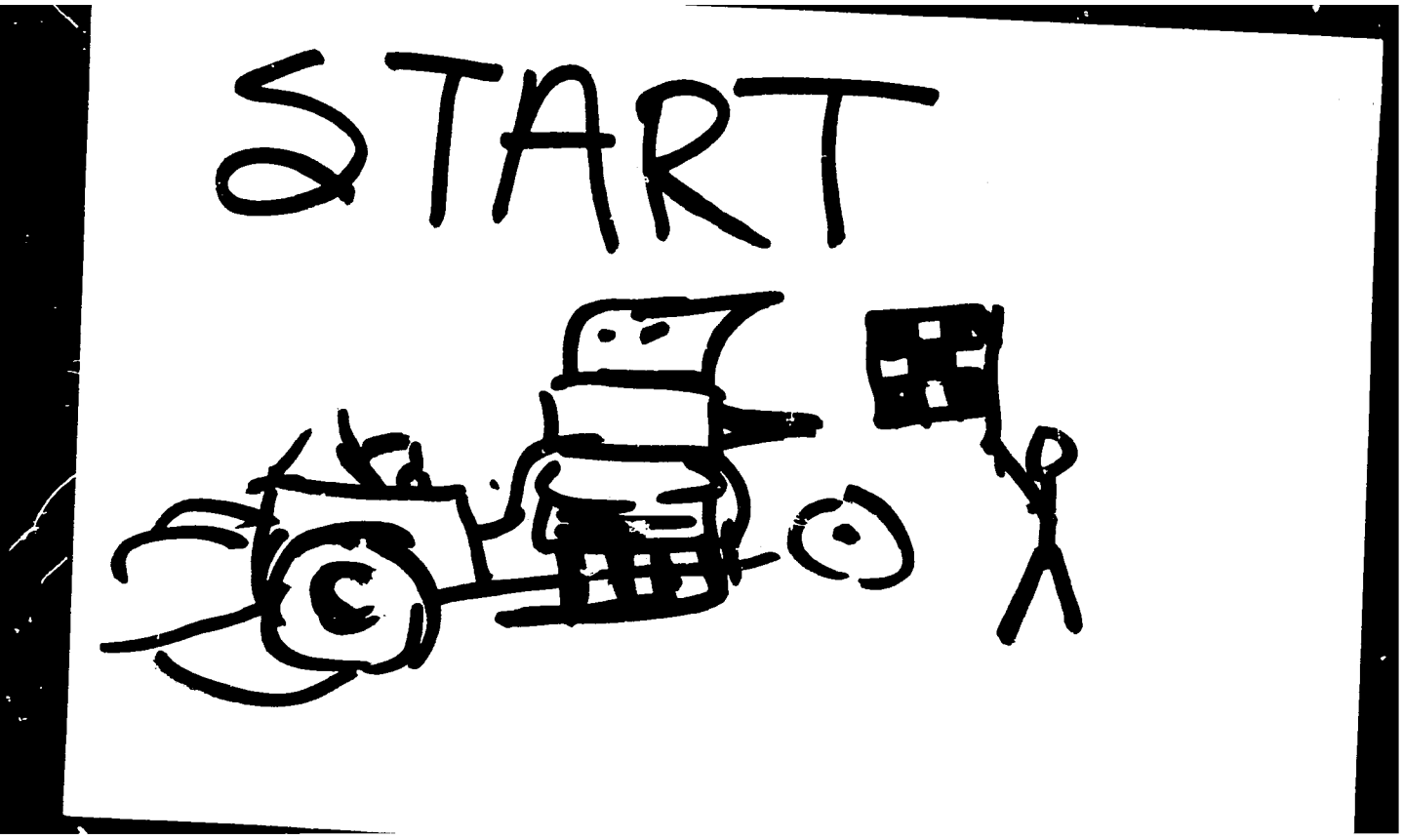

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000509110001-4"

Reel #91

Chugayev, V.N.

L 08524-62 EWT(1)/EWT(m)/EWP(k)/EWP(t)/ETI IJP(c) JD/JW
ACC NR: AP6034754 (N) SOURCE CODE: UR/0020/66/170/005/1056/1058

AUTHOR: Zakharov, V. P.; Tsvirko, Yu. A.; Chugayev, V. N. 19

ORG: none B

TITLE: Recrystallization of thin semiconductor films under the effect of a laser beam

SOURCE: AN SSSR. Dokaldy, v. 170, no. 5, 1966, 1056-1058

TOPIC TAGS: semiconductor film, amorphous germanium film, germanium film irradiation, laser irradiation, germanium film recrystallization

ABSTRACT: Amorphous germanium films 300—1500 Å thick produced by vacuum vapor deposition on glass substrate were removed from substrates, placed on aluminum foil 150-μ thick, and irradiated with laser-beam pulses which had an energy of 1 joule and a duration of 1 msec. The beam spot on germanium film was about 0.01 mm in diameter. The foil (see Fig. 1) was provided with openings b' and c' through which the germanium film could be observed with an electron microscope. The laser beam burned hole a' in the film and foil. In openings located at a distance of up to 2 mm from a', the germanium film disintegrated completely. However, in openings located at a distance of 2—4 mm (specimen in air) or 2—8 mm (specimen in a vacuum of 0.1 mm Hg) from a',

Card 1/2 UDC: 539.216.22:621.315.592 :548.53:621.375

L 08524-67

ACC NR: AP6034754

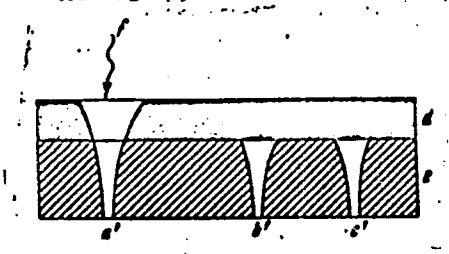

Fig. 1. Laser beam on germanium films

a' - Laser burned hole; b' and c' openings; d - germanium film; e - aluminum foil; f - laser beam.

a recrystallization of germanium took place. The disintegration and recrystallization took place only in the portion of film facing the openings. No structural changes were observed in the portions adjacent to hole a'. No recrystallization was observed when thin 300 Å films were used. Since the lattice heat conductivity of germanium is insufficient to carry within 1 msec an amount of heat which would produce a recrystallization, the phenomenon is presumed to be caused by recombination emission, which also explains why thin films are less affected than the heavy ones. Orig. art. has: 2 figures.

SUB CODE: 20, 11/ SUBM DATE: 12Jan66/ ATD PRESS: 5103

Card 2/2 LS

L 37118-66 EWT(1)/EWT(m)/T/EWP(t)/ETI/EWP(1) IJP(c) JD/GG/AT
ACC NR: AP6015768 (A,N) SOURCE CODE: UR/0048/66/030/005/0789/0792

AUTHOR: Pilyankevich, A. N.; Zakharov, V. P.; Chugayev, V. N.

ORG: Institute for the Study of Materials, Academy of Sciences of the UkrSSR (Institut problem materialovedeniya Akademii nauk UkrSSR)

TITLE: Investigation of recrystallization of thin films under electron bombardment /Report, Fifth All-Union Conference on Electron Microscopy held in Sumy 6-8 July 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 789-792

TOPIC TAGS: electron microscopy, semiconducting film, germanium, silicon, film grain, crystallization, electron diffraction

ABSTRACT: The recrystallization under the influence of electron bombardment of approximately 500 Å films of silicon and germanium, vacuum deposited at 1×10^{-4} mm Hg, was observed with an electron microscope. The fresh films were in a metastable quasi-amorphous state; no grain structure could be observed with the electron microscope and the electron diffraction patterns exhibited four very diffuse halos. Recrystallization was effected by rapidly refocusing the 25 μA 50 kV electron beam of the microscope onto a small portion of the film. Recrystallization was "practically instantaneous", although under normal operation of the microscope no change in the film could be perceived after 30 minutes of exposure. After electron bombardment

Card 1/2

L 37138-66

ACC NR: AP6015768

three sharply distinguished regions were discerned: a central region with fine equiaxial grains; an intermediate region with 10 Å acicular or dendritic crystals oriented radially from the periphery toward the center of each mesh of the supporting grid; and a peripheral region in which the film retained its initial structure. This zone structure is ascribed to the action of temperature gradients arising in the film under electron bombardment as a result of the high heat conductivity of the wires of the supporting grid. When the films were heated directly in the microscope there were no large temperature gradients and the anneal led to the appearance of fine equiaxial crystals which grew by recrystallization. The electron diffraction patterns of the crystallized films showed, in addition to many lines of the diamond-type lattice of germanium and silicon, a number of lines associated with the face-centered cubic lattice and forbidden for the diamond-type lattice by the structure factore. It is suggested that these forbidden lines may be due to multiple diffraction. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 004

Card 2/2 MT

CHUGAYEV, V.Ye., inzh.

Speed up the thawing of soil. Stroi. truboprov. 5 no.8:25-26 Ag '60. (MIRA 13:9)
(Thawing) (Earthwork--Cold weather conditions)

CHUGAYEV, V.Ye., inzh.

Means of determining the depth of preparatory working of soils.
Stroi. truboprov. 6 no. 2:25-27 F '61. (MIRA 14:5)
(Frozen ground)

CHUGAYEV, V.Ye., inzh.

Taking measures to decrease the depth of freezing in soil.
Stroi. truboprovod. 6 no.8:22-23 Ag '61. (MIRA 14:8)
(Frozen ground)

CHUGAYEVA, M. N.

"Stratigraphy and Trilobites of the Middle and Upper Ordovician of Southern Kazakhstan." Cand Geol-Min Sci, Inst of Geological Sciences, Acad Sci USSR, Moscow, 1955. (KL, No 12, Mar 55)

SO: Sum. No. 670, 29 Sep 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

Chugayeva M.N.

KELLER, B.M.; KOROLEVA, M.N.; RUKAVISHNIKOVA, T.B.; CHETVERIKOVA, N.P.; CHUGAYEVA, M.N.

Data for establishing a single stratigraphic scale for the Ordovician of Kazakhstan. Sov. geol. no.52:34-46 '56. (MLRA 10:4)
(Kazakhstan--Geology, Stratigraphic)

CHUGAYEVA, M.N.

New trilobite genera from the middle and upper Ordovician of Southern Kazakhstan. Dokl. AN SSSR 111 no.6:1336-1339 D '56. (MLRA 10:3)

1. Predstavleno akademikom N.M. Strakhovym.
(Kazakhstan--Trilobites)

CHUGAYEVA, M.N.

Ordovician trilobites in the Chu-Ili Mountains. Trudy GIN no.9:5-138 '58. (MIRA 11:12)

1. Geologicheskiy institut AN SSSR.
(Chu-Ili Mountains--Trilobites)

CHUGAYEVA, M.N.

Ordovician deposits of the Selennyakh Range. Dokl. AN SSSR 137 no. 1:158-161 Mr-Ap '61. (MIRA 14:2)

1. Geologicheskiy institut Akademii nauk SSSR. Predstavleno akademikom N.S. Shatskim.
(Selennyakh Range--Geology, Stratigraphic)

CHUGAYEVA, M.N.

Paleozoic deposits of the Verkhniy Polovinnyy Kamen' (right bank of the Kolyma River). Dokl. AN SSSR 137 no.2:400-402 Mr '61.
(MIRA 14:2)

1. Predstavleno akademikom N.S.Shatskim.
(Kolyma Valley--Geology, Stratigraphic)

CHUGAYEVA, M.N.

New Early Ordovician genus of the subfamily Hystricurinae from the Kolyma Basin. Paleont. zhur. no.3:61-64 '62. (MIRA 15:9)

1. Geologicheskiy institut AN SSSR.
(Kolyma Valley--Trilobites)

NALIVKIN, D.V., glav. red.; VERESHCHAGIN, V.N., zam. glav. red.; MENNER, V.V., zam. glav. red.; OVECHKIN, N.K., zam. glav. red.[deceased]; SOKOLOV, B.S., zam. glav. red.; SHANTSER, Ye.V., zam. glav. red.; KELLER, B.M., otv. red. toma ; MODZALEVSKAYA, Ye.A., red.; CHUGAYEVA, M.N., red.; GROSSGEYM, V.A., redaktor; KIPARISOVA, L.D., redaktor; KOROBKOV, M.A., red.; KRASNOV, I.I., red.; KRYMGOL'TS, T.Ya., red.; LIBROVICH, L.S., red.; LIKHAREV, B.K., red.; LUPPOV, N.P., red.; NIKIFOROVA, O.I., red.; OBRUCHEV, S.V., red.; POLKANOV, A.A., red.[deceased]; RENGARTEN, V.P., red.; STEPANOV, D.L., red.; CHERNYSHEVA, N.Ye., red.; SHATSKIY, N.S., red. [deceased]; EBERZIN, A.G., red.; GOROKHOVA, T.A., red.izd-va; GUROVA, O.A., tekhn. red.

[Stratigraphy of the U.S.S.R. in fourteen volumes] Stratigrafiia SSSR v chetyrnadtsati tomakh. Moskva, Gosgeoltekhizdat. Vol.2. [Upper Pre-Cambrian] Verkhnii dokembrii. Otv. red. B.M. Keller. 1963. 716 p. (MIRA 17:1)

1. Chlen-korrespondent AN SSSR (for Sokolov).

CHUGAYEVA, M.N.; MAKHMUDBEKOV, V.Ye.

Instruments for mechanical preparation of paleontological specimens. Paleont. zhur. no.2:157-159 '63. (MIRA 16:8)

1. Geologicheskiy institut AN SSSR.
(Paleontological research)

CHUGAYEVA, M.N.; ROZMAN, Kh.S.; IVANOVA, V.A.; PEYVE, A.V., glavnyy red.; KELLER, B.M., otv. red.; KUZNETSOVA, K.I., red.; MENNER, V.V., red.; TIMOFEYEV, P.P., red.

[Comparative biostratigraphy of Ordovician sediments in the northeastern U.S.S.R.] Stravnitel'naia biostratigrafiia ordovskikh otlozhenii Severo-Vostoka SSSR. Moskva, Nauka, 1964. 235p. illus. (Akademiia nauk SSSR. Geologicheskii institut. Trudy, no.106). (MIRA 17:12)

1. Chlen-korrespondent AN SSSR (for Peyve).

CHUGAYEVA, V.D.

ZHURAVLEV, S.V.; CHUGAYEVA, V.D.

Production of mesocaine (-diethylamino-2,4,6-trimethyl-acetanilide HCL). Med.prom.12 no.3:21-23 Mr '58. (MIRA 11:4)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR.

(ACETANILIDE)

SKABOVSKIY, M.S.; CHUGAYEVA, V.I.

Experimental study of the fluctuation of the transmission factor of crystal mixer circuits. Radiotekh. i elektron. 9 no.3:546-547 Mr '64. (MIRA 17:4)

ACCESSION NR: AP4024735 S/0109/64/009/003/0546/0547

AUTHOR: Skabovskiy, M. S.; Chugayeva, V. I.

TITLE: Experimental investigation of transfer-constant fluctuations in a crystal mixer

SOURCE: Radiotekhnika i elektronika, v. 9, no. 3, 1964, 546-547

TOPIC TAGS: crystal mixer, crystal diode, crystal mixer fluctuation , flicker effect, crystal diode flicker effect

ABSTRACT: The noise spectrum of DK-I1, DK-I2, DK-S2, DK-S3, and DG-S4 crystal diodes having a high flicker effect was tested within 3-100 kc in a detector-IF-amplifier-spectrum-analyzer circuit. The diodes were excited by a 3-cm reflex-klystron oscillator. Within the above frequency band, the amplitude-fluctuation spectral density was found to be about 10^{-15} and independent of the frequency. Next, the fluctuation spectrum of a superheterodyne built with the

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ACCESSION NR: AP4024735

same crystal diodes was investigated. It was found that, within a 3-100-kc band, the fluctuations of the mixers and, consequently, the sensitivity of the super-heterodyne circuit (with a reflex klystron as a heterodyne) were completely determined by the flicker effect. Orig. art. has: 2 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 21Jan63 DATE ACQ: 10Apr64 ENCL: 00

SUB CODE: GE NO REF SOV: 004 OTHER: 002

Card 2/2

CHUGAYEVA, Ye.A., inzh.

Calculating the seepage in hydrotechnical installations with consideration of the permeability to water of metal sheet piling belonging to the installations. Izv.VNIIG 48:69-84 '52. (MIRA 12:5)

(Hydraulic engineering)

CHUGAYEVA, Ye.A., kandidat tekhnicheskikh nauk.

Effective sheet pilings against filtration. Gidr.stroi. 23 no.4: 15-18 '54. (MLRA 7:7)
(Sheet piling)

CHUGAYEVA, Ye.A., dotsent, kand.tekhn.nauk

Submerged water discharge through a pressure pipe laid under the embankment. Trudy LIIZHT no.165:82-89 '59. (MIRA 13:6)
(Hydraulics)

IL'IN, V. (Frunze); ZAYTSEV, V. (Guynaksk, Dagestanskoy ASSR); YEFREMENKOV, M. (Serpukhov, Moskovskoy obl.); CHUGAYEVSKIY, N., inzh. (Moskovskaya oblast'); BRUKVA, N. (Kiyev); SYCHAYEV, S. (Mytishchi); YEVTEYEV, V. (Rostov-na-Donu)

Exchange of experience. Radio no.4:20,33,36,39,40,53 Ap '65.
(MIRA 18:5)

CHUGAYNOV, P.F.; GORBAN', I.S.; VORONKOVA, A.G.

Lyrids in 1950. Biul.VAGO no.16:25-26 '55.

(MLRA 8:6)

1. Simferopol'skaya meteornaya stantsiya imeni G.O. Zatey-shchikova. (Meteors--April)

22091

S/035/61/000/003/018/048
A001/A101

3,1560

AUTHORS: Belyakina, T.S. and Chugaynov, P.F.

TITLE: On accuracy of determining spectral classes and color excesses of stars O - A2 by means of the two-color diagram method

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 3, 1961, 38, abstract 3A348 ("Izv. Krymsk. astrofiz. observ.", 1960, v. 22, 257-274, Engl. summary)

TEXT: The authors discuss the problems of determining spectral classes and studying interstellar absorption by the method of two-color diagrams. Photoelectric observations were made of blue-yellow and blue-violet colors, C_{by} and C_{bv}, for 125 stars of spectral classes O - A2 in a system close to the U, B, V-system. The root-mean-square error of the catalogue value of colors C_{by} $\varepsilon_{by} = \pm 0^m.008$ and C_{bv} $\varepsilon_{bv} = \pm 0^m.005$. The color system was reduced to the U, B, V-system using stars for which determinations of colors B-V and U-B were available. A comparison of color characteristic Q with values of Balmer discontinuity D and estimates of spectral classes obtained by I.M. Kopylov (RZhAstr., 1959, no. 3, 1910) shows that: 1) there is a definite linear correlation between the values of Q and D; 2) re-

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22091

On accuracy of determining spectral classes... S/035/61/000/003/018/048
A001/A101

lationship between Q and Sp is non-linear and has a dispersion unexplained by observational errors; this dispersion is apparently caused by differences in color temperatures of stars having the same spectral class. It is shown that dispersion of true colors on the two-color diagram is small. The errors due to it which are introduced into determinations of stellar color excesses do not probably exceed ± 0^{m}.02. There are 19 references.

Author's summary

[Abstracter's note: Complete translation]

Card 2/2

CHUGAYNOV, P.F.

Three-color photoelectric observations of the binary eclipsing variable CQ Cephei. Per.zvezdy 13 no.3:148-156 D '60.
(MIRA 14:11)

1. Krymskaya astrofizicheskaya observatoriya AN SSSR.
(Stars, Variable)

CHUGAYNOV, P.F.

Variations in brightness of the magnetic variable star HD 153882.
Per.zvezdy 13 no.4:255-258 Mr '61. (MIRA 15:3)

1. Krymskaya astrofizicheskaya observatoriya AN SSSR.
(Stars, Variable)

S/035/62/000/007/023/083
A001/A101

AUTHOR: Chugaynov, P. F.

TITLE: Photoelectric observations of flare stars. I.

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 7, 1962, 30, abstract 7A232 ("Izv. Krymsk. astrofiz. observ.", 1961, v. 26, 171 - 180; English summary)

TEXT: In 1960 the Crimean Astrophysical Observatory started systematic continuous photoelectric recording of flare star luminosities by means of a photometer mounted on the 20-cm reflector. Results of observations of EV Lac and BD+51°2402 are presented. Four flares were recorded for the first of them. Flares no. 1, 3, 4 were observed with a blue filter, and flare no. 2 in blue and yellow light. No flares were detected in BD+51°2402. Luminosity curves and some flare characteristics of EV Lac are presented: Duration of the process of flare increasing, amplitude of stellar magnitude variation, rate and duration of the flare dying process. An analysis of these characteristics warrants a conjecture on the existence of the following regularity: the less is duration of flare in-

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S/035/62/000/007/023/083
A001/A101

Photoelectric observations of flare stars. I.

creasing process, the faster its dying. It has been found from two-color observations of flare no. 2, that radiation flux in blue light was approximately twice as great as in yellow light. In the normal state the luminosity of both stars is constant, as special observations have shown. There are 15 references.

From author's summary

[Abstracter's note: Complete translation]

Card 2/2

PASHCHENKO, V.Ya.; SISETSKIY, A.G.[Sisets'kyi, A.H.]; SIZONENKO, G.S. [Syzonenko, H.S.]; DASHKEVICH, Ya.R.[Dashkevych, IA.R.]; KOVAL'CHAK, G.I.[Koval'chak, H.I.]; KOVAL', F.T., red.; KRIP'YAKEVICH, I.P.[Kryp'iakevych, I.P.], red.; CHUGAYOV, V.P. [Chuhaiov, V.P.], red.; DERKACH, I., red.; BURKATOVSKAYA, TS. [Burkatovs'ka, TS], tekhn. red.

[Condition of Lvov workers, 1917-1939]Stanovyshche trudiashchykh L'vova, 1917-1939; dokumenty ta materialy. L'viv, Knyzhkovo-zhurnal'ne vyd-vo, 1961. 443 p. (MIRA 15:11)

1. Ukraine. Arkhivnoye upravleniye.
(Lvov--Labor and laboring classes)

CHUGIN, P.I., zootekhnik; LUK'YANCHUK, D.I., veterinarnyy fel'dsher.

Our experience in eliminating sterility in cows. Veterinariia 32 no.6:23-27 Je '55. (MLRA 8:7)

1.Kolkhoz imeni Shevchenko, Vinnitskoy oblasti.
(COWS) (STERILITY IN ANIMALS)

USSR/Farm Animals - Cattle. Q-2

Abs Jour : Ref Zhur - Biol., No 1, 1959, 2694

Author : Chugin, P.I.
Inst : -
Title : Rearing of "Simmenthaleized" Super numerary Calves.

Orig Pub : Sots. tvarinnitstvo, 1958, No 1, 36-39.

Abstract : No abstract.

Card 1/1

SUKHOBRUS, F.Ye.; CHUGIN, P.I.

Results of two years' work. Zhivotnovodstvo 21 no.10:23-27 O '59. (MIRA 13:2)

1. Direktor Vinnitskoy gosudarstvennoy sel'skokhozyaystvennoy opytnoy stantsii (for Sukhobrus). 2. Zaveduyushchiy otdelom zhivotnovodstva Vinnitskoy gosudarstvennoy sel'skokhozyaystvennoy opytnoy stantsii (for Chugin).
(Vinnitsa Province--Artificial insemination)

CHUGIN, P. I., Cand Agr Sci -- (diss) "Advanced experience in increasing milk production and improving cattle in the kolkhozes of the Vinnitskiy rayon of the Vinnitskaya oblast' of the Ukrainian SSR." Khar'kov, 1960. 21 pp; (Ministry of Agriculture Ukrainian SSR, Khar'kov Zooveterinary Inst); 200 copies; free; (KL, 51-60, 120)

AUTHOR: Chugin, Yu. I. (Moscow) 103-19-4-7/12

TITLE: Optimum Frequency Deviation in a One-Channel Telemetering System (Optimal'naya deviatsiya chastoty v odnokanal'noy teleizmeritel'noy sisteme)

PERIODICAL: Avtomatika i Telemekhanika, 1958, Vol. 19, Nr 4, pp. 346-354 (USSR)

ABSTRACT: Here the method for the computation of the optimum frequency deviation in a one-channel telemetering system at a fluctuation disturbation is shwon. The method is based upon the analysis of the energetic spectrum of the noise. It is shown that in the case of telemetering systems with idealized characteristics of the receiver an analytical formula for the magnitude of the optimum deviation can be found. The methods from the theory of random processes allow to solve this problem. In the analysis the value of the reduced mean square deviation is taken as a criterion for the evaluation of the disturbation stability of the telemetering systems. The mean square deviation is determined according to the relation between the effective voltage of the noise at the receiver output in the band $0 \div F_{filter}$ and the maximum voltage of

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the output signal. It is shown that in telemetering systems exists an optimum frequency deviation value at which the minimum error is guaranteed on account of the effect of fluctuation disturbations. Furthermore it is shown that the optimum frequency deviation is determined by the value of the generalized transfer parameter

$\beta = \frac{U_c}{\sigma\sqrt{F_{filter}}}$, At $8 \leqslant \beta \leqslant 250$ the optimum frequency deviation

($\gamma_{opt} = \frac{f_{D.max}}{F_{filter}}$) and the minimum error δ_{min} are determined by the formulae (28). δ - denotes the mean square deviation. f_D - denotes the deviation. σ - denotes the specific voltage of the disturbation. U_c - denotes the signal strength. γ and β are generalized parameters. G. A. Shastova advised the author. There are 6 figures and 5 references, 3 of which are Soviet.

Optimum Frequency Deviation in a One-Channel Telemetering System 103-19-4-7/12

SUBMITTED: July 12, 1957

AVAILABLE: Library of Congress

1. Telemetering systems--Analysis

Card 3/3

report to be presented at the 1st Intl Congress of the Intl Federation of Automatic Control, 25 Jun-5 Jul 1960, Moscow, USSR.

LERNER, A. Ya., - "The application of a self-adjusting system of automatic control"

MALOV, V. S., PEREKHODNIKOV, A. M., and [illegible] A. - "Industrial telemeasurement systems and digital technique"

MEYEROV, M. V. - "Some peculiarities of the structure of multi-communications regulation systems"

MIKHAYLOVSKIY, V. N. - "Evaluation indexes and the possibility of increasing the quality of telemeasurement systems"

MOCHINSKIY, V. V. - "Concerning the problem of established routines in automatic regulation systems"

MOROZENKO, K. A. "Principals of construction of digital double code automatic compensators"

NEYMARK, Yu. I. - "Concerning the relation of systems of automatic regulation with the parameters of periodic movements"

NIKOLAYEV, N. S., and EPSHTEYN, V. L. - "System of automatic control of cutting of rolled metal on a continuous bar mill with the use of digital calculating machines"

OBUKHNITSKIY, V. M. - "Some principles of organizing systems of complex automation of large scale chemical production and optimization of these systems"

OSTROVSKIY, G. M. - "Systems of automatic regulation with intermittent change of parameters"

PEROV, V. P. - "Statistical synthesis of impulse systems"

PETROV, B. N. - "The invariant principle and its application in the calculation of linear and nonlinear systems"

PIVEN, V. D. - "The problem of autonomy in the technique of automatic control"

POPOV, E. P. - "Some problems of synthesis of automatic control non-linear systems"

PUGACHEV, V. S. - "Method of determining the optimum system with non-linear relation of the observed function with the parameters of the signal"

PUTSILLO, V. P., PETROV, V. V., RODIONOV, R. V., and V[illegible]IN, R. R. - "Principles of construction of a single class of extra control systems for automating production processes"

ROGINSKIY, V. N. - "The development of the theory of relay devices in the USSR"

ROZENBLAT, M.A. - "Dynamic characteristics of cores with right angle hystereses winding and their influence on magnetic boosters"

ROZONER, L.I. - "Varied methods of investigating the quality of automatic control systems"

RUMIANSKIY, V. M. - "Dynamics of automatic regulation of boiler-turbine units"

SHUMILOVSKIY, N. N., MEL'TTSER, L. V., NAUMOV, A. A., MEN-CHZHI-CHZHUN, and PIVOVAROV, L. A. - "Automatic control of composition of multi-ingredient mixtures"

SNAGOVSKIY, E. S., and GENGALIN, V. G. - "Some results of work for the utilization of radioactive radiation for automatic control of mining machinery"

SOLODOVNIKOV, V. V., BATKOV, A. M., BABURIN, V. M., VAL'DENBERG, Yu. S., MATVEYEV, P. S., and POKROVSKIY, A. K. - "Analyses and synthesis of automatic control systems with the aid of calculating machine facilities"

STAKHOVSKIY, R. I., FITSNER, L. N., and SHUBIN, [illegible] "Automatic [illegible] optimizers and their use for solution of variation problems in automatic synthesis"

STRAKHOV, S. V. - "A system of alternating current electric drives with autonomous power supply"

TAKHAR, I. M., and YANUSHKOVSKIY, V. A. - "Apparatus for technical control of production with the use of nuclear radiation"

TEODORCHIK, K. F., and BENDRIKOV, G. A. - "Methods of organizing the trajectory of roots of linear systems and qualitative determination of type of trajectory"

TSIPKIN, Ya. Z. - "Elements of the theory of digital automatic systems"

VENCHKOVSKIY, D. B., KASHIRIN, V. A., CHUGIN, Yu. I., and SHASTOVA, G. A. - "Static stability of telemeasurement"

VENIKOV, V. A. - "Interactions of a mathematical modeling and calculating technology experiment in calculating loads in electrical systems"

CHUGIN, Yu. I.

PHASE I BOOK EXPLOITATION SOV/4403

Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki

Avtomaticheskoye upravleniye; [sbornik rabot] (Automatic Control; Collected Works) [Moscow] Izd-vo AN SSSR [1960] 431 p. Errata slip inserted. 5,500 copies printed.

Ed.: Ya.Z. Tsypkin, Doctor of Technical Sciences, Professor; Ed. of Publishing House: Ye.N. Grigor'yev; Tech. Ed.: G.A. Astaf'yeva.

PURPOSE: This collection of reports is intended for scientists and engineers engaged in the study of automation.

COVERAGE: The collection contains reports presented at the 6th Conference of Young Scientists of the Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics of the Academy of Sciences USSR) in January 1959. The collection covers a wide range of scientific and technical problems connected with automatic control. No personalities are mentioned. References accompany each report.

6.9000

77481
SOV/103-21-1-12/22

AUTHOR: Chugin, Yu. I.

TITLE: Noiseproof Feature of a Frequency Telemetering System in the Presence of Weak Impulse Noises

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol 21, Nr 1, pp 93-105 (USSR)

ABSTRACT: The paper investigates the noiseproof feature of the receiver of a frequency telemetering system in the presence of weak impulse noises. The block diagram of the receiver is shown on Fig. 1. The mean square error δ defined by expression (1) is considered as a criterion for the noiseproof feature.

$$\delta = \frac{\dot{V}_R}{2U_{MAX}}, \qquad (1)$$

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Noiseproof Feature of a Frequency Telemetering System in the Presence of Weak Impulse Noises

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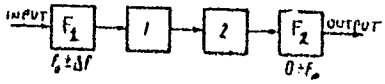

Fig. 1. Block diagram of the FM receiver. F_1, input filter; (1) limiter; (2) discriminator; F_2, output filter

Here U_{max} is the maximum voltage of the receiver output signal; V_R is the noise voltage at the receiver output. V_R is defined as $V_R = \sqrt{P_R}$ where P_R

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$$P_R = \frac{1}{2\pi}\int_0^\infty W(\omega)\,K(\omega)\,d\omega \qquad (2)$$

is the noise power at the receiver output; $W(\omega)$ is the energy spectrum of a sequence of random noise impulses at the discriminator output; $K(\omega)$ is the frequency characteristic of the output filter F_2 with the pass-band $0 - F_\Phi$. Assuming an ideal frequency characteristic $K(\omega) = 1$ an expression for this particular case is obtained for the error δ_i

$$\delta_i = 0{,}33\frac{\sqrt{m}\,\omega_\Phi^{1/6}}{\omega_d^{2/3}}\frac{U_R}{U_S}\sqrt{\Phi_i}. \qquad (4)$$

where U_R is the amplitude of impulse noise at the receiver input; U_S is the amplitude of a sinusoidal

signal at the receiver input; m is the average number of noise impulses per second; $w_\phi = 2\pi F_\phi$; ω_d is the maximum deviation of the signal frequency; ω_0 is the center frequency of the input filter; Φ_1 is given as

$$\Phi_1 = 1 - 3\left[\frac{2}{\alpha^3}\cos\alpha + \left(\frac{1}{\alpha} - \frac{2}{\alpha^3}\right)\sin\alpha\right]\cos(\omega_0 + \lambda\omega_d)\tau -$$
$$- \frac{3\pi}{2}\left(\frac{\lambda\omega_d}{\Delta\omega}\right)\left[\left(-1 + \frac{6}{\alpha^3}\right)\cos\alpha + 3\left(\frac{1}{\alpha} - \frac{2}{\alpha^3}\right)\sin\alpha\right]\frac{\sin(\omega_0 + \lambda\omega_d)\tau}{\Delta\omega\tau},$$

where τ is the duration of the noise impulse; λ is a paramiter varying from -1 to +1; $\kappa = \omega_\phi \tau$; $\Delta\omega = 2\pi\Delta f$. An expression similar to Eq (4) is derived for the error δ_b for an output filter F_2 with a bell-shaped frequency characteristic $K(\omega)$ defined as

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$$K(\omega) = e^{-\frac{\pi}{8}\left(\frac{\omega}{\omega_\Phi}\right)^2}$$

The expression for δ_b is

$$\delta_b = 0{,}76\,\frac{\sqrt{m}\,\omega_\Phi^{3/4}}{\omega_d\omega_0}\left(\frac{U_\beta}{U_S}\right)\sqrt{\Phi_b} \qquad (7)$$

where

$$\Phi_b = 1 - e^{-\frac{2}{\pi}\alpha^2}\left(1-\frac{4}{\pi}\alpha^2\right)\cos(\omega_0+\lambda\omega_d)\tau - \frac{\pi}{2}\left(\frac{\lambda\omega_d}{\Delta\omega}\right)e^{-\frac{2}{\pi}\alpha^2}\cdot\frac{4\alpha^2}{\pi}\left(3-\frac{4\alpha^2}{\pi}\right)\frac{\sin(\omega_0+\lambda\omega_d)\tau}{\lambda\omega\tau},$$

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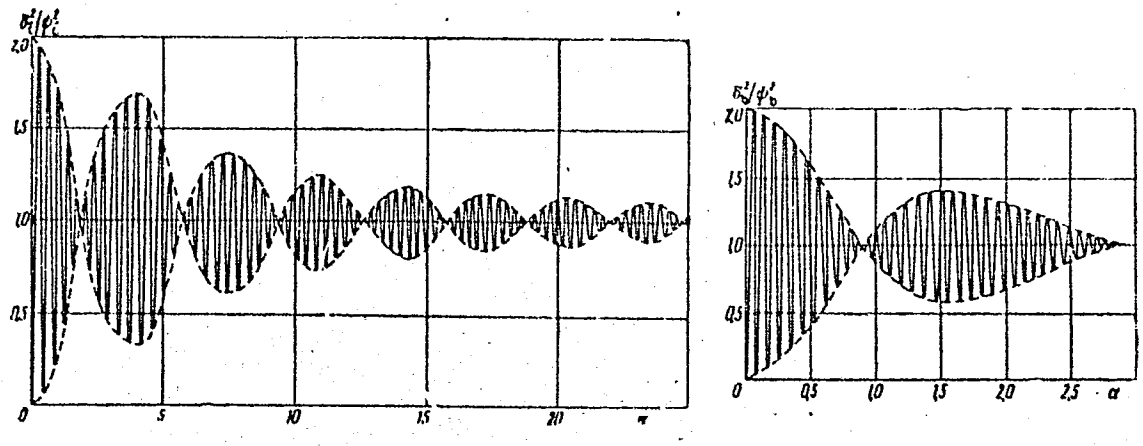
The relationship between δ_i^2, δ_b^2 and the noise duration is illustrated on Fig. 2.



Card 6/11 Fig. 2.

for which the following expressions are valid

$$\psi_i = 0{,}33\frac{\sqrt{m}\,\omega_0^{n}}{\omega_d\omega_0}\left(\frac{U_n}{U_c}\right), \quad \psi_b = 2{,}3\psi_i, \quad \frac{\lambda\omega_d}{\Delta\omega} \ll 1.$$

It is seen on Fig. 2 that the relationship between the error and $\kappa = \omega_\phi\tau$ has the form of a modulated high frequency oscillation. From Eqs. (4) and (7) it follows that maximum errors are caused by a noise impulse duration defined by $(\omega_o + \lambda\omega_d)\tau = \pi$. It is stated that expressions for the maximum error may be written as

$$\delta^{\cdot}_{i\,max} \leqslant \frac{0{,}1}{(\gamma-1)\sqrt{\gamma}},$$

$$\delta^{\cdot}_{b\,max} \leqslant \frac{0{,}23}{(\gamma-1)\sqrt{\gamma}},$$

When the following conditions are satisfied: (a) $\omega_d = \Delta\omega - \omega_\varphi$ = const; (b) at the output of F_1 there is no superimposition of transient processes produced by separate noise impulses; (c) the impulse number $m \rightarrow 2\Delta f$, and the maximum noise-to-signal ratio at the output of F_1 is $k_{max} \rightarrow 1$. Usually, for telemetering systems, $\gamma \geqslant 5$, and from Eq. (12) it follows that $\delta_{1\,max} \leq 1.1\%$ and $\delta_b \leq 2.5\%$. These values are considered relatively small. The relationship between δ_{max} and k_{max} is shown on Fig. 3,

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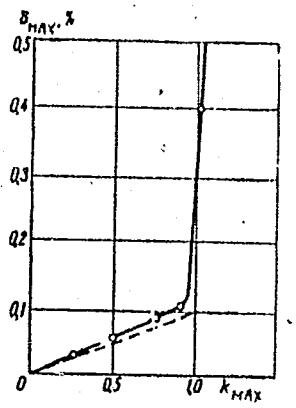

Card 9/11 Fig. 3.

where the dotted line represents results calculated for $k \leq 1$ and the solid line is obtained experimentally. It is seen on Fig. 3 that for $k_{max} > 1$ the error increases rapidly. The condition $k_{max} = 1$ may be considered as a threshold of the noiseproof feature in the presence of an impulse noise. It is shown that an optimum deviation $\omega_{d\,opt} = \Delta_{opt} - \omega_{\phi}$ exists at $k_{max} = 1$. The minimum error corresponding to $\omega_{d\,opt}$ is expressed by Eq. (13a) and (13b).

$$\delta i_{MIN} = \frac{0{,}175\sqrt{\frac{m}{\omega_{\phi}}}}{(\tau_{opt}-1)\tau_{eff}}, \quad (13a)$$

$$\delta b_{MIN} = 2{,}3\,\delta i_{MIN} \quad (13b)$$

These expressions coincide with Eqs. 12a and 12b when $m \rightarrow 2\Delta f$. The author arrives at the conclusion that

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the magnitude of an error permissible for telemetering is exceeded only when $k_{max} > 1$. In this case, measurements for the limitation of impulse noises should be taken. The paper has two appendices. In the first appendix an expression is derived for the discriminator output voltage produced by impulse noises. In the second appendix an expression is derived for $W(\omega)$ (see Eq. (2)). There are 6 figures; and 7 references, 4 Soviet, 3 U.S. The U.S. references are: Maurice, R. D., VHF Broadcasting, Reduction of Impulsive Interference in FM Reception, Electronic and Radio Engineer, Vol. 34, New ser., Nr 8, 1957; Tellier, J. C., An Analysis of the Behaviour of Limiter-Discriminator FM Detector in the Presence of Impulse Noise, Proc. of National Electronics Conference (Chicago), Vol. 3, 1947; Zinn, M. K., Transient Response of an FM Receiver, Bell System Techn. J., Vol 27, Nr 4, 1948.

SUBMITTED: April 28, 1959
Card 11/11

32589

S/569/61/003/000/008/011
D201/D305

9,8300 6,9000

AUTHORS: Venchkovskiy, L.B., Kashirin, V.A., Chugin, Yu.I., and Shastova, G.A. (USSR)

TITLE: Interference-killing properties of telemetering

SOURCE: International Federation of Automatic Control. 1st Congress, Moscow, 1960. Statisticheskiye metody issledovaniya. Teoriya struktur, modelirovaniye, terminologiya, obrazovaniye. Moscow, Izd-vo AN SSSR, 1961, 368 - 383

TEXT: The authors present the results of their investigation at the Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, AS USSR), of the interference-killing properties of telemetering systems in the presence of weak, comparatively strong and strong fluctuation and inpulse interference. In general, without specific limitations, good interference-killing properties may be obtained with different methods of telemetering. In most cases of actual industrial telemetering systems and in transistorized radio-telemetry systems, the signal is limited in

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Interference-killing properties ...

amplitude. The authors show that, as opposed to the earlier assumption, the best interference-killing properties are exhibited by cooled binary telemetering systems, the maximum interference-killing properties are actually shown by frequency systems of telemeterming, for a wide range of changes of parameters and interference level. Such a performance could not be obtained with coded telemetering systems without considerable technical complications. As the most suitable method of noise analysis in telemetering systems, a simple photographic method of determining the probability density of amplitude is suggested. It consists of taking photographs of the random process displayed on the screen of a CRO with subsequent analysis of the film by means of a micro-photometer. This method was found to be suitable for analyzing fluctuating processes at frequencies from 1 Kc/s upwards, using standard after-glow tubes (half-glow time 10^{-2} ÷ 10^{-3} sec). A discussion followed, in which the following took part: V.A. Il'in (USSR), R.R. Vasil'yev (USSR) and A.M. Pshenichnikov (USSR). There are 1 table and 13 references: 9 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: S.O. Rice, Bell Syst. Tech.

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32589
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Interference-killing properties ...

J., vol. 27, no. 1, 1948; K.M. Uglov, RE Transaction on Telemetry and Remote Control, May, vol. 3, no. 2, 1957; K.M. Uglov, IRE Transaction on Telemetry and Remote Control, April, no. 1, 1957.

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S/194/61/000/007/026/079
D201/D305

6.7800

AUTHOR: Chugin, Yu.I.

TITLE: Interference-killing properties of a single-channel telemetering system with strong fluctuation of interference

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 7, 1961, 53, abstract 7 V399 (V sb. Avtomat. upravleniye, M., AN SSSR, 1960, 312-319)

TEXT: The interference-killing properties are considered of a single-channel frequency telemetering system with strong interference. These properties are evaluated from the values of the reduced r.m.s. and systematic errors. Formulae are given, obtained by the correlation methods of analysis, for determining the r.m.s. and systematic errors together with curves of error distribution at the system output for various signal to noise ratios. It is shown that the main error of measurement is the systematic error which repre-

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Interference-killing...

sents interferences due to changes of the average level of the output signal. The bloc-diagram is given of a receiver with additional circuits at the receiving end which compensate to a large extent for the systematic measurement error. 6 figures. 2 references.
[Abstracter's note: Complete translation]

Card 2/2

CHUGIN, Yu.I. (Moskva)

Interference rejection of a FM remote control system in the presence of fluctuational interferences [with summary in English]. Avtom. i telem. 22 no.5:664-678 My '61. (MIRA 14:6)
(Remote control)

35325
S/103/62/023/002/013/015
D230/D301

9.3279
9.8200 (1482)

AUTHOR: Chugin, Yu.I. (Moscow)

TITLE: Noise stability of frequency remote control system with pulse noises

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 2, 1962, 222 - 241

TEXT: Theoretical and experimental investigations of the system under the action of pulse interference having known law of amplitude distribution yield the following results: 1) The frequency remote control system has a high degree of noise stability and it is capable of operation even when the interference considerably exceeds the signal level. Inserting limiters at the input and at the output of the discriminator, the system will operate reliably for a noise to signal ratio equal to 100 at the output of the first filter when the following relations hold: $m/\Delta f_1 \leq 0.3$, $m/\Delta f_3 \geq 10$, and $\Delta f_1/2\Delta f_3 \geq 50$, where m - mean number of pulse noises in 1 sec. Δf_1 - full bandwidth of first filter, Δf_3 - full bandwidth of

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third filter. 2) With strong pulse interference a high degree of noise stability can only be achieved for a large bandwidth of the input filter; thus, the larger the bandwidth the higher the noise stability. 3) In remote control systems the receiver should have a narrow-band discriminator with a limiter at its input; inserting the limiter at the output of the discriminator reduces noise stability with pulse interference. 4) In the transmission of intelligence on a two-frequency code, it is expedient to use the code with sequential transmission of subcarriers; greater stability is thus obtained than for the code with parallel transmissions; this holds for pulse as well as for fluctuation interference. 5) For a simultaneous input to the reciever of pulse and fluctuation interference, there exists optimum frequency deviation and, corresponding to it, the optimum bandwidth of input filter for which the ratio of signal to noise is maximum. 6) For the periodic pulse interference the noise stability of these channels rapidly diminishes when the subcarrier is a submultiple of the repetition frequency of pulse interference. There are 9 figures and 8 references: 7 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language

publication reads as follows: R.D. Maurice, Electronic and Radio Engineer, v. 34, new ser. no. 8, 1957.

SUBMITTED: September 23, 1961

X

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37829

S/103/62/023/005/010/011
D407/D301

9,8300
9,3273

AUTHOR: Chugin, Yu.I. (Moscow)

TITLE: Optimal parameters of multi-channel FM/FM telemetering system with random noises

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 5, 1962, 644 - 657

TEXT: The noise-stability of a multi-channel FM/FM telemetering system is investigated, allowance being made for the instability of the carrier- and subcarrier frequency in the presence of an arbitrary level of input noises. The optimum parameters of a system with double frequency modulation are determined by methods, developed by the author in 2 earlier works. The receiver of the FM/FM-system under consideration incorporates (in the carrier-frequency channel) an input filter, a limiter and a discriminator, and (in each subcarrier-frequency channel) the band filter Φ_2, limiter, discriminator and output filter. The receiver consists of 2 parts. The following curves were constructed after analyzing the two parts of the re-

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Optimal parameters of multi-channel ...

ceiver: The dependence (on the given total error δ_{tot}) of the optimum pass-band, of the minimum permissible signal/noise ratio at the input, and of the optimum modulation-indexes of the carrier-and subcarrier frequency-channels. Formulas are obtained for the mean-square error and the mean error, due to the noises. An additional error arises as a result of frequency instability. A still better estimate of the noise-stability is obtained by using the total error δ_{tot}. In order to determine the optimum parameters of the FM/FM system, it is convenient to introduce generalized parameters, expressing the specific signal/noise ratios and the relative pass-bands. For each signal/noise value at the output of the filter Φ_2 of a given channel (ρ_2), exists an optimum value of the band-width coefficient γ_{2opt} which ensures that the total error δ_{tot} is a minimum. An increase in the instability of the subcarrier frequency leads to a sharp increase in $\delta_{tot.min.}$ and γ_{2opt}, and to decrease in z_{2opt} ($z_{2opt} = \rho_2^2/2\gamma_{2opt}$). From the constructed curves it is evident that

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the quantities ρ_2, γ_{2opt}, $\delta_{tot.min.}$ and $z_{2opt.}$ are related by a one-one correspondence; hence it is possible to determine from the given error δ_{tot} and from $T = 1/2F_m$, the optimum parameters of the sub-carrier frequency-channel. Summing up the results of the analysis of the first- and second part of the receiver, it is possible to determine the optimum parameters of the receiver as a whole. Further, the noise-stability and efficiency of an N-channel FM/FM system are compared with those of N single-channel FM systems, frequency-instability being taken into account. It is concluded: 1) An optimum-relationship exists between band-width, fastness of transmission T, and system accuracy. With given δ_{tot} and T, it is possible to determine the optimum values of the modulation indexes m_{1opt} and m_{2opt} and of γ, so that a minimum signal-strength ρ_{min} is required. 2) It is convenient to choose γ_{opt} according to the noise-stability of the last (highest) channel, as in this case the error at the output of the other channels does not exceed the error at the output of the N-th channel. 3) With a considerable relative carrier-frequency in-

stability in FM and FM/FM systems (i.e. $n_0 = (\Delta f_{inst.}/F_m) > 5$ -10) and small relative instability of the subcarrier frequency, the FM/FM system provides for a given error, with a smaller frequency band and weaker signal per channel than an FM system; i.e. under such conditions an N-channel FM/FM system has greater noise-stability and efficiency than N single-channel FM-systems. If the carrier- and subcarrier frequencies are ideally stable, then the noise-stability does not increase on passing to a multi-channel system (from N single-channel systems). There are 7 figures and 8 references: 4 Soviet-bloc and 4 non-Soviet-bloc, (including 1 translation).

SUBMITTED: July 1, 1961

L 37635-66 EWT(d)/FSS-2/EEC(k)-2
ACC NR: AT6011834 (A) SOURCE CODE: UR/3176/65/000/001/0218/0231

AUTHOR: Chugin, Yu. I.

46
B+1

ORG: Institute of Automatics and Telemechanics AN SSSR (Institut avtomatiki i telemekhaniki AN SSSR)

TITLE: Effect of weak and strong impulse noise on a telemetry frequency receiver

SOURCE: Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut kompleksnoy avtomatizatsii v neftyanoy i gazovoy promyshlennosti. Trudy, no. 1, 1965. Avtomatizatsiya tekhnologicheskikh protsessov (Automation of technological processes), 218-231

TOPIC TAGS: telemetry system, signal noise separation, telemetry receiver

ABSTRACT: The noise rejection in a telemetry frequency receiver is theoretically analyzed for the case of impulse noise of any level the effect of a series of noise impulses with constant or random heights is studied. It is assumed that the noise impulses do not overlap after the first filter and do overlap after the second filter to such a high degree that the output noise voltage is normalized and approaches a normal-distribution-law fluctuation voltage. It is found that: (1) With weak impulse

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noise, the frequency telemetry system has a high noise rejection (measurement error, 2% or less), the receiver with a wideband discriminator showing better noise rejection; (2) With strong impulse noise, the error increases sharply, the mean error more rapidly than the mean-square error; in this case, the receiver with a narrow-band discriminator ensures a better noise rejection; (3) With a random-height strong noise, the noise-caused error is determined by the average noise duration at the first-filter output and by the number of noise impulses per unit time; (4) Optimal parameters of transmission exist which minimize the error within a certain frequency band; with off-optimal wider bands, the error decreases as the bandwidth increases. Orig. art. has: 7 figures and 22 formulas.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 007

Card 2/2 vmb

CHUGREYEV, A.

Mixed brigades in plants manufacturing wooden containers. Biul. nauch.inform.: trud i zar.plata 3 no.5:33-36 '60. (MIRA 13:8)
(Murmansk--Woodworking industries)

1. CHUGREYEV, A. V.
2. USSR (600)
4. Lumbering- White Sea
7. Floating timber in cigar-rafts on the White Sea. Les. prom. 13 no. 3 1953

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

CHUGREYEV, A.V.

Mechanization of the hydrothermal treatment of barrels. Der. prom. 9 no.1:21-22 Ja '60. (MIRA 13:4)

1. Murmanskiy bondarnyy zavod.
(Murmansk--Barrels)

CHUGREYEV, A.V., inzh.

Mechanizing the washing disinfecting, and drying of barrels.
Mekh.i avtom.proizv. 15 no.6:37-38 Je '61. (MIRA 14:6)
(Barrels—Cleaning)

CHUGREYEV, A.V.

Improving the technology of the thermal processing of barrel frames. Der.prom. 11 no.4:22 Ap '62. (MIRA 15:4)
(Barrels)

VASIL'YEV, A.A.; OKOLOVICH, M.N.; CHUGREYEV, A.V.; KRYUCHKOV, I.P., red.

[Manual on laboratory course in "The electrical section of electric power plants."] Rukovodstvo dlia raboty v laboratorii po kursu "Elektricheskaia chast' stantsii." Red. I.P.Kriuchkov. Moskva, Mosk. energ. in-t, 1963. 85 p. (MIRA 16:10)

1. Prepodavateli kafedry elektricheskikh stantsiy Moskovskogo energeticheskogo instituta (for Vasil'yev, Okolovich, Chugreyev).
(Electric power plants--Electric equipment)

CHUGREYEV, L. I., inzh.

Study of the kinematic parameters of a crawler drive with an inclined drive chain guide. Izv. vys. ucheb. zav.; gor. zhur. no.9:115-124 '61. (MIRA 15:10)

1. Moskovskiy gornyy institut imeni I. V. Stalina. Rekomendovana kafedroy rudnichnogo transporta.

(Chains)

CHUGREYEV, L.I., kand. tekhn. nauk

Kinematics of a traction chain and the geometrical parameters of crawler drives with hinge-joint supported cams of apron and belt-chain conveyors. Izv. vys. ucheb. zav.; gor. zhur. 6 no.9: 104-113 '63. (MIRA 17:1)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki. Rekomendovana kafedroy rudnichnogo transporta.

CHUGREYEV, L.I., inzh.

Study of the geometric parameters and power characteristics of the auxiliary drive of a slot conveyor. Izv. vys. ucheb. zav.; gor. zhur. no.6:113-123 '61. (MIRA 16:7)

1. Moskovskiy gornyy institut imeni Stalina. Rekomendovana kafedroy rudnichnogo transporta.
(Conveying machinery)

CHUGREYEV, L.I., kand.tekhn.nauk

Study of an intermediate crawler-type drive with controlled cams for conveyors with a chain traction unit. Izv.vys.ucheb.zav.; gor. zhur. 7 no.2:114-123 '64. (MIRA 17:3)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki. Rekomendovana kafedroy transportnykh mashin i kompleksov.

CHUGREYEVA, A.S.

5/065/60/000/004/006/017
E071/E455

AUTHORS: Levchenkov, D.N., Khudyakova, A.D., Kalitayeva, A.I., Shkiyarok, Ye.A., Khoklov, V.I. and Chugreyeva, A.S.

TITLE: Non-ionogenic Surface-Active Substances for De-Emulsifying Agents for Petroleum Emulsions

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, No.4, pp.24-29

TEXT: Results of synthesis and testing of non-ionogenic surface-active substances (de-emulsifying agents) from fractions of alkylphenols, obtained as a by-product in the production of an antioxidant additive 2,6-ditertiarybutylparacresol (DBPK) are given. Starting material for the synthesis monoalkylcresol fraction (126 to 152°C at 20 mm Hg) and residue from the production of DBPK and their mixtures and oxyethylene were taken. The experimental procedure is described in some detail. Specimens of alkylenglycols obtained were tested on petroleum emulsions as de-emulsifying agents and surface tensions of their aqueous solutions of various concentrations were tested (Fig.1). By varying the duration of oxyethylation process products containing various numbers of oxyethylene groups were obtained. It was found

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that compounds containing less than 10 groups of oxyethylene were not completely soluble in water, while compounds containing larger proportions of these groups were well soluble. The surface tension of compounds containing from 14 to 32 groups varied little, particularly at low concentrations. With increasing number of groups up to 40 and above, the surface active properties of the compounds deteriorate. The best results were obtained with substances containing between 25 to 30 of oxyethylene groups. The latter type of compounds was named VNII NP-58. Its de-emulsifying activity was compared with other reagents used at present in the petroleum industry (table) and was found to be superior to that of other reagents. The consumption of this agent for the de-emulsification of Bashkirian crudes amounts to 0.005 - 0.01% and on thermochemical desalting of the Romashk crude - 0.01%. It is concluded that oxyethylation of by-products obtained during the production of DBPK should be introduced into the industry. There are 2 figures, 1 table and 6 Soviet references.

ASSOCIATION: VNII NP

Card 2/2

Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva.

CHUGREYEVA, M.

Concern for industrial safety at a coking plant. Sets.trud no.2:114-115 F '56. (MIRA 9:7)
(Moscow--Coke industry) (Industrial safety)

CHUGREYEVA, M.

Skillful popularization of the achievements of innovators. Sots.trud no.8:88-90 Ag '56. (MLRA 9:10)
(Technical education)

CHUGREYEVA, M.

Conference on the scientific organization of labor. Sots.trud 4 no.3:141-143 Mr '59. (MIRA 12:4)
(Sverdlovsk--Work, Method of--Congresses)

MAKSIMOV, Aleksandr Aleksandrovich; CHUGREYEVA, Margarita Mikhaylovna; GUROV, S., red.; SHILYK, M., tekhn.red.

[Technological progress and material self-interest]Tekhnicheskii progress i material'naia zainteresovannost'. Moskva, Mosk. rabochii, 1962. 58 p. (MIRA 15:11)
(Technological innovations) (Bonus system)

CHUGREYEVA, N.V.

Reject

Journal of the American
Ceramic Society
Vol. 37 No. 5
May 1, 1954
Cements, Limes, and Plasters

③ Mat.

Rapid method for the determination of aluminum in cements. L. M. KUL'BERG, N. V. CHUGREEVA, AND L. A. MOLOT. *Tsement*, 18 [6] 21-23 (1952).—The Fe^{3+} is reduced to Fe^{2+} in the solution, pH is adjusted at 4.4. Aluminon is added, and comparison is made with standard solutions of $CoCl_2 \cdot 6H_2O$. A photometer can also be used. Two variations are described. In one, which is suitable for the complete analysis of cement, the sample is treated with HCl, SiO_2 is filtered off, and Fe and Al are determined in the filtrate. In the second, it is not necessary to remove the hydroxides first. Results of three analyses show deviations of −0.11 to +0.03% from the gravimetric method. B.Z.K.

Chugreyeva, N. V.

15-57-5-6332

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 5, p 93 (USSR)

AUTHORS: Kul'berg, L. M., Chugreyeva, N. V. Molot, L. A.

TITLE: The Determination of Aluminum in Natural Waters by the Aluminon (?) Method (K opredeleniyu alyuminiya v prirodnykh vodakh alyuminonovym metodom)

PERIODICAL: Uch. zap. Saratovsk. un-ta, 1956, Vol 43, pp 131-134.

ABSTRACT: The method developed by the authors is described. One hundred milliliters of water are acidified by one milliliter of H_2SO_4 and are passed in small portions through a cadmium reductor. The first portion of the filtrate is discarded and the remainder is collected in a dry flask or vial. To a milliliters of "reducing" water (a is about 0.2 ml to 1.0 ml), an acetate buffer solution (with a pH of 4.4) and 0.1 ml of 0.5 percent solution of aluminon is mixed to form a volume of 10 ml. After the solution has stood for ten minutes, the optical density of the solution of lacquer is measured

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15-57-5-6332

The Determination of Aluminum in Natural Waters (Cont.)

on an FM photometer using a light filter of λ = 530 mμ in a vessel having a diameter of 10 mm. The content of Al is found by a computed curve made from data taken under identical conditions.

Card 2/2 K. N. R.

CHUGREYEVA, N. V.

AUTHOR: Chugreyeva, N. V. 79-11-47/56

TITLE: Investigations in the Field of Substituted Phenylosazones and Phenylhydrazones (Issledovaniya v oblasti zameshchennykh fenilozazonov i fenilgidrazonov).
I. The Influence of Individual Substituents on the Indicator Properties of Some Phenylosazones and Phenylhydrazones (I. Vliyaniye otdel'nykh zamestiteley na indikatornyye svoystva nekotorykh fenilozazonov i fenilgidrazonov).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11, pp. 3136-3142 (USSR)

ABSTRACT: Among soviet chemists as well as abroad a special significance is put on the problem concerning the connection between the structure of the organic compounds and their indicator properties. As all authors say themselves no all-embracing importance and no applicability to each class of indicators may be ascribed to the rules determined in this field. According to Kutsnetsov, however, several universal rules exist which he described together with Koshelov in a paper. In the investigation of a number of phenylosazones and hydrazones the authors found that the nitro-group in the benzene nucleus in a certain position to the imino-

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Investigations in the Field of Substituted Phenylosazones and Phenylhydrazones. 79-11-47/56
I. The Influence of Individual Substituents on the Indicator Properties of Some Phenylosazones and Phenylhydrazones

nitrogen, in ortho-, para- or simultaneously in both positions, gives definite indicator properties to these compounds. To o-nitro group, e.g., displaces the transition interval to the acid side, the paranitro group does not do this. The transition of the acid form of the investigated compounds into the alkaline form causes a deep-colored effect which especially manifests itself in the p-nitrophenylosazones of dioxytartaric acid. The introduction of bromine into the benzene nucleus causes no indicator properties in phenylosazones and phenylhydrazones.
There are 6 figures, 3 tables, and 10 references, 4 of which are Slavic.

ASSOCIATION: Saratov State University (Saratovskiy gosudarstvennyy universitet).

SUBMITTED: December 10, 1956

Card 2/2

1. Chemical indicators - Properties 2. Phenylosazones - Indicator properties 3. Phenylhydrazones - Indicator properties

CHUGREYEVA, N. V.: Master Chem Sci (diss) -- "The indicator properties of certain phenyl-osazones and -hydrazones". Saratov, 1958. 10 pp (Min Higher Educ USSR, Saratov State U im N. G. Chernyshevskiy), 100 copies (Kl, No 6, 1959, 127)

CHUGREYEVA, N.V.

CHUGREYEVA, N.V.; YAMPOL'SKIY, I.Z.

Drop method of detecting yttrium with the help of eriochrome azurol. Uch. zap. Kursk. gos. ped. inst. no.11:143-149 '58. (MIRA 14:2)

1. Kafedra khimii Kurskogo gosudarstvennogo pedagogicheskogo instituta i kafedra analiticheskoy khimii Saratovskogo universiteta.
(Yttrium--Analysis) (Eriochrome azurol)

AUTHOR: Chugreyeva, N. V. 79-28-5-57/69

TITLE: Investigations in the Field of Substituted Phenylosazones and Hydrazones (Issledovaniya v oblasti zameshchennykh fenilozazonov i gidrazonov).
II. On Some New Nitrophenylosazones of Dioxytartaric Acid (II. O nekotoryknnovykh nitrofenilozazonakh dioksivinnoy kisloty)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 5, pp. 1365-1368 (USSR)

ABSTRACT: From numerous references is known that the phenylosazones and hydrazones of the carbonyl compounds as well as their nitro- and halogen derivatives were synthetized and until now have been only used for the identification of these compounds. In this case mainly such constants like melting point, crystal form, color and solubility in organic compounds were used. In the description of the methods of the syntheses of some nitrophenylhydrazones and osazones in a number of cases it is cited at their capability to solve in alkali liquors without change of color and thus to show to a certain degree indicator properties (refs 1-6).

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Investigations in the Field of Substituted Phenylosazones and Hydrazones. 79-28-5-57/69

II. On Some New Nitrophenylosazones of Dioxytartaric Acid

This circumstance caused the author to synthetize and investigate, besides the phenylhydrazones and osazones already described in publications, also a number of other compounds the properties of which had been unknown until now. Here nitrophenylosazones of dioxytartaric acid are concerned, the structure of which gave reason to assume that they also could develop indicator properties. One of the known methods of synthesis was used for these aims, namely, the method of the direct conversion of the carboxyl compounds with nitroderivatives of phenylhydrazine which, in the case of dioxytartaric acid and of p-nitrophenylhydrazine, takes place according to the mentioned scheme. The following compounds not yet described in references were thus synthetized: p-nitrophenylosazone, o-nitrophenylosazone, m-nitrophenylosazone and 2,4-dinitrophenylosazone of the dioxytartaric acid, as well as the monosubstituted salt of the 2,4-dinitrophenylosazone of dioxytartaric acid. In the respective characterization of these compounds their

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Investigations in the Field of Substituted Phenylosazones 79-28-5-57/69
and Hydrazones.
II. On Some New Nitrophenylosazones of Dioxytartaric Acid

indicator properties were found with the exception of m-nitrophenylosazone. There are 7 references, [illegible] of which are Soviet.

ASSOCIATION: Saratovskiy gosudarstvennyy universitet
(Saratov State University)

SUBMITTED: April 15, 1957

[illegible]: Library of Congress

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CHUGREYEVA, N.V.

Some nitrophenyl osazones and nitrophenyl hydrazones as indicators at high pH values. Zhur.anal.khim. 15 no.4:391-393 Jl-Ag '60. (MIRA 13:9)

(Osazones) (Hydrazones)

CHUGREYEVA, N.V.

Use of some nitrophenyl osazones and hydrazones for determining free sodium hydroxide by direct titration. Izv.vys.ucheb.zav.; khim.i khim.tekh. 4 no.1:16-19 '61. (MIRA 14:6)

1. Saratovskiy gosudarstvennyy universitet imeni N.G.Chernyshevskogo, kafedra analiticheskoy khimii.
(Sodium hydroxide) (Osazone) (Hydrazone)

MUSTAFIN, I.S.; FRUMINA, N.S.; CHUGREYEVA, N.V.

"Chemical analysis of industrial waste waters" by IU.IU.Lur'e, A.I. Rymnikova. Reviewed by I.S.Mustafin, N.S.Frumina, N.V.Chugreeva. Zav.lab. 29 no.12:1509 '63. (MIRA 17:1)

CHUGREYEVA, V.M. (Simferopol')

Case of peculiar perception disorder in a liver disease. Vrach. delo 4:135-136 Ap '62. (MIRA 15:5)

1. Krymskaya psikhonevrologicheskaya klinicheskaya bol'nitsa.
(LIVER--DISEASES) (PERCEPTION, DISORDERS OF)

CHUGREYEVA, V.N.

Technical councils of enterprises are at work. Tekst. prom. 20 no.11:84-85 N '60. (MIRA 13:12)
(Moscow Province--Textile industry)