necessary and sufficient that

$$(2) \qquad \int_{-\pi}^{\pi} \frac{1}{\mathrm{Sp}\, f(\lambda)} \, d\lambda < \infty .$$

Card 1/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4



67877

Stationary Sequences Forming the Basis S/020/60/130/06/006/059

A minimal system (compare [Ref 3]) is called a Bessel system if for every $h \in H$ it holds $\sum_k \sum_t |c_k(t)|^2 < \infty$.

Theorem 2: In order that the system $\{x_k(t)\}$ is a Bessel system it is necessary and sufficient that for $m > 0$ and almost all $\lambda$ it holds

(10) $f(\lambda) \geqslant m\, I$.

Let $(h_1, h_2) = M\, h_1 \bar{h}_2$ be the scalar product in H and let $\{y_k(t)\}$ be the system conjugated to $\{x_k(t)\}$. The minimal system $\{x_k(t)\}$ is called a Hilbert system if for all $c_k(t)$, $\sum_k \sum_t |c_k(t)|^2 < \infty$ there exists an $h \in H$ with coefficients of its development so that $c_k(t) = (h, y_k(t))$.

Theorem 3: In order that $\{x_k(t)\}$ is a Hilbert system it is necessary and sufficient that for an $M < \infty$ and almost all $\lambda$ it holds

(13) $f(\lambda) \leqslant M\, I$.

Card 2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

67877

Stationary Sequences Forming the Basis S/020/60/130/06/006/059

Theorem 5: On order that the system $\{x_k(t)\}$ is an unconditional basis it is necessary and sufficient that for certain $m > 0, M < \infty$ and almost all $\lambda$ it holds

(18) $$m\, I \leqslant f(\lambda) \leqslant M\, I.$$

The author mentions I.M.Gel'fand.
There are 8 references, 4 of which are Soviet, 2 French, and 2 Swedish.

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

PRESENTED: October 27, 1959, by A.N.Kolmogorov, Academician

SUBMITTED: October 19, 1959

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

VOLKONSKIY, V.A.; ROZANOV, Yu. A. (Moscow)

Some limit theorems for random functions. Part 2. Teor.veroiat.i ee prim. 6 no.2:202-215 '61. (MIRA 14:6)
(Limit theorems (Probabilities theory))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

"Fundamentals of the theory of Markov processes" by E. B. Dynkin. Reviewed by IU. A.Rozanov. Teor. veroiat. i ee prim. 6no.2:253-255 '61. (MIRA 14:6)

(Markov processes)
(Dynkin, E. B. )

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu. A.

"Time series analysis" by E. J. Hannan. Reviewed by IU. A. Rozanov. Teor. veroiat. i ee prim. 6 no.2:255-256 '61. (MIRA 14:6)
(Time—Series analysis)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

KLEMIN-SHARONOV, V.A., kand.tekhn.nauk; ROZANOV, Yu.A., inzh.

Mechanical characteristics of d.c. motors in networks with semiconductor rectifiers. Vest. elektroprom. 32 no.7:37-39 Jl '61. (MIRA 14:10)

(Cranes, derrics, etc.--Electric driving)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu. A.

"On the question of equivalence of probabilistic measures corresponding to Gaussian stationary processes"

report submitted at the Intl Conf of Mathematics, Stockholm, Sweden, 15-22 Aug 62

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV YU. A.

Transactions of the Sixth Conference (Cont.) SOV/6371

13. Postnikova, L. P. On the Concept of Mises' Collective 75

14. Prokhorov, Yu. V. Extremal Problems in Limit Theorems 77

15. Rozanov, Yu. A. On the Central Limit Theorem for Weakly Dependent (Random) Variables 85

16. Ryauba, B. A. On the Applicability of the Central Limit Theorem to Sums of Series of Weakly Dependent Random Variables 97

17. Skorokhod, A. V. Refinement of Certain Limit Theorems for Sums of Independent Random Variables 111

18. Statulyavichyus, V. A. On Refined Limit Theorems for Weakly Dependent Random Variables 113

19. Statulyavichyus, V. A. On Limit Theorems for Non-homogeneous Markov Chains With Attention to Large Deviations 121

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

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A. (Moscow)

Density of one Gaussian distribution with respect to another. (MIRA 15:3)
Teor.veroiat.i ee prim. 7 no.1:84-89 '62.
(Distribution(Probability theory)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

"Probability theory" by M. Loève. Reviewed by Yu.A. Rozanov. Teor. veroiat. i ee prim. 7 no.2:239-240 '62. (MIRA 15:5)
(Probabilities)
(Loève, M.)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

KOZANOV, Yuriy Anatol'yevich; SMOLYANSKIY, M.L., red.; LIKHACHEVA, L.V., tekhn. red.

[Stationary random processes] Statsionarnye sluchainye protsessy. Moskva, Fizmatgiz, 1963. 284 p. (MIRA 16:11)

(Random processes)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

PISARENKO, V.F.; ROZANOV, Yu.A.

Some problems for steady-state processes leading to integral equations related to Wiener-Hopf equations. Probl. pered. inform. no.14:113-135 '63. (MIRA 16:12)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 17236-63 BDS/EWT(d)/FCC(w)--AFFTC/IJP(c)

ACCESSION NR: AP3005657 S/0052/63/008/003/0241/0250

52

AUTHOR: Rozanov, Yu. A. (Moscow)

TITLE: The problem of equivalence of probability measures corresponding to Gaussian stationary processes

16

SOURCE: Teoriya veroyatnostey i yeye primeneniya, v. 8, no. 3, 1963, 241-250

TOPIC TAGS: equivalence of Gaussian process, equivalent probability measure, stationary Gaussian process

ABSTRACT: Let P and $P_0$ be two Gaussian stationary measures with correlation functions B and $B_0$ respectively and let $P_0$ have spectral density $f_0$ satisfying

$$0 < \varliminf_{\lambda\to\infty} \frac{f_0(\lambda)}{\lambda^{2n}} \leqslant \varlimsup_{\lambda\to\infty} \frac{f_0(\lambda)}{\lambda^{2n}} < \infty \qquad (1)$$

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 17236-63

ACCESSION NR: AP3005657

Theorem. The probability measure $P(d\omega)$ is equivalent to $P_0(d\omega)$ if and only if the difference $\Delta(t) = B(t) - B_0(t)$ has, on the interval $(-T,T)$, absolutely continuous $(2n-1)$-st derivative, and

$$\int_0^T\int_0^T |\Delta^{(2n)}(s-t)|^2\, ds\, dt < \infty. \qquad (2)$$

Orig. art. has: 32 formulas.

ASSOCIATION: none

SUBMITTED: 17Apr62

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: MM

NO REF SOV: 004

OTHER: 002

2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

AYVAZYAN, S.A.; ROZANOV, Yu.A.

Remarks on asymptotically effective linear estimates of regression coefficients. Trudy Mat. inst. 71:3-16 '64. (MIRA 18:2)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A. (Moscow)

Probability measures in functional spaces corresponding to Gaussian stationary processes. Teor. veroiat. i ee prim. 9 no.3:448-465 '64.

Stability of solutions to linear problems for stationary processes. Ibid.:528-530 (MIRA 17:10)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

Review of E.B. Dynkin's book "Markov processes". Teor. veroyat. i ee prim. 9 no.3:569-574 '64. (MIRA 17:10)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 39921-65 EPF(n)-2/EWT(d)/EWP(1) Pg-4/Pk-4/Pl-4/Po-4/Pq-4/Pu-4 IJP(c) WW/BC

ACCESSION NR: AT5004335 S/2517/64/071/000/0088/0101

AUTHOR: Rozanov, Yu. A.

TITLE: Optimal control problem for a complex of devices

SOURCE: AN SSSR. Matematicheskiy institut. Trudy, v. 71, 1964. Sbornik rabot po teorii veroyatnostey (Collection of papers on the theory of probability), 88-101

TOPIC TAGS: measuring error, statistical analysis

ABSTRACT: The author treats the problem of obtaining a minimum variance unbiased estimate, given n unbiased observations on a quantity whose value does not influence the distribution of error. Assertion 1: Every unbiased variable X(T) can be represented in the form

$$X(T) = X_{k*}(T) - \hat{x}_{k*}(T), \qquad (1)$$

where $\hat{x}_{k*}(T)$ is a function only of $Y(t)$, $T_0 \leq t \leq T$, and $Y = (Y_1, \ldots, Y_{n-1}) = (X_1 - X_n, \ldots, X_{n-1} - X_n)$ are differences of the observations. Assertion 2: The quantity X(T), represented in the form (1), is minimum variance unbiased iff

$$\hat{x}_{k*}(T) = M[x_{k*}(T) \mid Y(t),\ T_0 \leqslant t \leqslant T]. \qquad (2)$$

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

L 39921-65

ACCESSION NR: AT5004335

Orig. art. has: 62 formulas.

ASSOCIATION: Matematicheskiy institut, AN SSSR (Mathematics Institute, AN SSSR)

SUB CODE: MA

SUBMITTED: 00 ENCL: 00

NO REF SOV: 003 OTHER: 000

Card 2/2 mB

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.A.

Density of Gaussian distributions and Wiener - Hopf integral equations. Dokl. AN SSSR 165 no.5:1000-1002 D '65. (MIRA 19:1)

1. Matematicheskiy institut im. V.A.Steklova AN SSSR. Submitted September 11, 1965.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ACC NR: AT7011645 SOURCE CODE: UR/0000/66/000/000/0001/0007

AUTHOR: Rozanov, Yu. A.; Sil'vestrov, M. M.; Popov, V. A.

ORG: none

TITLE: Informational model of motion dynamics and space extravehicular orientation of astronauts

SOURCE: International Astronautical Congress. 17th, Madrid, 1966. Doklady. no. 7. 1966. Informatsionnaya model' dinamiki dvizheniya i prostranstvennaya oriyentirovka kosmonavta vne korablya, 1-7

TOPIC TAGS: individual maneuver, EVA, information model, astronaut orientation, spatial orientation, visual feedback, extravehicular movement, weightlessness

ABSTRACT:
Systems for individual maneuvering during extravehicular activity must include power units to provide angular and linear movement, angular velocity stabilization devices for stopping angular rotation, and information feedback to guide the astronaut in controlling his movements. Types of feedback information which are essential include: 1) information on the angular position of the body, relative to the "line-of-sight"

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ACC NR: AT7011645

(astronaut-to-spacecraft) in yaw and pitch and relative to the spacecraft in roll; 2) angular velocity of the "line-of-sight", i.e., the lateral component of relative velocity; 3) speed of approach (or departure); and 4) relative distance. Ordinarily, under terrestrial conditions, much such feedback information comes from the statokinetic analyzers and from visual observation of surrounding objects; both these information sources are severely limited in space by the absence of gravity and of nearby visual reference points. Experimental studies were undertaken to discover which of these kinds of information should be emphasized in an informational model of spatial motion, and what sort of display should be utilized in such a system. It was found that relative distance and approach and departure speed were the most difficult control parameters to estimate visually (using changes in the apparent size of the object approached). Various methods of feedback (verbal cues from the spacecraft pilot, auditory signals, and visual information displays) were used to supplement visual estimation. Luminous lines painted on the spacecraft hull aid in perceiving its position and orientation when it is in shadow. Orig. art. has: 1 figure. /ATD PRESS: 5098-F/

Card 2/2 SUB CODE: 06,22 / SUBM DATE: none

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOV, Yu.L.; BOYADZHYAN, V.A.

Diagnosis of primary cancer of the liver. Vop. onk. 11 no.4:7-13 '65. (MIRA 18:8)

1. Iz 2-go khirurgicheskogo otdeleniya (zav. - kand.med.nauk N.P. Maslov) Gosudarstvennogo onkologicheskogo instituta imeni P.A. Gertsena (direktor - prof. A.N.Novikov).

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

SHUDEL', M.S.; CHERNOGRAYDSKAYA, N.A.; BRUMBERG, V.A.; ROZANOV, Yu.M.; BRUMBERG, Ye.M.

Effect of some metabolic poisons of the respiratory chain on the ultraviolet fluorescence of cells. Dokl. AN SSSR 157 no. 2:447-450 Jl '64. (MIRA 17:7)

1. Institut tsitologii AN SSSR. Predstavleno akademikom A.I. Oparinym.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ACC NR: AP6033663 SOURCE CODE: UR/0119/66/000/010/0011/0013

AUTHOR: Verbitskiy, I. P. (Engineer); Mel'nikov, V. I. (Engineer); Rozen, Yu. V. (Engineer); Trotsko, G. G. (Engineer)

ORG: none

TITLE: Frequency adders 16

SOURCE: Priborostroyeniye, no. 10, 1966, 11-13

TOPIC TAGS: frequency analyzer, transistorized circuit, frequency meter, FREQUENCY CONVERTER

ABSTRACT: A device that converts frequencies in the 4—8 kc range into pulses and counts these pulses is described. The input signal frequency is divided 80 times. The resultant frequency, 50—100 kc, is then applied to a circuit that substracts 50 cycles. The 0—50 cps, output frequency is subsequently divided 180 times, applied to a monostable multivibrator, and counted either with a fast acting counter or an automatic recorder. The operating temperature range of the device is 5—50 C; supply voltage tolerances are +10—-15%. The circuitry of the device is transistorized and packaged in modular form. Orig. art. has: 5 figures.

SUB CODE: 09,14/ SUBM DATE: none/ ORIG REF: 004

UDC: 681.142.642.2

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ZHUKOVSKIY, S.G.; YEFIMOVA, L.F.; ROZANOVA, A.A., agronom; LOSEVA, V.G., agronom; RUDENKO, D.K., kand. sel'skokhoz. nauk; KAPUSTINSKIY, A.F., fitopatolog; MELESHKO, A.I., mladshiy nauchnyy sotrudnik

Brief information. Zashch. rast. ot vred. i bol. 8 no.3:24, 53-54 Mr '63. (MIRA 17:1)

1. Vsesoyuznyy institut zashchity rasteniy (for Zhukovskiy, Yefimova, Rudenko, Meleshko). 2. Biolaboratoriya karantinnoy inspektsii UzSSR (for Rozanova, Loseva).

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOVA, A. I. Cand. Med. Sci.

Dissertation: "Data on Inheritance of the Isoserological Factors of the AVO and M Systems in Connection with Arbitration in Paternity Distutes." Second Moscow State Medical Inst., imeni I. V. Stalin, 16 Jun 47.

SO: Vechernyaya Moskva, Jun, 1947 (Project #17836)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOVA, A.M.

82601
S/056/60/039/01/10/029
B006/B070

24.6810

AUTHORS: Okonov, E. O., Petrov, N. I., Rozanova, A. M., Rusakov, V. A.

TITLE: Four-pronged Decay of the Long-lived $K^0$-Meson 19

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 1 (7), pp. 67-69

TEXT: A cloud chamber was exposed to a neutral particle beam of the proton synchrotron at the OIYaI (Joint Institute of Nuclear Research). Out of 140 $K_2^0$ decays recorded, one four-pronged decay was found (at 8 m distance from the inner target). A photograph of this event is given on an insert between pages 64 and 65. The tracks to be seen on this photograph and denoted by A, B, C, D are discussed in the introduction, and the results obtained from measurements of the tracks are tabulated (momentum, sign of the charge, angles). All possible ways of explaining this event are next considered. The conclusion is that considering all data of measurement as well as the CP-invariance, only the following possibilities remain:

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

OKONOV, E.O.; PETROV, N.I.; ROZANOVA, A.M.; RUSAKOV, V.A.

Four-prong decay of the long-lived K meson. Zhur. eksp. i teor. fiz. 39 no. 1:67-69 Jl '60. (MIRA 13:12)

1. Ob"yedinennyy institut yadernykh issledovanily.
(Mesons--Decay)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

NYAGU, D.V.; OKONOV, E.O.; PETROV, N.I.; ROZANOVA, A.M.; RUSAKOV, V.A.

Hyperon production in lead by $K_2^0$ mesons having a mean energy of ~100 Mev. [with summary in English]. Zhur. eksp. i teor. fiz. 42 no.2:435-438 F '62. (MIRA 15:2)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Hyperons)(Mesons)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ANIKINA, M.Kh.; NYAGU, D.V.; OKONOV, E.O.; PETROV, N.I.; ROZANOVA, A.M.
RUSAKOV, V.A.

Experimental study of some consequences of CP-invariance in the decay of $K_2^0$ mesons. Zhur.eksp.i teor.fiz. 42 no.1:130-134 Ja '62. (MIRA 15:3)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Mesons--Decay)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ANIKINA, M.Kh.; GOGITIDZE, O.N.; ZHURAVLEVA, M.S.; KOZLOV, A.A.; KOTLYAREVSKIY, D.M.; MANDZHAVIDZE, Z.Sh.; MESTVIRISHVILI, A.N.; NYAGU, D.; OKONOV, E.O.; PETROV, N.I.; ROZANOVA, A.M.; RUSAKOV, V.A.; TAKHTAMYSHEV, G.G.; CHKHAIDZE, L.V.; U TSZUN-FAN' [Wu Tsung-fan]; TSERELOV, A.A.

Observation of $K_2^0 \to \pi^+ + \pi^- + \pi^0$ decays. Zhur. eksp. i teor. fiz. 45 no.3:469-473 S '63. (MIRA 16:10)

1. Ob"yedinennyy institut yadernykh issledovaniy i Institut fiziki AN Gruzinskoy SSR.
(Photography, Particle track) (Mesons)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOVA, A.M.

ANIKINA, M. Kh., KOTLYAREVSKIY, D. M., KOSLOV, A. A., MURAVIEVA, M. S., MANIKHAVIDZSE S. M., MESTRVIRISHVILI, A. N. NIAGU, D. V., PETROV, N. I. ROZANOVA, A. M., RUSAKOV, V. A. OKONOV, E. O., TAKHTAMYSHEV, G. G., CHKHEIDSE, L. B.

"Decay Properties of $K^0$-Mesons"

Report presented at the Intl. Conference on High Energy Physics, Geneva, 4-11 July 1962

Joint Inst. for Nuclear Research
Lab. of High Energies, Dubna, 1962

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

NYAGU, D.V.; OKONOV, E.O.; PETROV, N.I.; ROZANOVA, A.M.; RUSAKOV, V.A.

Experimental verification of the $\Delta I = 1/2$ selection rule for lepton decay of K-mesons. Zhur. eksp. i teor. fiz. 40 no.6:1618-1624 Je '61. (MIRA 14:8)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Nuclear spin)
(Mesons—Decay)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4

ROZANOVA, A.M.

2

34004
S/056/62/042/001/021/048
B104/B102

24.6700

AUTHORS: Anikina, M. Kh., Nyagu, D. V., Okonov, E. O., Petrov, N. I., Rozanova, A. M., Rusakov, V. A.

TITLE: Experimental investigation of some consequences of CP invariance in $K_2^0$-meson decays

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 1, 1962, 130-134

TEXT: The application of CP invariance to the decay of neutral K-mesons leads to three conclusions: (1) The decay of a long-lived $K^0$-meson into two pions is forbidden; (2) in three-particle lepton decays, the ratio between the probabilities of emission of negative and positive pions $R = w(K_2^0 \rightarrow \pi^- + e^+(\mu^+) + \nu)/w(K_2^0 \rightarrow \pi^+ + e^-(\mu^-) + \nu) = 1$; (3) only a $K_2^0$-meson can decay into three $\pi^0$-mesons, and the $K_2^0 \rightarrow \pi^+ + \pi^- + \pi^0$ decay is about hundred times more probable than the relevant decay of a short-lived $K^0$-meson. At the proton-synchrotron of the Joint Institute of Nuclear Research as much as 649 long-lived $K^0$-meson decays were recorded

Card 1/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001445530005-4"