KULIKOVSKIY, P. K. DOCENT

PA 3/49T38

USSR/Electronics
    Circuits, Electronic
    Regulators, Electronic

May 48

"Vacuum Tube Automatic Machine Regulator With Broad
Range of Regulation," L. V. Karnyushin, Docent
P. K. Kulikovskiy, Candidates Tech Sci, Sci Res
Lab for the Electrification of Industries of the
"Sevzapelektromontazh" Trust, 2 pp

"Elektrichestvo" No 5

Gives results of research to determine best construc-
tion for automatic regulator for electric machinery,
having maximum reliability, rapid action and sta-
bility of regulation, to base the control circuit

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USSR/Electronics (Contd)   May 48

on the regulating object, and to increase accuracy
of dynamic regulation.

3/49T38

KULIKOVSKIY P. K.

Kulikovskiy P. K., "Electronic and Electro-mechanical Regulators of Speed Coordination between Sections," in his book Elektrooborudovaniye mashin tsellyulozno-bumazhnoy promyshlennosti /Electric Equipment on Machines for the Cellulose and Paper Industry/, Moscow and Leningrad, Gosenergoizdat, 1953, Pages 277-294, with illustrations.

ALLILUYEVSKIY, A. K.

Elektrooborudovanie mashin tselliulozno-burazhnoi promyshlennosti (Electrical equipment of machines of the wood-pulp and paper industry). Moskva, Gosenergoizdat, 1953. 356 p.

SO: Monthly List of Russian Accessions, Vol. 7, No. 7, Oct. 1954

KULIKOVSKIY, Petr Konstantinovich, kand. tekhn. nauk; SHUSTOV,
    Aleksandr Dmitriyevich, inzh.; VOL'MAN, N.S., red.;
    SOBOLEVA, Ye.M., tekhn. red.

[Electric drives for machinery in the cellulose and paper-
making industry]Elektroprivod mashin tselliulozno-
bumazhnoi promyshlennosti. Moskva, Gosenergoizdat, 1962.
371 p.   (MIRA 16:4)
        (Cellulose)
    (Paper-making machinery--Electric driving)

KULIKOVSKIY, P. P.

Marine Eng.
Heat

DECEASED
c. '60

1962/7

see ILC

KULIKOVSKIY, R. E.

"Synthesis of Sweep (Pulse) Forming Four-Terminal Networks" Cand Tech Sci, Faculty of Radio Communications and Radio Broadcasting, Moscow Electrical Engineering Inst of Communications, 1953-1954. (VS, Jan 55) (Brief abstract available)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

133-8-19/28

AUTHORS: Kulikovskiy, S.A., Kalyuzhnyy, A.N., Barg, M.M. and
Zeylikovich, B.Ya., Engineers

TITLE: Experience in the application of a protective atmosphere.
(Opyt primeneniya zashchitnoy atmosfery).

PERIODICAL: "Stal'" (Steel), No.8, 1957, pp. 740-744 (USSR).

ABSTRACT: A description of equipment for annealing sheets in a
protective atmosphere (muffle with a sand seal, covered
by a refractory lined hood) is given (Fig.1). The protec-
tive atmosphere is obtained by combustion of producer gas
(from anthracite) purified with monoethanolamine. After
cooling to 25-30 C the combustion products are again
purified from CO_2 with monoethanolamine and dried with
alumosilicagel and silicagel. The installation for the
generation of the protective atmosphere was designed by
Stal'proyekt (Figs.2 and 4). Initial difficulties en-
countered and methods of their elimination are described.
Changes of the main indices of the protective atmosphere
in the course of a satisfactory annealing (without oxida-
tion of edges) are shown in Fig.5. It is stated that the
production of clean annealed sheets without traces of
oxidation permitted either to avoid or to reduce consider-
ably the subsequent pickling process (no data given).

Card 1/2

133-8-19/28

Experience in the application of a protective atmosphere.
(Cont.)

There are 5 figures.

ASSOCIATION: Novomoskovsk   Sheet Rolling Works. (Novomoskovskiy
Zhestekatal'nyy Zavod).

AVAILABLE: Library of Congress

Card 2/2

KULIKOVSKIY, V.

In boundaries of the main area. Grazhd. av. 17 no. 11:4-5
N '60.
(MIRA 13:12)
(Airplanes--Dispatching)

KULIKOVSKIY, V.K. [Kulykov'kyi, V.K.], kand.geol.-mineral.nauk

Way to underground treasures. Nauka i zhyttia 11 no.12:24-
26 D '61.
(Earth—Internal structure)   (MIRA 15:2)

BARTOSHEVSKIY, V.I. [deceased]; KULIKOVSKIY, V.K.; L'VOVA, I.V.; PLATONOV, A.N.

Structural and petrological characteristics and accessory
mineralization of some plutons in northern Kazakhstan.
Ghor.nauch.rab.Kiev.un. no.1:13-25 '63.

(MIRA 18:11)

KULIKOVSKIY, V.K.; PAVLOV, A.I.

Granitoids in Amvrosiyevka District of the Donets Basin.
Zap. Ukr. otd. Min. ob-va [no.1]:149-152 '62.

(MIRA 16:8)

1. Kiyevskiy gosudarstvennyy universitet, kafedra poleznykh iskopayemykh.

KULIKOVSKIY, Yu. E., Candidate Tech Sci (diss) -- "Problems of optimal detec-

tion and selection of objectives". Moscow, 1959. 39 pp (Min Higher Educ USSR,

Moscow Order of Lenin and Order of Labor Red Banner Higher Tech School im

Bauman), 120 copies (KL, No 24, 1959, 138)

LEWICKI, A.; KUBINSKA, H.; KULIKOWSKA, A.; LUKOMSKA, A.

Psychological studies on the mental state of patients treated with geriocaine. Neurol. neurochir. psychiat. pol. 12 no.1:63-66 '62.

1. Z Katedry Psychologii Ogolnej Uniwersytetu M. Kopernika w Toruniu Kierownik: prof. dr A. Lewicki i Sanatorium Geriatrycznego w Inowro-clawiu Dyrektor: dr B. Snarski.

(GERIATRICS)

KULIKOWSKA, T

L 19670-65   EWT(m)/EPF(c)/EPF(n)-2/EPR   Pr-4/Pa-4/Pu-4   3SD
   ACCESSION NR: AP4045667   P/0046/64/009/07-/0575/0585

AUTHOR: Adamski, L.; Arkuszewski, J. (Arkushevski, Ya.);
Bednarz, R. (Bednarzh, R.); Jozefowicz, E. T. (Yuzefovich, E. T.);
Jozefowicz, K. (Yuzefovich, K.); Kaczmarek, W. (Kachmarek, V.);   B
Kulikowska, T. (Kulikovska, T.); Malewski, S. (Malevski, S.);
Mika, J. (Mika, Ya.); Szechter, A. (Shekhter, A.); Weiss Z.
(Vayss, Z.); Bryhn-Ingebrigtsen, K. (Bry*n-Ingebrigt*sen, K.);
Smit, J. (Smit, I.); Stamm'ler, R. I. J. (Stamm'ler, R. I. I.);
Jockovic, M. (Iotskovich, M.); Pop-Jordanov, J. (Pop-Iordanov, I.);
Takac, S. (Takach, M.)

TITLE: Microscopic neutron flux distributions in unit cells of cri-
tical assemblies of the NPY Project

SOURCE: Nukleonika, v. 9, no. 7-8, 1964, 575-585

TOPIC TAGS: neutron distribution, reactor physics, intracell neu-
tron distribution, unit cell, critical reactor, NPY project

ABSTRACT: This article, which is one of the first official reports

Card 1/3

L 19670-65
ACCESSION NR: AP4045667

O

of the NPY Project, contains a preliminary study of intracell neu-
tron distributions in three critical assemblies operating in Norway,
Poland, and Yugoslavia. The NPY lattices that were studied and the
experimental techniques used in three zero-power-reactors (NORA, ANNA,
and RB) are discussed and experimental and theoretical results are
given in tabular form (refer to the Enclosures). The computational
methods used in Norway and applied to the NPY lattices involved the
use of two integral transport codes (available for use on the Ferranti
Mercury computer) developed by the Netherlands-Norwegian K-7 Project
at Kjeller-K-7 THERMOS and K-7 TRANSPO; cross-sections used in these
codes are given in tables. Two analytical methods were used in
Poland: the first, used for NORA and ANNA, made use of a one-group
Amouyal-Benoist approach applied to a multilayer system; the second
used the Laguerre polynomial expansion for distributions in the mo-
derator. Two computational methods were employed in Yugoslavia: a
standard one-velocity P_3 method with isotropic flux return at the
outer boundary and an improved analytical neutron thermalization me-
thod developed in Yugoslavia. The experimental and theoretical re-
sults obtained for NORA lattices show that the experimental values

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L 19670-65
ACCESSION NR: AP4045667

3

of the disadvantage factors lie within the range of theoretical va-
lues obtained by different methods. Orig. art. has: 3 figures and
6 tables.

ASSOCIATION: Institute of Atomic Energy, Kjeller, Norway; Institute
of Nuclear Research, Swierk, Poland; Boris Kidrich Institute of
Nuclear Sciences, Vincha, Yugoslavia

SUBMITTED: 00   ENCL: 04   SUB CODE: NP

NO REF SOV: 002   OTHER: 020

Card 3/7

~~SXII554~~   HU/0046/65/0:0/001/0001/0010

Kulikowska, Teresa (Kulikovska,

KULIKOWSKI, Aleksander (Szczecin, ul. Wincentego Pola 3)

Clinical studies on biological limits in designing of movable partial and full prostheses. Czasopismo stomat. 7 no.7:297-304 July 54.

1. Z Zakladu Protetyki Stomatologicznej Akademii Medycznej w Szczecinie. Kierownik: doc. dr A.Kulikowski.
      (DENTAL PROSTHESIS,
          indic. for partial & full prostheses)

COUNTRY   : POLAND
CATEGORY   : Chemical Technology. Chemical Products and Their
                 Applications. Chemical Processing of Solid Fossil*
ABS. JOUR.   : RZhKhim., No 19, 1959, No. 68056

AUTHOR   : Kadzinkiewicz, L; Kulikowski, G.
INSTITUTE   : --
TITLE   : Ways of Reducing the Consumption of Binding
                 Materials in the Briquetting of Semi-Coke

ORIG. PUB.   : Koks, smola, gaz, 1958, 3, No 5, 180-184

ABSTRACT   : Method of manufacturing briquettes (B) from
                 semi-coke developed by the Institute of Che-
                 mical Refining of Coal (PGR) is described.
                 The method permits reduction of the binder con-
                 sumption by means of determining optimum water
                 quantities, of lowering its surface tension (G)
                 and by employing water-tar emulsions. Quantities
                 of the injected water, affect to a considerable
                 degree the mechanical strength of B only when
                 the content of binding agent < 10%. Instead

                 *Fuels.
Card: 1/2

                        E - 71

CATEGORY   :

ABS. JOUR.   : RZhKhim., No 19, 1959, No.   69052

AUTHOR   :

ORIG. PUB.   :

ABSTRACT   : when appropriately adjusted to specific charac-
                  teristics of raw coal. For Part I, see Ref. Zhur.
                  Khimiya, 1959, No 11, 39850. --N.Tsikarev

Card: 2/2

KULIKOWSKI, Ginter

Possibilities for increasing the output of a fluidized bed coking installation. Koks 5 no.6:208-210 N-D '60.

1. Instytut Chemiczny Przerobki Wegla, Zabrze.

KULIKOWSKI J.

KULIKOWSKI, J. Guiding principles of a program of the development of sea
fishery. p. 328. Vol. 6, no. 12, Dec. 1956. TECHNIKA I GOSPODARKA
MORSKA. Gdansk Poland

KULIKOWSKI, J.

Induced anisotropy in Ni- and Mn-ferrites with iron excess and small addition of cobalt. Bul Ac Pol tech 12 no.8: 613-617 '64.

1. Research Laboratory of the Polfer Works, Warsaw. Presented by A.K. Smolinski.

Calculation method for axial short-circuit force of more adapted

6045   660.112.238.1.002.3:669.74:669.5

Bragiński A., Kulikowski J., Makołągwa S. Manganeso-Zinc Ferrites,
    „Ferryty manganowo-cynkowe". Przegląd Telekomunikacyjny. No.
8—9, 1958, pp. 231—239, 19 figs., 3 tabs.
    This paper indicates how advisable it is to use Mn-Zn ferrites
having a high permeability over the frequency range of up to 1 mega-
cycle. Present views are discussed concerning the crystalline structure
of the ferrites under discussion, the oxidation and reduction process,
and the effect of this process on the magnetic permeability. Information
is included concerning the effect of additions (ingredients) and the size
of crystals upon the magnetic properties, together with a comparison
of the properties of a few items now being produced in Poland and
abroad.

BRAGINSKI, Aleksander, mgr inz.; KULIKOWSKI, Jacek, mgr nauk techn., mgr
    inz.; MAKOLAGWA, Stefan, Inz.

Temperature coefficients of the permeability of Mn-Zn ferrites.
Prace Inst teletechn 3 no.1:3-40 '59.

1. Zaklad Materialow Magnetycznych, Biuro Badawcze, Instytut
Telei Radiotechniczny, Warszawa.

24.9300

S/196/62/000/018/004/017
E194/E155

AUTHORS: Ciaston, Władyslaw, Kulikowski, Jacek, and
Makolagwa, Stefan

TITLE: Ferrites of almost rectangular hysteresis loop and
low values of H_{sat}

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika,
no.18, 1962, 3, abstract 18 B 15. (Prace zakl. apar.
mat. PAN, B, no.8, 1961, 9 s., il,) (Polish).

TEXT;   Ferrites of the system Mn—Zn—Fe—O, having the general
formula $Mn_z Zn_y Fe_x O_{4 \pm \gamma}$, were investigated in the range $1.2 \leq x \leq 2.0$
and $0 \leq y \leq 0.4$.   Selected formulations and manufacturing
procedures ensured an almost rectangular hysteresis loop
($S_{max} \geq 0.9$) and low value of H_{sat} (~ 0.3 oersted approximately).
MgO was introduced into the formula at the expense of other
components. Cores of this material were used, for example, in
memory units of computers.

Card 1/1   [Abstractor's note: Complete translation.]

41079

S/058/62/000/008/091/134
A062/A101

34 2200,

AUTHORS: Ciastoń, W., Kulinowski, J., Makolagwa, S.

TITLE: Mn-Mg-Cd ferrites having rectangular hysteresis loops

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1962, 36, abstract 8E262
             ("Prace zakł. apar. mat..PAN", 1961, B, no. 9, 8s., il., Polish;
             summary in English)

TEXT: An investigation was made of the magnetic properties of the Mn-Mg-
Cd-Fe-O system which may be described by the general formula $Mn_2Cd_yFe_xO_{4+\gamma}$,
$1.4 \leq x \leq 2.2$; $0 \leq y \leq 0.9$. These ferrites are ranged in the class of magnetical-
ly soft materials. The addition therein of a certain quantity of MgO converts
them into materials with rectangular hysteresis loops. Likewise the coercive
force and the hysteresis loop shape of the $(MgO)_x(Mn_{0.6}Cd_{0.4}Fe_2O_4)_{1-0.5x}$ system,
wherein $0 \leq x \leq 0.4$, were investigated. It was found that for any values of x
in the investigated range of MgO concentrations the coercive force of these
materials is < 0.2 oersted. The rectangularity of the hysteresis loop S varies
in dependence of the quantity of Mg^{2+} ions in the solution; $S_{max} > 0.9$.

[Abstracter's note: Complete translation]
Card 1/1

41005

S/058/62/000/009/028/069
A006/A101

24.2200 ,

AUTHORS: Ciastoń, Władysław, Kulikovski, Jacek, Makolagwa; Stefan

TITLE: Mn-Mg-Zn ferrites with almost rectangular hysteresis loop and low coercive force H_c

PERIODICAL: Referativnyy zhurnal, Fizika, no. 9, 1962, 40, abstract 9E285 ("Prace zakł. apar. mat. PAN", 1961, v. B, no. 8, 9 s., ill., Polish)

TEXT: The authors investigated ferrites of the Mn-Zn-Fe-O system described by general formula $Mn_zZn_yFe_xO_{4+y}$, where $1.2 \leqslant x \leqslant 2.0$ and $0 \leqslant y \leqslant 0.4$. One of these ferrites has a relatively high rectangularity of the hysteresis loop and low coercive force H_c; into this ferrite some MgO was introduced with the aid of a special-developed method; the MgO amount replaced proportionally all the other components. Most detailed investigations were made with ferrites of system $(MgO)_x(Mn_{0.6}Zn_{0.4}Fe_2O_4)_{1-0.5x}$ at $0 \leqslant x \leqslant 0.4$. In materials of this system the coefficient of rectangularity of the hysteresis loop attains values of $S > 0.9$ and H_c of about 0.3 oersted. They can therefore be used as cores in computer storage systems.
[Abstracter's note: Complete translation]
Card 1/1

40559

$\mathcal{Y}4.2200$

S/196/62/000/017/001/005
E194/E155

AUTHOR: Kulikowski, Jacek

TITLE: Influence of small additions of cobalt on the
             properties of certain Ni-Zn ferrites

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika,
             no.17, 1962, 3, abstract 17 B 22. (Prace zakl. apar.
             mat. PAN, B, no.10, 1961, 9 s., ill.). (Polish:
             summary in English).

TEXT: Examples are given of the influence of additions of
CoO to the extent of 1.5% mole. to Ni-Zn ferrites of three
compositions: with deficiency of Fe_2O_3; with excess of Fe_2O_3;
and stoichiometric composition.   It is shown that the
introduction of Co into the ferrites with an Fe_2O_3 content of less
than 50% sometimes reduces the ratio of tan δ to the initial
permeability by a factor of 10 (at a frequency of 10 Mc/s).

[Abstractor's note: Complete translation.]

Card 1/1

KULIKOWSKI, Jacek

The influence of small admixtures of cobalt on the properties
of some Ni-Zn ferrites. Przegl elektroniki 3 no.2:80-84 F '62.

1. Wydzielone Biuro Rozwojowe "Polfer."

L3832

P/053/62/000/007/004/004
I010/I242

AUTHORS: Ciastoń, Władysław, Kulikowski, Jacek, and
             Makolągwa, Stefan

TITLE: Properties of some Polish ferrites with a square
             hysteresis loop

PERIODICAL: Przegląd Elektroniki, no.7, 1962, 419-430

TEXT: Polish ferrites developed by "Polfer" and by the Zakład
Aparatów Matematycznuch (Department of Mathematical Apparatus) are
comparable to those produced abroad. The static hysteresis loop
parameters in three types of Polish ferrites R-1, R-2, R-3 were
measured using 10x6x6 mm ring samples. The dynamic parameters of
the cores are listed. The static characteristics show a similar
characteristics show a similar $\underline{B}$ for all three types but their loop

Card 1/2

P/053/62/000/007/004/004
I010/I242

Properties of some Polish ferrites...

width and the H_m for the maximum squareness factor S are different.
No material with $H_c \approx 1.5 - 2.0$ oersteds was found. Dynamically,
the R-2 has a very low H_m opt at which $\overline{U_s}$ reaches its maximum. Its
drawback consists of a long τ (3 μsec). $\overline{U_z}$ The R-3 has $\tau = 1.5$ μsec
but its H_m opt is 3 times higher. The R-1 has intermediate proper-
ties so that it is useful both for memory and switching circuits.
The measurements proved that the R-2 may be used in automatics, tele-
technical systems, ferractor systems of digital machines etc. and
R-3 mainly in matrix coincidence memories. The shortest switching
time obtained with the R-3 cores is still too long for application
in fast computers. Faster elements are being developed. There are
12 figures and 1 table.

ASSOCIATION: Zakład Aparatów Matematycznych i WBR Zakłady Materiałów
Magnetycznych (Department of Mathematical Apparatus and
WBR Department of Magnetic Materials)

Card 2/2.

L1679
P/053/62/000/009/002/003
D271/D300

AUTHORS: Cianston, Władysław, Kulikowski, Jacek and Makolagwa, Stefan

TITLE: Mn-Mg-Zn square loop ferrites with low H_c

PERIODICAL: Przegląd elektroniki, no. 9, 1962, 545-549.

TEXT: The development of square loop ferrites with low coercive force is reported. In the temperature range of 1230° - 1360°C the samples were sintered in air, at higher temperatures - in oxygen in order to prevent reduction to Fe^{2+}. The samples were water quenched for chemical analysis, and cooled in vacuum or argon when intended for electrical tests. The Mn-Zn ferrite was taken as the basis of development, and squareness ratio and coercive force characteristics are shown for a range of compositions corresponding to the formula $Mn_y Zn_x Fe_{3-(x+y)} O_{4\pm\gamma}$; x was varied in experiments between 0 and 0.4, Fe content - between 35 and 50% mol, with corresponding variations in Zn content. On the basis of the above preliminary work, the composition of 50% Fe, 20% Zn and 30% Mn was chosen

Card 1/2

Mn-Mg-Zn square loop ferrites ...

P/035/62/000/009/002/003
D271/D308

as the starting point. MgO was added to it in varying proportions, at the proportional expense of remaining components. The influence of MgO is shown in characteristics of the squareness ratio and coercive force, in the range of $\delta = 0 - 0.6$ in the formula $(MgO) \delta (Mn_{0.6}Zn_{0.4}Fe_2O_4)_{1-0.5\delta}$. It was found that $\delta = 0.4$ gives optimal results when cores are sintered in oxygen at $1400°C$. Squareness ratios greater than 0.9 and coercive force lower than 0.3 oersted were obtained. Further improvement is expected by better control of primary materials and a less abrupt transition from oxygen atmosphere used in sintering to fully neutral atmosphere applied in cooling. The development of usable material was accelerated by the choice of Fe-Mn-Zn ferrite as the basis to which MgO was added. A. Braginski is thanked for supervision of the work. There are 5 figures.

ASSOCIATION: ZAM PAN (ZAM PAS) (W. Ciaston) WBR, 'Polfer' (J.
                 Kulikowski and S. Nakolagwa)

Card 2/2

P/053/63/000/003/002/003
E192/E382

AUTHOR: Kulikowski, Jacek.

TITLE: Magnetocrystalline anisotropy and magnetic ordering in ferrites having spinel structure and containing small quantities of cobalt

PERIODICAL: Przegląd elektroniki. no. 3. 1963. 149 - 157

TEXT: Spinel-structure ferrites, containing small quantities of cobalt ions, are considered. Basically, two types of ferrites are discussed: manganese materials $Mn_x Fe_{3-x} O_4 + \gamma$ and nickel ferrites $Ni_x Fe_{3-x} O_4 + \gamma$. These differ quite clearly in their crystalline structure and, secondly, they form the basis of the great majority of ferrite cores of high stability, which is due to the presence of an adequate state of magnetic ordering. The main cause of the appearance of a preferable direction of magnetization in ferrite crystals is the spin-orbital moment interaction. Due to exchange forces, the spin moments take parallel or antiparallel positions with respect to each other. In the majority of simple ferrites of spinel structure, distribution of the internal

Card 1/3

Magnetocrystalline ....

P/053/63/000/003/002/003
E192/E382

electric field is such that the direction of the preferable magnetization is the direction $[111]$. Apart from the cubic magnetocrystalline anisotropy, the ferrites can display a single-axis-induced anisotropy which is due to magnetic ordering of the material as a result of the action of an internal or external field. The existence of this anisotropy results in a so-called "isoperm" or rectangular hysteresis loop, depending on whether the direction of the measuring field is normal or parallel to the direction of the orienting field. Formulas describing these effects are given and some experimental data derived from various authors are shown. It is found that various ferrites show various degrees of magnetic ordering and thus of single-axis anisotropy. The highest value of the induced anisotropy constant K_u is observed in materials having more than 50 mole.% iron and containing cobalt ions. The induced anisotropy for a system $Co_x Fe_{3-x} O_4$ increases with x and has

a maximum at $x = 0.7$. Similarly, in a nickel ferrite K_u is strongly dependent on the number of cobalt ions. There are 4 figures.

Card 2/3

Magnetocrystalline P/053/63/000/003/002/003
                                 E192/E382

ASSOCIATION: Biuro Badawcze "Polfer" Warszawa
                 ("Polfer" Research Bureau, Warsaw)

SUBMITTED: November 23, 1962

Card 3/3

KULIKOWSKI, Jacek

Certain properties of excess nickel ferrites containing
small amounts of cobalt ions. Przegl elektroniki 4 no.
5/6: 264-266 My-Je '63.

1. Biuro Badawcze Polfer, Warszawa.

KULIKOWSKI, Jacek

POLAND

KULIKOWSKI, Jacek

"Polfer" Research Bureau, Warsaw

Wroclaw, Przegląd elektroniki, No 9, Sept 63, pp 509-519.

"Magnetocrystalline Anisotropy and Magnetic Ordering in Ferrites with Spinal Structure and Small Cobalt Additions".

ACCESSION NR: AP4015999

P/0053/63/000/10-/0658/0662

AUTHOR: Braginski, Aleksander; Kulikowski, Jacek

TITLE: The effect of transient forcing factors on the properties of perminvar ferrites

SOURCE: Przeglad elektroniki, no. 10-11, 1963, 658-662

TOPIC TAGS: perminvar, permeability, perminvar ferrite, perminvar permeability, perminvar ferrite permeability

ABSTRACT: A discussion of the permeability properties of perminvar ferrites in the interval from about 10 to about 100 gauss/oersted based on the example of type U-10, U-30 and U-80 materials. Consideration is given to the limitation of the practical application of perminvar ferrites caused by the action of forcing factors: temperature and the intensity of the magnetic field. Experimental data are discussed and the principal limits of applicability of the three types of perminvar ferrites which are discussed are given.

Card 1/2

KULIKOWSKI, J.

Some properties of Mn and Ni ferrites with the excess of
Fe_2O_3 and small additions of Co^{2+} ions. Bul Ac Pol tech
11 no.3:133-136 '63.

1. Research Laboratory Polfer, Warsaw. Presented by A.Smolinski.

ACCESSION NR: AP4016605   P/0053/64/000/001/0027/0038

AUTHOR: Braginski, Aleksander; Kulikowski, Jacek

TITLE: Properties of Perminvar nickel-zinc ferrites

SOURCE: Przeglad elektroniki, no. 1, 1964, 27-38

TOPIC TAGS: perminvar nickel-zinc ferrite, magnetocrystalline anisotropy, magnetic arrangement, zinc and cobalt content, permeability and loss coefficient, work frequency, Curie point

ABSTRACT: The paper concludes a cycle of articles on "Magnetocrystalline anisotropy and magnetic arrangements in ferrites having a spinel structure and containing small quantities of cobalt", published in Przeglad Elektroniki Nos. 3 and 9, 1963. It describes the magnetic properties of the group of Perminvar ferrites

$$(NiO)_{0.42-y}(ZnO)_y(Fe_2O_3)_{0.58}, \quad 0 \leqslant y \leqslant 0.20,$$
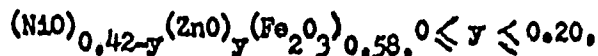
containing cobalt admixtures of 0 to 1.5% mol; and shows the dependence of

Card 1/3

ACCESSION NR: AP4016605

permeability upon the zinc and cobalt content, its temperature characteristics, the dependence of losses upon the frequency and the parameters with values char- acteristic of the Perminvars; the field of opening and the amplitude coefficients of permeability and loss. A careful review of those properties permits the general conclusions that: 1) industrially useful Perminvar nickel-zinc ferrites may be characterized by permeability from a few to 100-150 Gs/Oe; 2) the field of opening and the upper limit of work frequency grow when the cobalt content increases to 1.5% mol, and the amplitude coefficients of permeability and loss diminish accordingly; 3) an increase in the cobalt content shifts the temperature of the point of compensation of permanent anisotropy toward higher temperatures; 4) obtaining the maximum possible arrangement with a given chemical composition of the material depends on the proper choice of temperature and time of heating below the Curie point. Orig: art. has: 11 graphs, 1 table and 3 formulas.

Card 2/3

ACCESSION NR: AP4016605

ASSOCIATION: Biuro Badawoze "Polfer", Warsaw ("Pofer" Research Bureau)

SUBMITTED: 31Aug63

SUB CODE: GE

DATE ACQ: 05Mar64

NO REF SOV: 000

ENCL: 00

OTHER: 012

Card   3/3

KULIKOWSKI, Jacek

Square-loop ferrites obtained by magnetic annealing. Przegl
elektro 1 4 no.4:222-224 Ap '63

1. Biuro Badawcze Polfer, Instutyt Masyn Matematycznyoh,
Warszawa.

properties of induced square loop ferrite

Card 1/6

when the Gaussian probability distribution of the received signal is not known. Some

L 20849-66   EWT(1)/EWP(t)   IJP(c)   JD/HW

ACCESSION NR: AP5017136   PO/0053/65/000/006/0274/0277
                                         621: 318

AUTHOR: Kulikowski, Jacek

TITLE: Role of ferrous ions and vacancies in the magnetic ordering process in iron-rich ferrites containing a small quantity of cobalt

SOURCE: Przeglad elektroniki, no. 6, 1965, 247-277

TOPIC TAGS: nickel ferrite, manganese ferrite, cobalt containing ferrite, ferrous ion, cation vacancy, magnetic ordering

ABSTRACT: The paper describes an experimental investigation of the induced anisotropy of iron-rich nickel and manganese ferrites containing a small quantity of cobalt (1 mol. %). The purpose of the experiments was to determine the role of Fe^{2+} and vacancies when the main factor in magnetic ordering is Co^{2+} ions. The content of Fe_2O_3 in the starting mixture varied within 50-62 mol. %. Pressed pills 12 mm in diameter and 4 mm in thickness were fired at 1250C in an atmosphere containing controlled amounts of oxygen. After firing, the samples were ground to 8 mm in diameter and 2 mm in thickness (about 1 cm^3). The samples had different concentrations of both vacancies and Fe^{2+} ions or of vacancies

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ACCESSION NR: AP5017136

only. The methods for changing the concentration of vacancies and for magnetic annealing of the samples are described. Fig. 1 of the Enclosure shows $K_u = f(T_H)$ curves, where K_u is the induced anisotropy constant, T_H is the temperature of magnetic annealing, and $t_H = 30$ minutes is the duration of magnetic annealing, for two Ni-Fe samples containing 58 mol.% of Fe_2O_3 in the starting mixture, and which differ appreciably in the concentration of vacancies; for one of the samples, fired and cooled in argon, the concentration of vacancies $\beta = 0$, and for the other one, fired and cooled in oxygen, $\beta \approx 0.06$. The figure also shows values of K_u for the first sample after partial oxidation (about 400C for one hour in air). Fig. 2 shows an example of $K_u = f(T_H)$ curves for $t_H = 30$ minutes, obtained for samples of the same starting composition as those shown in Fig. 1 but containing manganese in place of nickel. Fig. 3 of the Enclosure shows the same curves, $t_H = 30$ minutes, for samples of nickel ferrite having an almost constant $(1 \pm 0.2$ mol.%) content of Fe^{2+} but differing in the concentration of vacancies. The results obtained are discussed and it is concluded that both the presence of divalent iron and cation vacancies facilitates the formation of a magnetic superstructure in the ferrite. When the content of Fe^{2+} ions is large, uniaxial anisotropy can be produced even when the concentration of vacancies is so small that it cannot be detected by chemical means; in order to obtain complete ordering, it is necessary to have a certain minimal quantity of cation vacancies which is, probably, different for different contents of cobalt. "The author thanks Dr. Eng. A. Braginski for valuable discussions." Orig. art. has: 3 figures.

Card 2/6

L 20849-66

ACCESSION NR: AP5017136 O

ASSOCIATION: Biuro Badawcze "Polfer", Warsaw ("Polfer" Research Bureau)

SUBMITTED: 00   ENCL: 03   SUB CODE: SS, EM

NO REF SOV: 000   OTHER: 002

Card   3/6

L 20849-66
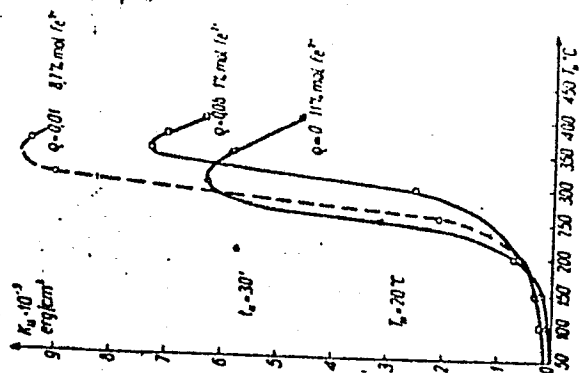
ACCESSION NR: AP5017136   ENCLOSURE: 01

Figure 1. $K_u = f(T_H)$, $t_H = 30$ minutes, for samples of the same starting composition (58 mol.% Fe_2O_3, 41 mol.% NiO and 1 mol.% CoO), but having different concentrations of Fe^{2+} and vacancies.

Card 4/6

L 20849-66

Figure 2. Same as for Fig. 1, but for a manganese ferrite.
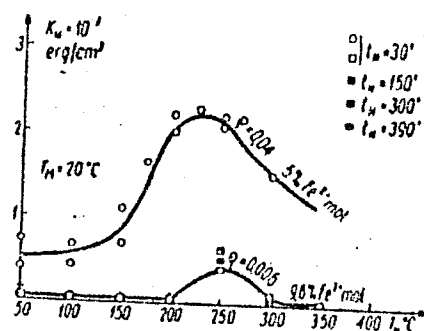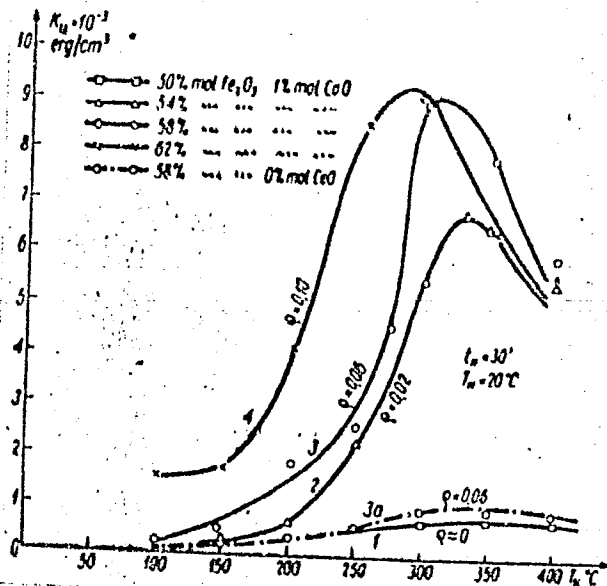
Card   5/6

L 20049-66

ENCLOSURE: 03

Figure 3. $K_u = f(T_{II})$, $t_{II} = 30$ minutes, for samples containing approximately the same quantity of Fe^{2+} (1 ± 0.2 %), but differing in the concentration of vacancies.

Card 6/6

KULIKOWSKI, J.

86661

P/031/60/005/003/003/004
A224/A026

9.6000 (3702, 1013, 1099)

AUTHOR: Kulikowski, Jan

TITLE: Voltage Sensitivity of Flux-Gate Magnetometers

PERIODICAL: Archiwum Automatyki i Telemechaniki, 1960, Vol. 5, No. 3, pp. 329-354

TEXT: The paper discusses the operational principles and the design of flux-gate magnetometers used for measuring direct magnetic fields of the order of $10^{-4} \div 10^{-3}$ A/m, where 1 A/m = $4\pi \cdot 10^{-3}$ Oe. The author divides the flux-gate magnetometers into two groups: one group with all even-harmonic output, and the other one with one even-harmonic output. He analyzes the group with one even-harmonic output and derives universal characteristic curves for all even harmonics, giving initial voltage sensitivity and deviations from linearity. The formulas derived in this work have been confirmed by testing several magnetometers using an RFA-1j wave analyzer built by the "Radiometer" firm. Practical formulas for calculating maximum initial voltage sensitivity are given. There are 20 figures, 1 table, and 4 references: 3 Soviet and 1 Polish.
ASSOCIATION: Polska Akademia Nauk, Instytut Podstawowych Problemów Techniki, Zakład Elektrotechniki (Polish Academy of Sciences, Institute of Basic Engineering Problems, Department of Electrical Engineering)

Card 1/1   SUBMITTED: December 14, 1959

9,6130

S/194/61/000/011/002/070
D256/D302

AUTHORS: Kulikowski, Jan and Nalecz, Maciej

TITLE: Basic properties of magnetic field modulated trans-
              ducers

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
              no. 11, 1961, 5, abstract 11 A32 (Rozpr. elektro-
              techn., 1960, 6, no. 4, 475-492 (in Polish; English
              summary))

TEXT: An analysis is presented of a transducer performance
in measurements of weak magnetic fields. A linear approximation of
the core magnetization curve was assumed and the sum of the even har-
monics in the measuring windings emf was employed as the output quan-
tity. Expressions were derived for calculating the mean value of
the transducer output voltage, sensitivity and the dependence of the
useful range of measurements upon the geometrical dimensions of the
core. A description is given of a transducer measuring system with

Card 1/2

Basic properties of magnetic field...   S/194/61/000/011/002/070
D256/D302

a mechanical phase-sensitive rectifier and a magneto-electrical instrument at the output. 4 references. $\underline{/}$ Abstracter's note: Complete translation $\underline{/}$

Card 2/2

Warsaw. Archiwum Automatyki i Telemechaniki, Vol 6, No 4, 1961.

1. "An Rectifier Bridge a Relay-Line," Pawel ZRELICH and Bogdan KACZKIEWICZ pp 371-388 (English summary).

2. "Analysis of Andy's," Mieczyslaw ZYBICKI pp 389-397 (English summary).

3. "Some Applications of Decoding Systems of Complement-ary Type with the Directional Elements," J. BICKIR-SKI pp 399-408 (English summary).

4. "Digital Signal Parameters in Telemechanics," Jan FRINGI pp 409-421 (English summary).

5. "On a Certain Method of Analysis of Relay-Contact Networks," Jan BICGOWSKI pp 423-434 (English summary).

6. "Some Characteristics of a Pulse Controlled DC Motor," John GOTHBERG pp 435-452 (English summary).

7. "An Analysis of Follow-up System Operating with DC Motor Controlled by Pulse Duration Modulation," Jakub GOTHBAUM pp 453-465 (English summary).

8. "On Properties of the Wyratron Inverse-Parallel Circuit with the Inductive Load," Jerzy LUCZNSKI pp 467-474 (English summary).

9. "Load Characteristics of Free Harmonic Magnetic Amplifiers," Jan WILIGORSKI and Tadeusz MALINOW-SKI pp 475-492 (English summary).

10. "A Study of Control Properties of Counter-Current Heat Exchanger with Gas Medium Variable Flow," Mieczyslaw FRYMLACKI pp 493-510 (English summary).

11. "Self-Compensating Ability of Radiated Steam Generator with External Water Circulation," Wladyslaw CICHANOWICZ pp 511-532 (English summary).

12. "Transient Temperature Distribution of the Parallel Flow Heat Exchanger," Wladyslaw CICHANOWICZ pp 533-546 (English summary).

— 1/2 —

32210
P/031/61/006/004/039/010
D271/D301

9,2538

AUTHOR: Kulikowski, Jan, and Malanowski, Kazimierz

TITLE: Load characteristics of even harmonic magnetic amplifiers

PERIODICAL: Archiwum automatyki i telemechaniki, v. 6, no. 4, 1961,
               473-492

TEXT: A phenomenological and analytical study is attempted of an even
harmonic magnetic amplifier, taking into account the reverse resistance of
the rectifier in the output circuit; voltage sensitivity and power gain are
discussed. Fig. 1 shows the device, composed of two cores with three wind-
ings each: excitation (Z_r), input or control (Z_s), and output (Z_w). An

approximation of the hysteresis loop is assumed as shown in Fig. 2; permea-
bility is assumed to be finite and constant. When the transducer is ex-
cited by a.c., an application of control current I_s causes the displace-
ment of magnetization characteristics of both cores. Five conditions occur

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Load characteristics of...   D271/D301

in each half-cycle: state (1) both cores saturated; (2) first core de-
saturated; (3) both cores de-saturated; (4) first core saturated; (5) second
core saturated. Output voltage exists only in states (2) and (4), de-
saturating pulses occur in state (2), saturating pulses in state (4). The
maximum value of de-saturating pulses is much smaller than that of satura-
ting pulses. Output voltage depends on the control current in state (1)
only; it is independent of events in preceding half-cycles, and this makes
the transducer a quick-acting element. Voltage gain is

$$K_U = \frac{z_s \, C_U}{R_s \, l_m} \frac{dU_w}{dH_s} \qquad (14)$$

where z_s is the number of turns of the control winding, R_s --amplifier
input resistance, l_m --mean path length, C_U --proportionality factor.

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Load characteristics of...

U_W —mean value of the saturating pulse, H_s —field strength due to the control current. The derivative in Eq. (14) is the voltage sensitivity of the amplifier. The phase discriminator in the output nearly stops the current due to de-saturating pulses, except for a very small reverse current. Maximum voltage sensitivity is

$$\mathcal{S}_{U\,max} \simeq \frac{dU_W}{dH_s} = 4\,f\,z_W\,S\mu \qquad (29)$$

and the sensitivity for small signals is

$$\mathcal{S}_U = \mathcal{S}_{U\,max}\left(1 - e^{-\frac{R_W}{2X_W}\,\omega t_3}\right) . \qquad (32)$$

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Load characteristics of...

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where z_w is the number of turns of the output winding, S —cross-section of the core, R_w —resistance of the output circuit in states (2) and (3), X_w —reactance of the output circuit, ωt_3 —the instant of saturation of the first core. Output current is

$$I_w = \frac{z_s}{z_w} \frac{\omega t_3}{\pi} I_s \quad, \qquad (40)$$

and this is valid when $R_w \ll 2X_w$. The equivalent impedance of the output circuit is defined as an output voltage with no load divided by output current with short-circuited terminals

$$X_{wz} = \frac{U_w}{I_w} = \frac{2X_w}{\omega t_3} \qquad (42)$$

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Load characteristics of...

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and in most cases

$$X_{WZ} \cong 2X_W .$$ (43)

By comparison with experiments, it was found that

$$\delta_U = \delta_{U\ max} \frac{1}{1 + \dfrac{2X_W}{R_W \omega t_3}}$$ (44)

agrees better with experimental data than the previously given Eq. (32); voltage sensitivity decreases as if equivalent impedance were purely resistive of the same value. Sensitivity and load characteristics, measured and computed by Eqs. (32) and (44) are shown. If a finite inductance of L_{Wd} and an infinite resistance R_W are assumed, voltage sensitivity

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Load characteristics of...

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D271/D301

becomes

$$\delta_U = \frac{\delta_{U\ max}}{1 + \frac{2 L_s}{L_{sd}}} = \delta_{U\ max} \frac{L_{sd}}{L_{sd} + 2 L_s} ; \qquad (50)$$

where L_s is the inductance of the input winding when the core is de-saturated. Maximum output power with a full-wave rectifier in the output circuit is

$$P_{w\ max} = \frac{U_w^2}{4 \left(2 r_w + r_p \right)} \qquad (52)$$

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Load characteristics of...

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where r_p is the rectifier forward resistance and the load is matched to $2r_w + r_p$. Power amplification is dependent on the choke L_{sd}; theoretical-ly, the optimum value of L_{sd} is between $2L_s$ and $4L_s$, but the experi-mental optimum is about $6L_s$. Reverse resistance of the rectifier discri-minator must be high ($R_{ws} \geq 2X_w$); otherwise, voltage sensitivity and power gain are decreased. A circuit is shown in which the measurements were executed. There are 11 figures and 8 references: 2 Soviet-bloc and 6 non-Soviet-bloc. The 4 most recent references to the English-language publi-cations read as follows: P. O. Atkinson, A. N. Hemingway, An Even-Harmonic Magnetic Amplifier and Some Applications to Measurement and Con-trol, Electronic Engineering, Vol. 26, 1954, No. 321, 482-485; E. H. Frost-Smith, The Theory and Design of Magnetic Amplifiers, London, 1958, §11, §12; E. H. Frost-Smith, The Study of Magnetic Inventer for Amplifica-tion of Low-Input-Power D. C. Signals, Proc. IEE, Vol. 100, Pt. II, 1953, 362-375; B. W. Jalbert, An Analysis of the Operation of the Magnetic

Card 7/9

Load characteristics of...

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P/031/61/006/004/009/010
D271/D301

Modulator, Trans. AIEE, Vol. 79, Pt. I, 1960, 268-272.

ASSOCIATION: Zakład elektrotechniki IPPT Polskiej akademii nauk (Elec-
                trotechnical Laboratory IPPT of the Polish Academy of
                Science), and Zakład miernictwa elektrycznego i automatyki
                instytutu elektrotechniki (Electrical Measurement and Auto-
                mation Laboratory of the Electro-technical Institute)

SUBMITTED: June 15, 1961

Card 8/9

KULIKOWSKI, JAN

SURNAME, Given Names

Country: POLAND

(1)

Academic Degrees: / not given/

Affiliation: / not given /

Source: Warsaw, Rozprawy Elektrotechniczne, Vol VII, No 2, 1961, pp 277-288

Data: " Equivalent Circuits of Flux-Gate Magnetometers with all-even Harmonic Output"

Authors:
KULIKOWSKI, Jan

NALECZ, Maciej

3 5

GPO 981643

KULIKOWSKI, Jan

Even harmonic transductors. Rozpr elektrotech 8 no.3/4:407-502
'62.

1. Zaklad Elektrotechniki, Polska Akademika Nauk, Warszawa.

KULIKOWSKI, Jorzy, dr inz.

Radial short-circuit forces in transformers with asymmetric cylindric wirings. Przegl elektrotechn 41 no.3:86-88 Mr '65.

KULIKOWSKI, Jerzy, dr inz.

Influence of the dimensions of the windows on the axial short-
circuit forces in transformers. Przegl elektrotechn 40 no.10:434-439
O '64.

1. Department of Electric Machines and Transformers, Technical
University, Lodz.

/6 4/00
6.9200

S/194/62/000/002/071/096
D271/D301

AUTHOR: Kulikowski, J.

TITLE: A method for approximating the correlation function of passive interference

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 2, 1962, abstract 2-7-12i (Prace Przemysł. inst. telekomun., 1960, v. 10, no. 31, 29-32)

TEXT: A method is proposed for approximating the correlation coefficient $\rho(\tau)$ of a stationary random process by means of the function $\tilde{\rho}(\tau)$. This function must satisfy the usual conditions:

$$\tilde{\rho}(0) = 1, \quad \tilde{\rho}(\infty) = 0, \quad \tilde{\rho}(-\tau) = \tilde{\rho}(\tau), \quad \tilde{\rho}(\tau) \leq \tilde{\rho}(0) \text{ when } \tau \neq 0, \quad \tilde{\rho}'(0) = 0$$

The last condition is the consequence of the requirement that the random process which is to be approximated must be capable of differentiation. Besides, the moments of the function $\tilde{\rho}(\tau)$ must meet

Card (1/3)

A method for approximating ...

the following conditions:

$$m_\nu = \int_{-\infty}^{\infty} \tau^\nu \bar{\rho}(\tau)\,d\tau = \begin{cases} 2\int_0^\infty \tau^\nu \bar{\rho}(\tau)\,d\tau & \text{when } \nu \text{ is even} \\ \\ 0 & \text{when } \nu \text{ is odd} \end{cases}$$

Taking into account the above conditions, double-sided Laplace transform of the function $\bar{\rho}(\tau)$ is first found and moments m_ν are calculated. Then, through an inverse transformation, an approximate expression is obtained for $\bar{\rho}(\tau)$. As an example, the approximation is considered in detail of the correlation coefficient of the type $\rho(x) = \exp(-\tau^2/2\tau_0)$, by means of the function

Card 2/3

A method for approximating ...

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D271/D301

$$\hat{\rho}(\tau) = 1,637 \ \exp\left(-1,098 \ \frac{|\tau|}{r_0}\right)\sin\left(0,8087 \ \frac{|\tau|}{\tau_0} + \text{arctg } 0,7776\right)$$

The graphs which are shown testify to the high accuracy of the approximation. 8 references. /¯Abstracter's note: Complete translation._/

Card 3/3

S/194/62/000/002/072/096
D271/D301

6.9400

AUTHOR: Kulikowski, J.

TITLE: Description of the statistical properties of the phase
            by means of periodically-normal functions

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika,
            no. 2, 1962, abstract 2-7-12ts (Prace Przemysł. inst.
            telekomun., 1960, v. 10, no. 31, 33-37)

TEXT: Moment functions usually serve as numerical characteristics
of single-peak probability densities which do not greatly differ
from normal probability. For the probability densities which are
periodical functions of their arguments, it is recommended using
coefficients of Fourier expansion of the probability density, as
numerical characteristics. It is discussed whether such represen-
tation is possible for the probability density of the random phase
of an oscillator and of the random phase of narrow-band noise. So-
called periodically-normal functions are used which are associated
with deriving functions of the probability density. 6 references.
/ Abstracter's note: Complete translation._/   Card 1/1

S/194/62/000/007/096/160
D271/D308

AUTHOR: Kulikowski, Juliusz

TITLE: Some problems in the calculation of inverse covariance
            matrix of passive radar interference

TEXT: Some practical methods are considered for the determination
of coefficients of the matrix which defines the quadratic Hermite
form appearing in the index of the multi-dimensional normal proba-
bility distribution. These coefficients directly define an amplitu-
de transfer function of a linear filter inserted into a coherent
receiver in front of the detector. The calculation method is based
on the use of properties of 'bilateral Z-transformation'. The au-
thor considers cases of multi-channel reception and reception with
varying repetition frequency of sampling pulses of a radar station.
Conclusions are illustrated by a number of practical examples. [Ab-
Card 1/2

Some problems in the calculation ...   S/194/62/000/007/096/160
                                          D271/D308

stracter's note: Complete translation.]

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30571
P/019/61/010/003/002/008
D206/D305

$C, 9700$

AUTHOR: Kulikowski, J.

TITLE: A generalization of the "ideal observer" criterion

PERIODICAL: Archiwum elektrotechniki, v. 10, no. 3, 1961, 723-727

TEXT: The new criterion for optimum reception of threshold sig-
nals, as discussed, may be of use in analyzing conditions of sig-
nal and interference relation with static parameters, having un-
known characteristics. In the statistics theory of the reception of
radio-location signals, Siegert's criterion of the "ideal observer"
is used which is based on the demand for the minimization of the
error of detection:

$$P = P_{f.a.} + P_{ba.} = P_0 \int_{\Omega_1} w(y|0)dy + P_1 \int_{\Omega_0} w(y|1)dy = \min_{(\Omega_0/\Omega_1)} \qquad (1)$$

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A generalization of the ...

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where $P_{f.a.}$ = propability of "false alarm"; $P_{b.a.}$ = probability of "lack of alarm"; p_0 = probability of an a priori "lack of signal"; $p_1 = 1 - p_0$ = probability of an a priori "presence of signal"; Ω_0 and Ω_1 - regions of decision of "lack of signal" and "presence of signal" respectively and complementary in space; $w(y/0)$ and $w(y/1)$ - conditional functions of density of probability of receiving signals "y", under conditions of "lack of signal" and "presence of signal" respectively. The practical application of the criterion which is dependent on minimization of the expression (1) has many drawbacks, so far not resolved satisfactorily. Therefore, one more method is given which leads to a simple and physically interpretable solution of the problem of optimum reception. Assuming that the density functions $w(y/0;\mathcal{E})$, $w(y/1;\mathcal{E})$ depend on a parameter $\varepsilon \mathcal{E}$ E, whose exact a priori value is unknown and cannot be determined statistically, i.e. distribution of probability of the parameter is unknown. It is assumed that approximate values of the unknown parameter can be described as: $D_0 = (\mathcal{E}_0 - \Delta, \mathcal{E}_0 + \Delta_2)$. It is also

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P/019/61/010/003/002/008
A generalization of the ...   D206/D305

assumed that functions $w(y/0;\mathcal{E})$ and $w(y/1;\mathcal{E})$ contain partial diffe-
rentials with respect to the components of vector $\mathcal{E}$ for point $\mathcal{E}_0$
in medium D_0. Take as the exact value of parameter $\mathcal{E} = \mathcal{E}_0$ and mi-
nimizing quantity P'; the method of optimum rece-ption can then be
determined

$$P' = p_0 \int_{\Omega_1} w(y \mid 0);\mathcal{E}_0)dy + p_1 \int_{\Omega_1} w(y/1;\mathcal{E}_0)dy \qquad (5)$$

The linear increment of the probability of detection error

$$\Delta P_{max} = |\mathcal{E}-\mathcal{E}_0| \left\{ p_0 \int_{\Omega_1} \left|\frac{d}{d\mathcal{E}} w(y \mid 0;\mathcal{E})\right| dy + p_1 \int_{\Omega_0} \left|\frac{d}{d\mathcal{E}} w(y \mid 1;\mathcal{E})\right| dy \right\}_{\mathcal{E}=\mathcal{E}_0} \quad (8)$$

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A generalization of the ...

$$Q_2 = P' + \Delta P_{max} \qquad (9)$$

$$Q_2 = P_1 \int_{\Omega_0} \left[w(y|1;\varepsilon) + \lambda \left| \frac{d}{d\varepsilon} w(y|1;\varepsilon) \right| \right]_{\varepsilon = \varepsilon_0} dy \qquad (10)$$

where λ is fixed and positive in value, is represented as $\lambda = (\Delta_1, \Delta_2)$. The optimum reception condition can be materialized in the meaning of the criterion of the "ideal observer" when the expression for Q_2 is minimum. There are 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: J.L. Hodges, E.L. Pehman: The use of previous

Card 4/5

30571

P/o19/61/010/003/002/008
D206/D305

A generalization of the ...

experience in reaching statistical decisions, Ann. Math. Stat. vol. 23, no. 3, (1952); Lawson, Uhlenbeck: Threshold signals. MIT lab. ser. vol. 19.

SUBMITTED: July 8, 1960

Card 5/5

AUTHOR: Kulikowski, J.

TITLE: On the optimum reception method under phase interference conditions

PERIODICAL: Referativnyy zhurnal, Fizika, no. 7, 1962, 15, abstract 7Zh96
             ("Prace Przemysł. inst. telekomun.", 1961, 11, no. 34, 1 - 7, Polish;
             Russian, English and French summaries)

TEXT: The author discusses the optimum reception method of radar signals
by coherent systems in the case when the phase of the useful component of the re-
ceived signal is not exactly known. Methods of realizing such systems, operating
under phase interference conditions, are briefly described.

[Abstracter's note: Complete translation]

Card 1/1

P/031/62/007/003/001/013
D201/D308

AUTHOR: Kulikowski, Juliusz

TITLE: Problems of statistical optimization of extremal
                 control systems

PERIODICAL: Archiwum Automatyki i Telemechaniki, v. 7, no. 3-4,
                 419-433 - 1962

TEXT: The author considers the problems from the point of
view of making the decision operations independent of random fluctu-
ations of the input and analyzes the means of describing the statis-
tical properties of the object to be controlled. In the most gener-
al case, these properties are described by a stochastic operator
which exists if a general relationship between the input function
and the probability density functions of the observed and of the
non-observed outputs are given. An analysis is also given of opti-
mizing the decisions and of some problems of optimization of deci-
sion sets. A new design of decision circuit is suggested for the
case when the dynamics of the system can be simplified and a high

Card 1/2

Problems of statistical ...

P/031/62/007/003/001/013
D201/D308

degree of statistical accuracy is not required. The author concludes that one the main difficulties with systems having complicated dynamic properties is the determination of statistical properties of the non-linear stochastic operator describing the object. This problem is not solved in the literature. From the practical point of view some of these difficulties could be avoided by applying the Monte Carlo method for the determination of optimum controlling functions. There are 7 figures.

ASSOCIATION: Politechnika Warszawska Katedra Techniki Fal Utrakrotkich (Warsaw Polytechnic Department of UHF Engineering)

Card 2/2

KULIKOWSKI, J.

Statistical properties of signals in monopulse radar systems of
the amplitude type. Przem inst telokom prace 13 no.41:1-7 '63.

1. KatedraTechniki Fal Ultrakrotkich, Politechnika, Warszawa.

KULIKOWSKI, J. L.

Propertiy analysis of a self-optimizing receiving system
for detecting harmonic signals with unknown phase. Przem
inst telekom prace 14 no. 44:11-16 '64.

1. Department of Radiolocation, Technical University,
    Warsaw.

P/0019/64/013/001/0015/0024

ACCESSION NR: AP4039449

AUTHOR: Kulikowski, J. L.

TITLE: A nonparametric device for the detection of binary signals

SOURCE: Archiwum elektrotechniki, v. 13, no. 1, 1964, 15-24

TOPIC TAGS: Pearson Type III function, probability function, probability theory, mathematical statistics, signal detection, nonparametric detection device, noise detection, statistical communication theory, Chi-square test, nonparametric statistics, radar, radar signal

ABSTRACT: The operating principles of a radar signal device, based on statistical checking of nonparametric hypotheses, is examined. The problem deals with the binary detection of signals of an unknown shape or unknown statistical properties on a background of clutter whose statistical properties are also unknown. The case of Markovian type signals with completely unknown probability density functions is analyzed. A system operating on the basis of Pearson's Chi-square test is described. The non-parametric decision-making systems differ from the majority of the generally known systems in statistical sampling theory. Their intrinsic advantage is univer-

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sality based on the ability to employ nonparametric devices in a very wide range
with respect to the statistical properties of signals and clutter. The universa-
lity is offset by some deterioration of the reception quality in some individual
cases. An examination of some fragmentary data in the pertinent literature indi-
cates that this deterioration is not large enough to prevent the use of nonpara-
metric systems where actually the reception of a prior information about a signal
and clutter could be impossible. "In conclusion, I wish to thank the reviewer of
this article. Professor Doctor Jerzy Seidler, for a number of valuable hints."
Original article has: 2 figures and 19 equations.

ASSOCIATION: Katedra Radiolokacji Politechniki Warszawskiej (Department of Radar,
Warsaw Polytechnic Institute)

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