GAL'PERIN, I. I.

USSR/Engineering Oct 1947
Regulators
Indicators

"Structural Synthesis of Regulatory and Indicator Systems," I. I. Gal'perin, Candidate in Technical Sciences, Steam Turbine Laboratory, 7 pp

"Iz VTI" No 10

This is the conclusion of an article appearing in a previous issue of the journal on qualitative and structural research on regulatory and indicator systems. A method is considered for quantitative research in the field of stability and aperiodicity of a chain of complicated structures, presenting a generalization of the method of non-dimensional coordinates of Stodola-Tolle. LC 29736

USSR/Mathematics - Structural Formula May/Jun 51

"Demonstrations of the Theorems Concerning Input Substitution (Displacement) and Concerning Structural Formula," I. I. Gal'perin, All-Union Thermal Eng Inst imeni F. E. Dzerzhinskiy

"Avtomat i Telemekh" Vol XII, No 3, pp 236-250

Problem of structural stability of dynamic systems reduces by generalized principle of D'Alembert to the problem of stiffness of corresponding D'Alembert static forms of these systems, just as the problem of motion of these systems reduces to the problem of equil of these static forms. Author expounds the

21T36

GAL'PERIN, I.I.

concept of structural stability in 2 plans: geometrical and analytical. The editor of this periodical invites comments on this article, which are to be published in future issues. Submitted 7 Mar 49 and again 10 Jun 50.

21T36

GAL'PERIN, I. I.

USSR/Engineering - Automatic Control, Jul 52
Regulation

"Testing the Hydrodynamic Regulation Developed at the VTI," I.I. Gal'perin, Cand Tech Sci, I.P. Serezhkina, Engr, V. A. Panfilov, Lab of Steam Turbines

"Iz V-S Teplotekh Inst" No 7, pp 17-21

Describes procedure of dynamic, with load removal, and static tests of two 44,000-kw turbines. Regulating system incorporated for 1st time membrane less servomotors. Dynamic test was to det deviation of rpm at complete load removal and to record transient processes when total or partial loads are removed. Analyzes in detail static characteristics of regulation.

233T29

GAL'PERIN, I. I.

AID - P-84

Subject : USSR/Engineering

Card : 1/1

Author : Gal'perin, I. I., Kand. Eng. Sci., Moscow

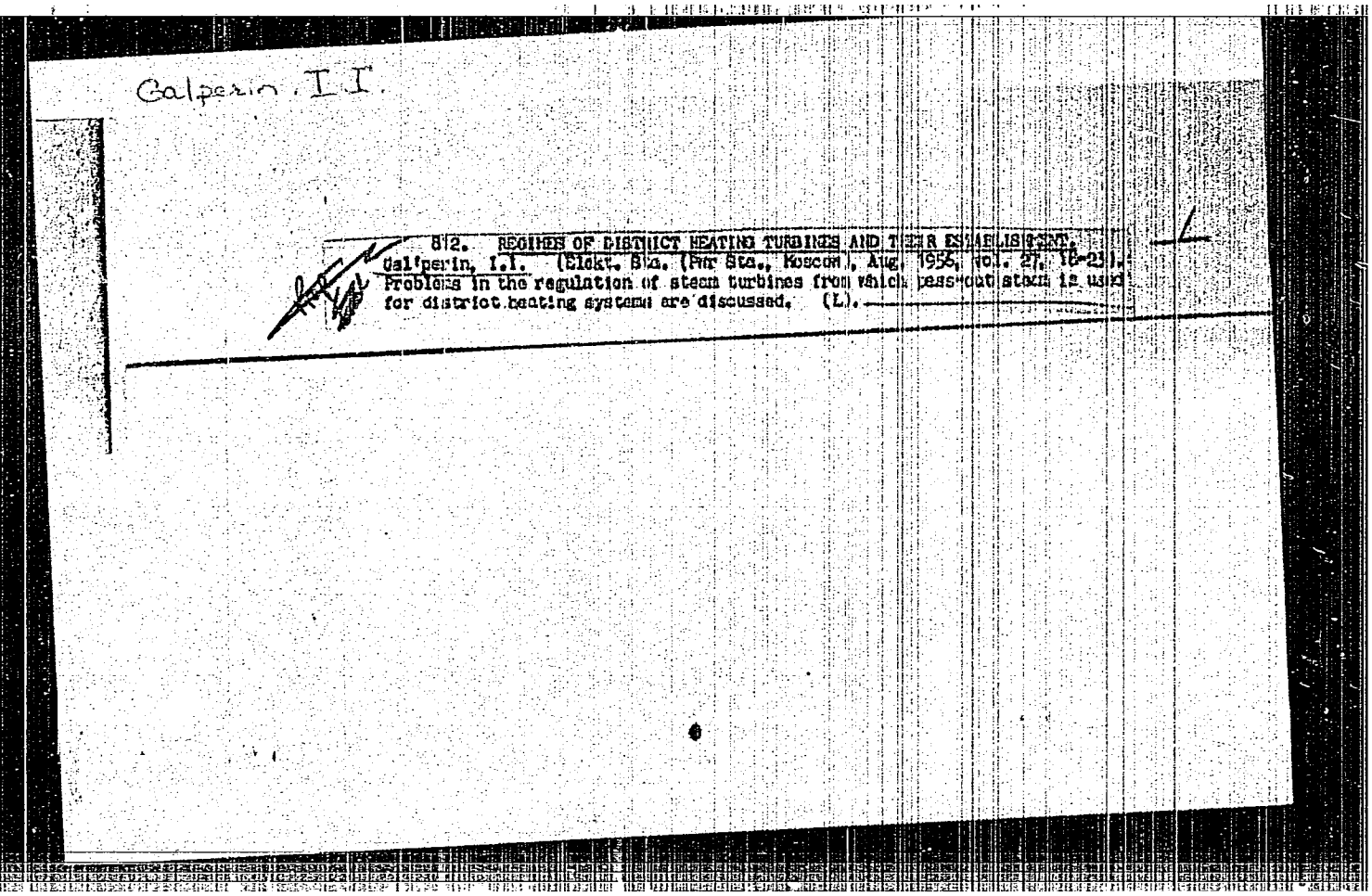
Title : Theoretical Bases for Automatic Regulation of Thermal Processes, book by S. G. Gerasimov, Gosenergoizdat, 1949. Review

Periodical : Izv. V.T.I., v. 21, #3, 30-32, Mr 1952

Abstract : The author presents very critical comments on the substance of the book, and particularly on the "specific" theoretical bases for automatic regulation of thermal processes, which are only a part of the "general" theory of regulation.

Institution : None

Submitted : January 15, 1952



Galperin, I.I.

812. REGIMES OF DISTRICT HEATING TURBINES AND THEIR ESTABLISHMENT.
Galperin, I.I. (Elekt. Sta., (Per Sta., Moscow), Aug. 1955, Vol. 27, 16-21).
Problems in the regulation of steam turbines from which pass-out steam is used for district heating systems are discussed. (L).

GAL'PERIN

BERENSHTEYN, M.G., inzhener; GAL'PERIN, I.I., kandidat tekhnicheskikh nauk; IOFFE, L.S., inzhener; KOMISSAROV, L.A., inzhener; RABINOVICH, A.V., inzhener; SHCHEGLYAYEV, A.V.

Control system for a new series of average-capacity turbines. Teploenergetika 4 no.1:3-7 Ja '57. (MLRA 10:3)

1. Chlen-korrespondent AN SSSR (for Shcheglyayev). 2. Vsesoyuznyy teplotekhnicheskiy institut im. Dzerzhinskogo; Ural'skiy turbomotornyy zavod; Bryanskiy parovozostroitel'nyy zavod.
(Turbines) (Automatic control)

252

AUTHOR: Gal'perin, I. I. (Cand. Tech. Sc.) (All-Union Thermo-technical Institute).

TITLE: New hydraulic governing circuits for heat supply turbines. (Novye gidravlicheskiye skhemy regulirovaniya teplo-fikatsionnykh turbin).

PERIODICAL: "Teploenergetika" (Thermal Power), Vol.4, No.4, April, 1957, pp. 10 - 16 (U.S.S.R.)

ABSTRACT: Interconnected governing, by which is meant that the combined action of each of the governors and regulators (speed and pass-out temperature and pressure) should act on all the servo-motors, is not yet sufficiently simple and reliable. All the systems so far used have defects and some have become unusable soon after installation. So far, the best method (Soviet as well as non-Soviet) is that of the Leningrad Metal Works which is used for turbines types VT-25 and VPT-25 (25 MW turbines with one and two pass-outs respectively). However, this system also has its defects and it is, therefore, of interest to review all the latest Soviet and non-Soviet systems of inter-connected governing. Independent (autonomous) governing requires a system that is not only interconnected but linear. It is for this reason that mechanical lever systems were first used but their obvious defects enforced a transition to the simpler but non-linear

New hydraulic governing circuits for heat supply turbines. (Cont.)

hydraulic system. The first hydraulic systems were built on a common principle. The governors regulating throttling sections of the system alter in an appropriate manner the pressure at points at which servo-motors are connected into the system. The spring loaded servo-motors serve to measure this pressure. Schemes of this kind were introduced in Brown Boveri (BBC) turbines but were most extensively developed in the systems of the Leningrad Metal Works, the Neva and Kirov Works, which first used double throttling hydraulic, feed-back and a number of other novelties. Schemes are classified according to whether they have series, parallel or mixed connection of the controlling throttle sections. Parallel schemes are very convenient but have the defect that the control energy is divided and only a small part of the total pressure drop is available to each of the governors. In this respect the mixed circuit, in which the speed governor has available the total pressure-drop, presents advantages. Further investigations showed that all circuits of this class were necessarily non-linear because the command from various governors depends on the positions of all the oil flow regulators in the impulse lines. A further defect of circuits of this class is their dependence on the properties of the

New hydraulic governing circuits for heat supply turbines. (Cont.)

hydraulic medium. The strictly linear system of the Neva Works with differential summating pistons which is described below is a special case. This very simple but uncompensated system was not widely used in the U.S.S.R., apparently because of technological difficulties in making the multi-stage differential pistons. It has been used by the BBC in its latest systems. Compensating systems are linear, interconnected governing systems which are independent of the properties of the hydraulic medium. They are based on the use of springless servo-motors and have become widely used during the last ten years. The diagram of such a system developed by The All-Union Thermotechnical Institute is given. This system has hydrodynamic speed governing and three membrane-ribbon governors of speed and pressure in the pass-outs. The main advantage of the system is that the flow of oil in the impulse lines is constant and the valve arrangements are simple. Tests and operating results have confirmed the advantages of straight compensated systems. The systems were practically independent of the initial pressure and the temperature of the medium. Methods by which various desirable characteristics of governing may be achieved are discussed. These include, for example, methods of making the speed

New hydraulic governing circuits for heat supply turbines. (Cont.)

governor predominate. The various compensating circuits that can be used for governing condensing turbines are classified. They can also be used for interconnected governing. The use of diagonal feed-back instead of simple disconnection increases the speed of action. In addition, it makes it possible for the characteristics of the main hydraulic servo-motors to proximate to the relay characteristic of a constant speed servo-motor, so further increasing the speed of the system. This speed of action is of particular importance in heat supply turbines in which especial difficulties are caused by complete loss of load. The method of obtaining an approximate relay characteristic is described. Compensated hydraulic governing circuits have solved in the simplest way a whole number of problems such as: independence of the properties of the hydraulic medium; the production of linear-hydraulic systems of interconnected governing with purely parallel connection of the controlling sections; the use of linear hydraulic diagonal feed-back; and the approximation to a relay characteristic of servo-motor. Finally, this new system is compared with systems used outside the U.S.S.R. and particularly that of BBC. The BBC system is explained.

New hydraulic governing circuits for heat supply turbines. (Cont.)

It is a strictly linear system but, unlike the system of the All-Union Thermotechnical Institute described above, it is not fully compensated despite the use of springless servo-motors. In it the position of the main servo-motors depends on the initial pressure in the oil system. The system is simple in principle but rather complicated in practical construction of the servo-motors. Practical competition between the Soviet and BBC systems will reveal the most rational hydraulic system of interconnected governing. 8 figures, 9 literature references (7 Russian).

GAL'PERIN, I. I.

"On the Reflex Nature of Controlling Machines," Voprosy filosofii /Problems of Philosophy/, 1957, No. 4, Pages 158 - 168.

ARAKELOV, A.S.; BORISOV, V.A.; GAL'PERIN, I.I.; GUREVICH, A.G.; DOVZHUK, G.T.; PARSHIN, R.N.; SOKOLOVSKIY, S.M.; SELIKHOV, V.L., SHIFRIN, D.L.; ETKIN, M.V.; GET'YE, V.A., red.toma; YELIN, V.I., red.toma; SOLDATOV, K.N., red.toma; SVYATITSKAYA, K.P., vedushchiy red.; TROFIMOV, A.V., tekhn.red.

[Equipment used in the petroleum industry] Neftianoe oborudovanie; v shesti tomakh. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry. Vol.1. [Compressors and pumps] Kompressory i nasosy. 1958. 234 p. (MIRA 12:5)
(Petroleum industry--Equipment and supplies)
(Pumping machinery) (Compressors)

GAL'PERIN, I.I.,kand.tekhn.nauk; GORELOV,I.N.,inzh.; PANFILOV, V.A.,inzh.; PRIKAZCHIKOV, G.F.,inzh.

Speed and acceleration control of a turbine unit. Elek.sta.29 no.3:13-19 Mr '58. (MIRA 11:5)
(Governors (Machinery)) (Turbines)

GAL'PERIN, I.I., kand. tekhn. nauk

Regulating units consisting of through-type boilers and turbines. (MIRA 11:11)
Elek.sta. 29 no.9:12-19 S '58.
(Steam turbines) (Boilers)

PHASE I BOOK EXPLOITATION SOV/3371

Usovershenstvovaniye konstruktsiy i ekspluatatsii turbinnykh ustanovok; [illegible] stat'y (Improvement in the Construction and Operation of Turbine [illegible] Collection of Articles) Moscow, Gosenergoizdat, 1959. 3[illegible] p. [illegible] inserted. 1,550 copies printed.

Eds. (Title page): Ya. M. Rubinshteyn, Professor, and A. V. [illegible], Corresponding Member, Academy of Sciences USSR; Ed. ([illegible]): [illegible] Sinel'nikova; Tech. Ed.: P. M. Arnov.

PURPOSE: The book is intended for engineers specializing in the [illegible] ation of turbine equipment.

COVERAGE: This collection of 22 articles deals with aspects of [illegible] ations, particularly, variations in the heat [illegible] and computation of optimum parameters for gas [illegible] indices and a number of methods for [illegible] parameters for specific cycles are [illegible]. No [illegible] References follow several of the articles.

Lagun, V.P. Reconstruction of the [illegible] at the [illegible] and [illegible] Power Stations
The author defines the main [illegible] Schubert turbines (Two at the [illegible] Power Station). Details of reconstruction to [illegible] creased power demands are presented.

Shchegoliti'nikov, M.I. Analysis of Performance Gains Due to [illegible], Based on the "Heat-Value Method" 36
The author defines the "heat-value" coefficient. If [illegible] (external) heat (q) is added to [illegible] generative process, the change in the total heat [illegible] (used in obtaining new steam and in the intermediate [illegible]), designated as ΔQ , is described as ΔQ = [illegible]. The symbol ξ represents the heat-value coefficient. [illegible] curves and specific values of the ξ coefficient are [illegible] with computation results for optimum [illegible] pressures and [illegible] temperatures.

Rubinshteyn, Ya.M., and L.V. Yadigarov. Two Arrangements of [illegible] Pumping 6[illegible]
The authors discuss the optimum arrangement of the feedwater heating cycle (to achieve maximum effectiveness) and analyze the effects of feedwater heaters and feed pumps on performance [illegible]. Two systems of feedwater pumps are compared. One system [illegible] high-pressure preheaters exposed to the full pressure of the feedwater, while the other employs preheaters between two sections of the split pump, that is, the initial (or intermediate) sector of the pump and the main sector. In the second case the heaters are under water pressure only in the "intermediate" sector. The authors conclude that both systems are equally efficient.

Murzanov, B.F. Certain Problems Related to the Control-System Stability of Turbine Generators Operating in parallel. 73
The problem of constant speed regulation and the stability of the speed-governing system for turbogenerators operating in parallel is analyzed.

Gal'perin, I.I. Methods of Turbine Governing in Compensated Control Systems 99
Governing for "compensated systems", i.e., systems provided with linkage between speed-control mechanisms and pressure-control mechanisms is analyzed. Types of interconnections are graphically represented, and respective control parameters and practices of regulation and correlation are outlined.

Weller, V.N. System of Single-Pump Hydrodynamic Control 112
The article deals with current systems of hydraulic speed-responsive governing with one pump and a pressure relay. Four different arrangements of such servomotors are described.

Kirakosyants, G.A. Experimental Investigation of the Effects of Friction in the Governor on the Flow-Regulation Process 127
Analysis of the work done by the governor against internal friction is presented, and the effects of friction on the flow-control valve are evaluated.

Weller, V.N., D.M. Levin, and Yu.V. Rzheznikov. Control Valve of the VTI Turbine 141
Functions and performance of the new type of admission valve designed to regulate the rate of flow in the main governor of the VTI-type steam turbine are discussed.

Murzanov, B.F. Influence of the Pump-Rotor Design on Pump-Performance Characteristics in a Hydrodynamic Governing System 146
An experimental model of a centrifugal pump in hydraulic governors is described. The geometry of the pump rotor and the aspects of tightening are analyzed with respect to the effect of

PHASE I BOOK EXPLOITATION SOV/5004

Gal'perin, Iosif Iosifovich

Sintez sistem avtomatiki (Synthesis of Automation Systems) Moscow, Gosenergoizdat, 1960. 160 p. Errata slip inserted. 8,000 copies printed.

Sponsoring Agency: Vsesoyuznyy ordena trudovogo krasnogo znameni teplotekhnicheskiy nauchno-issledovatel'skiy institut imeni F. E. Dzerzhinskogo.

Ed.: M. S. Kaminskiy; Tech. Ed.: N. I. Borunov.

PURPOSE: This book is intended for students interested in automation.

COVERAGE: The book presents the theory of structural stability and a structural synthesis of dynamic automation systems. Stable, especially isodromic, systems are systematically synthesized and classified. Related problems in general construction of automatic systems are discussed. On the basis of a fundamental theoretical

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exposition, in which mechanical methods are applied and established notions critically surveyed, a generalized automation concept is evolved. According to the author, this concept is a theory of dynamic systems of arbitrary structures. The author thanks B. M. Yakub, A. V. Shcheglyayev, Ya. M. Rubinshteyn, M. S. Kaminskiy, V. B. Rubin, N. P. Pavlonskaya, L. P. Serezhkina, and V. A. Panfilov for their assistance. There are 59 references: 48 Soviet, 2 English, 8 German, and 1 French.

TABLE OF CONTENTS:

GAL'PERIN, Iosif Iosifovich; RUBIN, V.B., red.

[Automatic control unilateral mechanics] Avtomatika kak odnostoronniaia mekhanika. Moskva, Izd-vo "Energiia," 1964. 262 p. (MIRA 17:7)

GAL'PERIN, I.I., kand.tekhn.nauk

Dynamics of automatic control. Teploenergetika 11 no. 1:72-79 Ja '64. (MIRA 17:5)

1. Vsesoyuznyy teplotekhnicheskiy institut.

GAL'PERIN, I.I., kand. tekhn. nauk

Development of turbine automation. Energomashinostroenie 11 no.7: 44-46 Jl '65. (MIRA 18:7)

ACC NR: AM5000931 Monograph UR/

Gal'perin, Iosif Iosifovich

Automatic control as unilateral mechanics (Avtomatika kak odnostoronnyaya mekhanika) Moscow, Izd-vo "Energiya", 64. 0262 p. illus., biblio. 1,000 copies printed. (At head of title: Vsesoyuznyy ordena trudovogo krasnogo znameni teploteknicheskiy nauchno-issledovatel'skiy institut im. F. E. Dzershinskogo)

TOPIC TAGAS: automatic control theory, automatic control system, dynamic system, structure stability, cybernetics, logic element, isomorphism

PURPOSE AND COVERAGE: This book consists of a systematic reorganization of the subject based on general concepts indicated in the title. It mainly presents problems of logical structure of automatic control, its axioms, a study of dynamic structures, an analysis, synthesis and classification of dynamic systems, a study of their structural and metric characteristics and relations. In this reorganization a community of structural methods is found in fields of structural analysis most heterogeneous in content. An algorithm of structural synthesis showing homologous series of zero systems (saturated compounds chemistry, single-action compounds of the theory of mechanisms, stable statically determined compounds of building mechanics, and stable compounds of automatic control) appears as general for all the heterogeneous systems. An explanation of this community (structural isomorphism) is given as the second problem of this book. The third problem covered is the concrete synthesis of control and servosystems with the given structural and metric properties. This book is recommended for a wide group of persons interested in general problems of cybernetics.

UDC: 62-50

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ACC NR: AM5000931

TABLE OF CONTENTS (abridged):

SUB CODE: 12,06 SUBMIDATE: 23Apr64/ ORIG REF: 080/ OTH REF: 027

Card 2/2

KHAVKIN, K.A.; SOKOLIK, A.F.; GAL'PERIN, I.M.

A machine computes the volume of earthwork. Avt.dor. 26 no.4:21-22 Ap '63. (MIRA 16:4)
(Earthwork--Tables, calculations, etc.)
(Electronic computers)

GAL'PERIN, I.M.; KARLITSKIY, Sh.M.

Continuous grinding of pulp for the manufacture of condenser paper. Bum.i der.prom. no.1:21-24 Ja-Mr '62. (MIRA 15:5)

1. Malinskaya bumazhnaya fabrika.
(Paper industry--Equipment and supplies)

GAL'PERIN, I.M.; KOMAROVSKIY, L.Ye.

Ways for improving the quality of the base of carbon paper. Bum. i der. prom. no.2:21-23 Ap-Je '63. (MIRA 17:2)

1. Malinskaya bumazhnaya fabrika.

TYURYAYEV, I.Ya.; FEL'DBLYUM, V.Sh.; GRIGOR'YEVICH, B.A.; GAL'PERIN, I.M.

Synthesis of isoprene from propylene. Khim.prom. no.9:647-650 S '63. (MIRA 16:12)

GAL'PERIN, I.M., assist.

Conformal representation of spiral areas. Trudy Kiev. avt.-dor. inst. no.3:177-187 '57. (MIRA 11:5)

(Surfaces, Representation of)

HALPERIN, I.

3

Fryer, K. D.; and Halperin, I. The von Neumann coordinatization theorem for complemented modular lattices. Acta Sci. Math. Szeged 17 (1956), 203–249.

Für den in vorstehendem Referat zitierten Satz von v. Neumann in der Formulierung der Aussagen (1) und (2') geben Verff. eine vereinfachte Darstellung, die für jede komplementären modularen Verband L mit homogener Basis der Ordnung $n \geqq 3$ gilt; für den Fall $n=3$ werden [illegible] den normierten Rahmen von L drei Zusatzbedingungen gestellt, die im Falle $n \geqq 4$ von selbst erfüllt sind. Sie bedeuten in einer projektiven Ebene einen Schnittpunktsatz über axiale Vierecke, der mit dem Satz von Desargues äquivalent ist. Damit ist die vollständige verbandstheoretische Verallgemeinerung zu dem Satz über die Algebraisierbarkeit einer projektiven Geometrie der Dimension $\geqq 2$ geleistet. — Die Arbeit gibt eine ausführliche Behandlung aller benötigten Begriffe und Sätze und ist unabhängig von der einschlägigen Literatur verständlich.

R. Moufang (Frankfurt a. M.)

JW
1/1

AUTHOR: Gal'perin, I.M. SOV/140-58-3-7/34

TITLE: On the Theory of Schlicht Functions With Bounded Torsion (K teorii odnolistnykh funktsiy s ogranichennym vrashcheniyem)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1958. Nr 3, pp 50-61 (USSR)

ABSTRACT: The author considers the functions

(1) $w = f(z) = z + a_2 z^2 + \ldots + a_n z^n + \ldots$

regular in $|z| < 1$ which satisfy $\mathrm{Re}\, f'(z) > 0$ in $|z| < 1$ (schlicht functions with torsion, see Zmorovich [Ref 3-8]). The class of these functions is denoted with $\hat{S}$.

Theorem : The domain of the w-plane onto which the unit circle is mapped by $f(z) \in \hat{S}$ always contains the circle with the center in the origin and with the radius $2 \ln 2 - 1$.

Theorem : If (1) belongs to $\hat{S}$, then

$S_n(z) = z + a_2 z^2 + \ldots + a_n z^n$ $(n \geq 2)$ is also a schlicht function of bounded torsion in the circle $|z| < \frac{1}{2}$, whereby the

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constant $\frac{1}{2}$ cannot be improved. The author proposes some generalizations of the class $\hat{S}$, e.g.:
Theorem: If the function (1) regular in $|z|<1$ satisfies the inequality $|\arg f'(z)| < \frac{\pi}{2n}$ $(n=1,2,\ldots)$, then it holds 1.) $f(z)$ is schlicht in $|z|<1$ 2.) It admits the representation

$$f(z) = \int_0^z \left[\frac{1}{2\pi} \int_0^{2\pi} \frac{1+\zeta e^{-it}}{1-\zeta e^{-it}} \, d\mu(t) \right]^{1/n} d\zeta$$

where $\mu(t)$ is a function nondecreasing on $(0,2\pi)$, which is normed by the condition

$$\int_0^{2\pi} d\mu(t) = 2\pi$$

3.) On $|z| = r < 1$ hold the estimations

On the Theory of Schlicht Functions With Bounded Torsion

SOV, 140-58-3-7/34

$$\left(\frac{1-r}{1+r}\right)^{1/n} \leqslant |f'(z)| \leqslant \left(\frac{1+r}{1-r}\right)^{1/n}$$

$$\int_0^r \left(\frac{1-x}{1+x}\right)^{1/n} dx \leqslant |f(z)| \leqslant \int_0^r \left(\frac{1+x}{1-x}\right)^{1/n} dx$$

$$|\arg f'(z)| \leqslant \frac{2}{n} \operatorname{arctg} r$$

These estimations are precise and are attained by the function

$$f_0(z) = \int_0^z \left(\frac{1+\zeta e^{-it_0}}{1-\zeta e^{-it_0}}\right)^{1/n} d\zeta$$

There are 17 references, 9 of which are Soviet, 2 German, 2 American, 2 Japanese, 1 Italian, and 1 French.

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On the Theory of Schlicht Functions With Bounded Torsion

SOV/140-58-3-7/34

ASSOCIATION: Kivesvskiy avtomobil'no-dorozhnyy institut (Kiyev Highway Institute)

SUBMITTED: January 6, 1958

Card 4/4

HALPERIN, I.

The continuous geometry of Janos Neumann. p. 225.

MATEMATIKAI LAPOK. (Bolyai Janos Matematikai Tarsulat) Budapest, Hungary, Vol. 9, No. 3/4, 1958.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 11, November 1959. Uncl.

AUTHOR: Gal'perin, I.M. SOV/42-13-5-4/15

TITLE: On Finite Segments of the Taylor Series of two Special Classes of Schlicht Functions (O konechnykh otrezkakh ryada Teylora dvukh spetsial'nykh klassov odnolistnykh funktsiy)

PERIODICAL: Uspekhi matematicheskikh nauk, 1958, Vol 13, Nr 5, pp 171-178 (USSR)

ABSTRACT: Let $\mu(t)$ be a function non-decreasing on $[0,2\pi]$. The author considers the functions [Ref 1,2]

(1) $\varphi(z)=z+a_2z^2+a_3z^3+\ldots$, $a_k=\frac{1}{k\pi}\int_0^{2\pi} e^{-i(k-1)t}d\mu(t)$,

$\operatorname{Re}\varphi'(z)>0$, $|z|<1$

and the functions [Ref 4]

(2) $\Phi(z)=z+b_2z^2+b_3z^3+\ldots$, $b_2=\frac{3}{4\pi}\int_0^{2\pi} e^{-it}d\mu(t)$,

$$b_3=\frac{1}{3}\left[\frac{1}{\pi}\int_0^{2\pi} e^{-2it}d\mu(t)+\left(\frac{1}{\pi}\int_0^{2\pi} e^{-it}d\mu(t)\right)^2\right].$$

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On Finite Segments of the Taylor Series of two Special Classes of Schlicht Functions SOV/42-13-5-4/15

Theorem: If $\varphi(z)$ is a schlicht function with bounded rotation in $|z|<1$ [Ref 1,2] (then $\varphi(z)$ is given by (1)), then for every $n \geq 2$ and $|z| < \frac{1}{2}$ the polynomial $s_n(z) = z + a_2 z^2 + \ldots + a_n z^n$ is a schlicht function with bounded rotation, too.
The second theorem gives a corresponding assertion for the segments of the functions $\phi(z)$ in $|z| < \frac{1}{3}$. Neither the constant $\frac{1}{2}$ in the first theorem nor the constant $\frac{1}{3}$ in the second theorem can be improved.
There are 9 references, 8 of which are Soviet, and 1 German.

SUBMITTED: February 15, 1957

Card 2/2

GAL'PERIN I. M.

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SOV/21-59-10-2/26

AUTHOR: Hal'perin, I.M.

TITLE: On the Theory of p-Foliate Spiral Functions

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, Nr 10, pp 1051-1053 (USSR)

ABSTRACT: The author studies the regular p-foliate spiral functions in a unit circle with m-fold symmetry. In theorem Nr 1, he states that if the function

$$f(z) = z^p + a_{p+1}z^{p+1} + \ldots + a_{p+n}z^{p+n} + \ldots$$

is regular in a unit circle and satisfies there the condition

$$\mathrm{Re}\left(e^{-i\theta}\frac{zf'(z)}{f(z)}\right) > 0, \quad -\frac{\pi}{2} < \theta < \frac{\pi}{2},$$

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On the Theory of p-Foliate Spiral Functions

then f(z) is regular p-foliate in $|z|<1$ and may be given in the following way:

$$f(z) = z^{\rho} \exp\left[-\frac{\rho e^{i\theta}}{\pi}\int_0^{2\pi} \ln\left(1-ze^{it}\right) d\mu(t)\right].$$

The argumentation of this theorem is based on the application of the known theoreme of Ris-Herhlots [Ref 1] for regular functions with a positive real part in $|z|<1$ to one of the theorems of S. Ozaki [Ref 2]. The structural formula of the class of functions under consideration is derived, and another very general theorem is obtained in respect to the qualitative estimations of certain functionals. In consequence of these theorems, estimations for the

Card 2/3 modulus of the function, the argument, etc. are also

On the Theory of p-Foliate Spiral Functions

obtained. There are 6 references, 5 of which are Soviet and 1 English.

ASSOCIATION: Kyyivs'kyy avtomobil'no-dorozhnyy instytut (Kiyev Automobile and Highway Institute)

PRESENTED: By B.V. Hnyedenko, Member of the AS UkrSSR

SUBMITTED: February 3, 1959.

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16(1)

AUTHOR: Gal'perin, I.M. SOV/41-11-2-11/17

TITLE: On arg f'(z) of a p-Sheeted Star-Shaped Function

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1959, Vol 11, Nr 2, pp 207-210 (USSR)

ABSTRACT: In the class of functions p-sheeted in $|z|<1$

$$f(z) = z^p \exp\left[-\frac{p}{\pi}\int_0^{2\pi} \ln(1-ze^{-it})\,d\mu(t)\right]$$

$0<t<2\pi$, $p\geq 1$, $z = re^{i\varphi}$, where $\mu(t)$ is a function non-decreasing on $(0,2\pi)$, $\int_0^{2\pi} d\mu(t) = 2\pi$, with the development

$$f(z) = z^p + a_{p+1}z^{p+1} + \ldots + a_{p+n}z^{p+n} + \ldots$$

the author seeks that function f(z) for which arg f'(z) reaches an extremum on $|z| = r<1$.
With the aid of the variation method of Zmorovich [Ref 2] and some considerations of Stroganov [Ref 3] it is stated that the sought function is

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On arg f'(z) of a p-Sheeted Star-Shaped Function SOV/41-11-2-11/17

$$f(z) = \frac{z^p}{(1-ze^{-it_1})^{2p}}$$

and that it can be obtained by taking as $\mu(t)$ a step curve with a point of discontinuity.
The author mentions L.Ye.Dunduchenko.
There are 3 Soviet references.

SUBMITTED: February 4, 1958

Card 2/2

GAL'PERIN, I.M.

S/021/60/000/011/001/009
D204/D302

AUTHOR: Hal'perin, I.M.

TITLE: On the theory of single-leaved functions with limited rotation

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 11, 1960, 1465 - 1468

TEXT: The article contains new results corresponding to a class $\hat{S}$ of single-leaved functions with limited rotation in the circle $|z| < 1$, supplementing the results published in I.M. Gal'perin (Ref. 1: Izv. MVO, Matematika, 3, 50/1958). A function f(z) defined by

$$f(z) = z + a_2 z^2 + \ldots + a_n z^n + \ldots, \qquad (1)$$

and regular in the unit circle is said to be single-leaved with limited rotation if in this circle Re $f'(z) > 0$. The structural formula for the class of functions is

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$$f(z) = -\frac{1}{2\pi}\int_0^{2\pi} [z \cdot 2e^{it} \ln(1 - ze^{-it})]\, d\mu(t), \qquad (2)$$

where $\mu(t)$ is a function which does not vanish in the interval $(0, 2\pi)$, for which

$$\int_0^2 d\ (t) = 2\pi.$$

Theorem 1: For a given integral function $\Phi(w)$ which satisfies the condition $\Phi'(w) \neq 0$, the maximum and minimum of the functions

$$\mathrm{Re}\{\Phi[f(z)]\}_{|z|=r}, \quad |\Phi[f(z)]|_{|z|=r}, \qquad (3)$$

$$\mathrm{Re}\{\Phi[f'(z)]\}_{|z|=r}, \quad |\Phi[f'(z)]|_{|z|=r}, \qquad (4)$$

with arbitrary fixed r $(0 < r < 1)$ in the class $\hat{S}$ are given by

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$$f_0(z) = -z - 2e^{i\gamma} \ln(1 - ze^{-i\gamma}) = z + \sum_{n=2}^{\infty} \frac{2}{n} z^n e^{-i(n-1)\gamma}. \qquad (5)$$

The proof of this theorem is based on the variation method of V.A. Zmorovych (Ref. 2: Ukr. matemat. zhurn., 4, 276/1952). Theorem 2: If $f(z) \in \hat{S}$ in $|z| < 1$, then for arbitrary $n \geq 9$, the partial sum

$$S_n(z) = z + a_2 z^2 + \ldots + a_n z^n \quad (n = 2, 3, \ldots)$$

of (1) is a function of class S in the circle $|z| < 1 - 2\frac{\log n}{n}$.

The theorem is proved by writing

$$f(z) = S_n(z) + \rho_n(z) \in \hat{S}, \ |z| < 1, \qquad (6)$$

$$\rho_n(z) = \sum_{\nu=n+1}^{\infty} a_\nu z^\nu.$$

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On the theory of single-leaved ...

showing that $S_n'(z)$ is regular in the circle $/z/ \leq r_n < 1$, and, from Theorem 1 and the 2nd part of (6) showing that if

$$\frac{r_n^n (1 + r_n)}{(1 - r_n)^2} < \frac{1}{2} \qquad (9)$$

then $$\mathrm{Re}\ S_n'(z) > 0, \quad /z/ \leq r_n. \qquad (7)$$

Writing $r_n = 1 - \frac{\alpha}{n}$ $(0 < \alpha \leq n)$, (9) is equivalent to

$$\frac{2e^2 e^{-\alpha}}{\alpha^2} < \frac{1}{2}$$

and this equality holds for $n \geq 9$ as required. In the following investigation, some questions discussed by N.G. Chebotarev (Ref. 4: Sbornik pamyati akademika D.A. Grave (Academician D.A. Grave Memo-

Card 4/5

rial Collection)Gostekhizdat, 1940, p. 268) are touched on. Theorem 3: If the polynomial $S_n(z)$ is an $\hat{S}_\sigma$- polynomial it is necessary and sufficient that it is an $\hat{S}$-polynomial. The proof is a consequence of a well-known theorem of Carathéodory. Theorem 4: Each $\hat{S}_\sigma$-polynomial is a partial sum of an infinite series which defines in the circle $/z/<1$ some function of the class $\hat{S}$. Proof: positive numbers ε_1, ε_2 ... tending to zero are considered. $\sigma_\nu(z)$ denote polynomials which lie in the class $\hat{S}$ in the circle $/z/<1-\varepsilon_\nu$ ($\nu = 1, 2, \ldots$). It is shown that each $\sigma_\nu(z)$ is dominated by a series which is regular in the region $/z/<1-\varepsilon_\nu$, $\mathrm{Re}\,\sigma'_\nu(z)$ is shown to be strictly positive in the circle $/z/<1-\varepsilon_\nu$, and hence in the limit $\mathrm{Re}\,\sigma'(z)$ is strictly positive in the circle $/z/<1$, the possibility $\mathrm{Re}\,\sigma'(z) = 0$ being shown to be impossible. There are 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc

ASSOCIATION: Kyyivs'kyy avtodorozhnyy instytut (Kiyev Institute of Highway Engineering)

SUBMITTED: October 19, 1959

Card 5/5

GAL'PERIN, M.I., doktor tekhn.nauk

Mechanical methods for breaking frozen ground. Stroi. i dor. mashinostr. 5 no.12:11-18 D '60. (MIRA 13:11)
(Frozen ground)

GAL'PERIN, I.M.

One class of one-sheeted functions. Trudy LIVT no.26:281-283 '59. (MIRA 14:9)
(Functions)

GAL'PERIN, I.M.; BOL'SHAKOV, Yu.K.; KRYUKOV, G.S.

Snow remover for switches. Sbor.rats.predl.vnedr.v proizv. no.5:63-64 '60. (MIRA 14:8)

1. Cherepovetskiy metallurgicheskiy zavod.
(Railroads--Snow protection and removal)

GAL'PERIN, I.M.

Theory of special classes of functions univalent in the unit circle with a k-fold symmetry of rotation. Ukr.mat.zhur. 13 no.4:88:92 '61. (MIRA 15:7)

(Functional analysis)

GAL'PERIN, I.M. [Hal'perin, I.M.]

On the theory of p-valent functions. Dop. AN URSR no.12:1555-1560 '62. (MIRA 16:2)

1. Kiyevskiy avtodorozhnyy institut. Predstavleno akademikom AN UkrSSR Yu.A. Mitropol'skim [Mytropol's'kyi, IU.O.].
(Functions)

CAL'PERIN, I.I.

Some estimations for functions bounded in a unit circle. Usp. mat. nauk 20 no.1:197-202 Ja-F '65. (MIRA 18:4)

KORSHAKOVA, A.S.; SKAVINSKIY, Yu.V.; KUZNETSOVA, A.A.; POTEYENKO, O.M.; ARKHIPOVA, V.A.; GAL'PERIN, I.P.; TENDENTNIK, Yu.Ya.; KIYASHKO, M.A.

Studying the immunogenic factor in per os immunization against dysentery. Zhur. mikrobiol. epid. i immun 28 no.2:131-132 F '57 (MLRA 10:4)

1. Iz Instituta epidemiologii i mikrobiologii imeni N.F. Gamalei AMN SSSR.

(DYSENTERY--PREVENTIVE INOCULATION)

Country : USSR
Category : Microbiology - Physiology and Biochemistry

Abs. Jour : Ref Zhur - Biol., No.19, 1958, 85969

Author : Gal'perin, I.P.
Institut. :
Title : Experimental Findings on the Obtaining of Active Strains of Alkaligenes faecalis (author's summary)

Orig Pub. : Zh. Mikrobiol., Epidemiol., i Immunobiol. , 1958, No.2, 139-140
Abstract : no abstract

Card: 1/1

GAL'PERIN, I. P., Candidate Med Sci (diss) -- "The biological properties of the fecal alkali-forming agent". Ashkhabad, 1959. 18 pp (Ashkhabad Inst of Epidemiology and Hygiene of the Min Health Tadzhik SSR), 200 copies (KL, No 24, 1959, 149)

SALMIN, L.V.; VASIL'EVA, A.V., GAL'PERIN, I.P.; NEMTSEVA, V.K.; LEBEDEVA, A.I.

Study of the effectiveness of typhoid fever vaccines epidemiologically. Zdrav.Turk. 6 no.4:8-12 Jl-Ag '62. (MIRA 15:8)

1. Iz Ashkhabadskogo instituta epidemiologii i gigiyeny (dir.-dotsent Ye.S. Popova) i Moskovskogo instituta vaktsin i syvorotok imeni I.I.Mechnikova (dir. A.N.Meshalova).
(TYPHOID FEVER--PREVENTIVE INOCULATION)

KHEYFETS, L.B.; SALMIN, L.V.; LEYTMAN, M.Z.; KUZ'MINOVA, M.L.; VASIL'YEVA, A.V.; GAL'PERIN, I.P.; SLAVINA, A.M.; ZHDANOVA, L.D. PLETNEVA, O.G.; VARSANOVA, Ye.Ya.; GINZBURG, G.M.; GLYAZER, N.G.; MEL'NIK, Ye.Yu.

Comparative evaluation of typhoid fever vaccine prepared by various methods, materials from an epidemiological experiment in 1961. Zhur. mikrobiol., epid. i imm. 41 no. 2:70-76 F '64. (MIRA 17:9)

1. Moskovskiy institut vaktsin-i syvorotok imeni Mechnikova, Tashkentskiy institut vaktsin i syvorotok i Ashkhabadskiy institut epidemiologii, mikrobiologii i gigiyeny.

KHEIFETS, L.B.; SAIMIN, L.V.; LEYTMAN, M.Z.; KUZ'MINOVA, M.L.; VASIL'YEVA, A.V.; SLAVINA, A.M.; LEVINA, L.A.; Prinimali uchastiye: PAVLOVA, Ye.A.; ANTONOVA, A.A.; PLETNEVA, O.G., ABDUSAMATOV, M.A.; GAL'PERIN, I.P.; NEMTSOVA, V.K.; ADUYEVA, N.I.

Comparative evaluation of the reactogenicity and effectiveness of vaccines intended for the prevention of typhoid fever and paratyphoid fever B; basic materials of the epidemiological experiment in 1962. Zhur. mikrobiol., epid. i immun. 42 no.7:58-64 Jl '65. (MIRA 18:11)

1. Moskovskiy institut vaktsin i syvorotok imeni Mechnikova (for Pavlova, Antonova). 2. Tashkentskiy institut vaktsin i syvorotok (for Pletneva, Abdusamatov). 3. Ashkhabadskiy institut epidemiologii, mikrobiologii i gigiyeny (for Gal'perin, Nemtsova). 4. Gor'kovskiy institut epidemiologii, mikrobiologii i gigiyeny (for Aduyeva).

KROKHA, P.M.; SADKOVSKIY, V.A.; CHENDYLOVA, V.A.; GAL'PERIN, I.S., inzh.

Eliminate the shortcomings in planning. Put' i put. khoz. 9 no.11:32 '65. (MIRA 18:11)

1. Nachal'nik putevoy mashinnoy stantsii No.124, stantsiya Chernovtsy, L'vovskoy dorogi (for Krokha). 2. Glavnyy inzh. putevoy mashinnoy stantsii, stantsiya Chernovtsy, L'vovskoy dorogi (for Sadkovskiy). 3. Glavnyy bukhgalter, stantsiya Chernovtsy, L'vovskoy dorogi (for Chendylova). 4. Stantsiya Chernovtsy, L'vovskoy dorogi (for Gal'perin).

PANASENKO, Valeriy Dmitriyevich; SOTSKOV, B.S., prof., retsenzent; GAL'PERIN, I.TS., doktor tekhn. nauk, nauchnyy red.; ODINOV, I.A., red.; GARNUKHINA, L.A., tekhn. red.

[Elements of automatic control and computer engineering; a manual on standard components and networks]Elementy avtomaticheskikh ustroistv i vychislitel'noi tekhniki; spravochnik po tipovym elementam i skhemam. Izd.2., dop. i perer. Moskva, Oborongiz, 1962. 300 p. (MIRA 15:10)

1. Chlen-korrespondent Akademii nauk SSSR (for Sotskov).
(Automatic control) (Electronic calculating machines)

GAL'PERIN, I.Yu.

BELYY, Ye.M., zaveduyushchiy stantsiyey; GAL'PERIN, I.Yu.

Liquidation of tropical malaria in the Zaporozh'ye Province. Med.paraz.i paraz.bol. no.3:221-223 My-Je '53. (MLRA 6:8)

1. Zaporozhskaya oblastnaya protivomalyariynaya stantsiya.
(Zaporozh'ye Province--Malarial fever)

GAL'PERIN, L., arkhitektor

Using the "Lift-slab" method in erecting houses. Zhil. stroi. no.7: 17-19 '59. (MIRA 12:10)
(Apartment houses) (Precast concrete construction)

SOV/110-58-9-4/20

AUTHOR: Gal'perin, L.B. (Engineer)

TITLE: The use of Light-current Relays on Automatic Coal-mining Equipment (Primeneniye slabotochnykh rele dlya avtomatizatsii proizvodstvennykh protsessov na ugol'nykh shakhtakh)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Nr 9, pp 14-17 (USSR)

ABSTRACT: In recent years light-current relays have been widely used for automatic control of coal-mining plant because they have small size and weight and can be made inherently safe. Standard relays used in this way include multi-contact standard relay type MKU-48, high-sensitivity polarised relays types RP-4, RP-5 and RP-7 and telephone relays type RKN. Thermal relays type TG-a have also been used in some circuits. The general reliability and life of these relays when used in particular circuits are discussed. Life tests were made using the circuit of Fig 1 and the number of operations with different relays ran into millions. The circuit of a contactless inductive circuit-breaker used on mine-type winding-gear for over-wind protection is given in Fig 2 and the operation of the

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SOV/110-58-9-4/20

The use of Light-current Relays on Automatic Coal-mining Equipment

equipment is described. The occurrence of an over-wind alters the inductance of a circuit, so tripping the polarised relay. Over-wind protective gear based on this circuit has been successfully used in the Donbas for the last two years. A schematic diagram of a velocity relay is given in Fig 3 and the functioning of the circuit is described. Protective gear on this principle is being widely used, particularly on conveyors in open-cast workings. The circuit of a resistance relay used to control the level of coal or waste in bunkers is given in Fig 4 and its method of operation explained. Gear of this type has been in operation for some years. A schematic diagram of an inherently-safe circuit, employing telephone relays, a thermal relay and germanium diode and triodes, for the automatic control of conveyors, is given in Fig 5 with an explanation of its action.

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SOV/110-58-9-4/20

The Use of Light-Current Relays on Automatic Coal-mining Equipment

Selenium rectifier equipment manufactured by the Dnepropetrovsk works, which has undergone all flameproof and fireproof testing, is now undergoing field testing in mines.

There are 5 figures.

SUBMITTED: January 4, 1958

1. Mining equipment--Control systems 2. Electric relays--Applications
3. Polarized relays--Applications 4. Relays--Life expectancy

Card 3/3

GAL'TSOV, A.D.; DENISYUK, I.N.; LEVANDOVSKIY, S.N.; LOSEV, A.G.; PEZIK, M.O.; PETROCHENKO, P.F.; SAVOS'KIN, N.M.; TRUBITSKIY, G.R.; KHISIN, R.I.; KHROMILIN, V.A.; ALEKSEYEV, S.S., retsenzent; GAL'PERIN, L.I., retsenzent; GRANOVSKIY, Ye.N., retsenzent; ZAKHAROV, N.N., retsenzent; KVASHNIN, S.A., retsenzent; KEREKESH, V.V., retsenzent; KOTENKO, I.N., retsenzent; LIVSHITS, I.M., retsenzent; LERNER, G.V., retsenzent; NEVSKIY, B.A., retsenzent; NOVIKOV, V.F., retsenzent; RAZAMAT, E.S., retsenzent; SERGEYEV, A.V., retsenzent; STEFANOV, V.P., retsenzent; TOLCHENOV, T.V., retsenzent; FEDOTOV, F.G., retsenzent; VOL'SKIY, V.S., red.; STRUZHESTRAKH, Ye.I., red.; USPENSKIY, Ya.K., red.; SEMENOVA, M.M., red.izd-va; MOSKL', B.I., tekhn.red.

[Handbook for work-norm experts in machine manufacture] Spravochnik normirovshchika-mashinostroitelia v 4 tomakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. Vol.1. [Fundamentals of technical normalization] Osnovy tekhnicheskogo normirovaniia. 1959. 676 p. (MIRA 12:12)

(Standardization)

GAL'PERIN, L. L.

Motorvagonnyi podvizhnoi sostav. [Rolling stock of motor trains] . 2., perer. i dop. izd. Odobreno v kachestve posobiia dlia mashinistov motorvagonnoi tiagi. Moskva, Gos. transp. zhel-dor. izd-wo, 1946. 587 p. diagrs.

"A detailed engineering textbook on electric passenger trains of the combined loco-coach type."

DLC TF920.G3 1946

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress, Reference Department, Washington, 1952, Unclassified .

GAL'PERIN, L. L.

Motorvagonny i podvizhnoi sostav. [Rolling stock of motor trains]. 3. perer. i dop. izd. Moskva, Gos. transp. zhel.-dor. izd-vo, 1950. 559 p.
DLC: Slavic Unclass.

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress Reference Department, Washington, 1952, Unclassified.

GAL'PERIN, L.L.

[Maintenance of railroad rolling stock; experience of the Pererva electric depot of the Moscow-Kursk railroad] Obsluzhivanie motorvagonnogo podvizhnogo sostava; opyt elektrodepo Pererva Moskovsko-kurskoi zh.d. [Moskva] Gos. transp.zhel-dor.izd-vo, 1952. 51 p. (MLRA 6:7)
(Railroads--Electrification) (Railroads--Maintenance and repair)

GAL'PERIN, L. L.

SHARI, Tamara Sergeyevna. GAL'PERIN, L. L., redaktor; BOBROVA, Ye.N., tekhnicheskiy redaktor.

[Devices used in repairing electric locomotive equipment] Prispособleniia dlia remonta oborudovaniia elektrovozov; opyt raboty kollektivov elektrovoznykh depo elektrifitsirovannykh uchastkov Severnoi, Sverdlovskoi i IUzhno-Ural'skoi dorog. Moskva, Ges. transp.zhel-dor.izd-vo, 1957. 66 p. (MLRA 10:6)
(Electric locomotives--Repairing)

KHARITONOV, P., shofer; GAL'PERIN, L., inzhener; KALASHNIKOV, S., mekhanik.

Automatic bus stop signs. Avt. transp. 34 no.7:10-11 Jl '56.
(MLRA 9:10)

(Motorbuses)

GAL'PERIN, Lev Lipovich; KURCHASHOVA, Valentina Anatol'yevna; SOKOLOV, L.S., inzhener, redaktor; KHITROV, P.A., tekhnicheskiy redaktor

[Electric railroad engineer's handbook] Spravochnik mashinista motorvagonnoi tiagi. Moskva, Ges.transp. zhel-dor. izd-vo, 1956. 395 p. (MIRA 10:1)
(Electric railroads)

GAL'PERIN, L. L.

Electric railroad rolling stock; textbook Moskva, Transzheldorizdat, 1954.

GAL'PERIN, L.L.

[Railroad motor cars] Motorvagonnyi podvizhnoi sostav. 4-e izd. Moskva, Transzheldorizdat, 1954. 604 p. (MLRA 7:12D)

GAL'PERIN, L.L.

NEKLYUDOV, V.S.; RYAPOV, M.Ye.; SHKURKO, I.A.; GAL'PERIN, L.L., redaktor; VERINA, G.P., tekhnicheskiy redaktor

[Collection of important official documents on electric traction] Sbornik vazhneishikh ofitsial'nykh materialov po elektricheskoi tiage. Moskva, Gos.transp.zhel-dor. izd-vo, 1957. 510 p. (Electric railroads) (MLRA 10:9)

PROKHOROV, Fedor Nikitovich; GAL'PERIN, L.L., inzhener, redaktor; BOBROVA Ye., N., tekhnicheskiy redaktor.

[Electric traction and power supply of electric railroads] Elektrotiagovoe khoziaistvo i energosnabzhenie elektricheskikh zheleznykh dorog. Moskva, Gos.transp.zhe-dor.izd-vo, 1957. 155 p. (MIRA 10:11)

(Electric railroads)

ALKHAZOV, D.G., ANDREYEV, D.S., GAL'PERIN, I.M., GRINBERG, A.P., GUSINSKIY, G.M., LEMBERG, Y.Kh., and YEROKHINA, K.I.

Physical Technical Inst. Acad. Sci. USSR

"Coulomb Excitation of Nuclei (review lecture)

paper submitted at the A-U Conf. on Nuclear Reactions in Low and Medium Energy Physics, Moscow, 19-27 Nov 57

KOLESOV, Yu.R.; VASIL'YEV, P.K.; GAL'PERIN, L.N.

Automatic calorimeter for liquids. Zhur. fiz. khim. 39 no.5: 1266-1270 My '65. (MIRA 18:8)

1. Institut khimicheskoy fiziki AN SSSR.

5(4) SOV/20-127-1-35/65

AUTHORS: Gal'perin, L. N., Mal'tsev, V. M., Pokhil, P. F.

TITLE: Measurement of the Flame Temperature of Condensed Systems (Izmereniye temperatury plamen kondensirovannykh sistem)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 1, pp 131-134 (USSR)

ABSTRACT: A method of measuring the temperature is suggested here, which is based on the blue-red ratio (Refs 1-3). The system is depicted in figure 1. The constant light source is given by a xenon lamp SVDSh-1000. The powder sample is ignited electrically in a cylinder under pressure. The light emitted by the xenon lamp is directed through the powder flame and a collimator by means of an optical arrangement; it is then split into two beams in a double prism, the two beams are directed through a red and a blue filter respectively, and the light pulses are intensified by means of a photomultiplier. Experiments were made with nitro glycerin powder under pressures of from 20 to 150 at . Figure 2 shows that in the case of 50 at the flame temperature attains the maximum of 2,200°K, which remains constant with further rising pressure. With rising pressure, however, the

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distance between the hottest flame zone and the powder surface narrows (Fig 3): 6.2 mm at 20 at, 2.7 mm at 50 at . The dependence of the light absorption capacity of the flame on pressure is shown in figure 4. The situation of the pressure-dependant maximum of light permeability over the powder surface is explained by the burning process: (1) formation of a strongly light-absorbing flue gas mixture, (2) decrease in the weight- and particle concentration of the smoke owing to combustion, (3) increase in the concentration of aerosol particles (soot) with rising temperature. There are 4 figures and 6 Soviet references.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
(Institute of Chemical Physics of the Academy of Sciences, USSR)

PRESENTED: March 10, 1959, by V. N. Kondrat'yev, Academician

SUBMITTED: March 10, 1959

S/076/60/034/05/31/038
B010/B003

AUTHORS: Pokhil, P. F., Mal'tsev, V. M., Gal'perin, L. N.

TITLE: A Device for the Determination of the Temperature From the Height of the Tongue of a Gunpowder Flame

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 5, pp. 1131-1132

TEXT: A device for measuring the temperature within the range 1,300 - 3,000°C is described, in which the height of the flame tongue of gunpowder is determined in dependence on pressure. The determination of the temperature dependence is based on the comparative method of the blue-red coloring which is applied for flames emitting a continuous spectrum in the visible. In the device described the absorptive power is measured along the flame (at certain wavelengths) and, thus, the actual temperature is determined. Simultaneously, the rate of combustion of the gunpowder is determined. The device (Fig. 1, block diagram) contains a collimator, a powerful homogeneous light source (SVDSh-1000(SVDSh-1000),

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A Device for the Determination of the Temperature From the Height of the Tongue of a Gunpowder Flame

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B010/B003

xenon lamp) used to determine the absorptive power of the flame, and an ФЭУ-42 (FEU-42) photomultiplier to convert the light into electricity. Besides, the device has a Б-150 (B-150) high-pressure vessel for the combustion of the sample at 150 atm and an МПО-2 (MPO-2) oscilloscope for signal recording. The block diagram of the photomultiplier (Fig. 2) and a description of the operation of the device are given. There are 2 figures and 6 Soviet references.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR Moskva (Institute of Chemical Physics of the Academy of Sciences of the USSR, Moscow)

SUBMITTED: July 1, 1959

Card 2/2

GAL'PERIN, L.N. (Moscow)

Automatic thermobalance. Zhur.fiz.khim. 36 no.10:2294-2297 O '62. (MIRA 17:4)

1. Institut khimicheskoy fiziki AN SSSR.

37795
S/120/62/000/002/020/047
E192/E382

21,6000

AUTHORS: Afonin, O.F. and Gal'perin, L.N.

TITLE: A simple system of binary-decimal counting for a multichannel amplitude-analyzer with a potential-barrier storage tube

PERIODICAL: Pribory i tekhnika eksperimenta, no. 2, 1962. 89 - 92

TEXT: An auxiliary circuit designed for operation with an amplitude-analyzer based on the tube, type AMA, is described (Ref. 1 - PTE, 1959, no. 4, 161). The operation of the binary adding system in the analyzer, type AMA, is as follows. Assuming that 19 pulses (code 10011) are recorded in a given channel (vertical line on the target of the tube) and that another pulse is added, the latter actuates the unblanking multivibrator which produces a train of rectangular pulses which open the beam of the barrier tube and actuate the time base Y in such a manner that up to the termination of each pulse the beam is displaced to the successive vertical element on the target. The time base Y is in the form of a binary counter

Card 1/5

A simple system of ....

S/120/62/000/002/020/047
E192/E382

consisting of 6 binary circuits with an adding circuit whose output resistance produces a steplike potential function which is applied to the vertical deflection plates of the tube. During the first unblanking pulse, the beam deletes the recorded "1" on the first element, i.e. the "1" is replaced by "0". A reading pulse appears on the signal plate during the deletion; this is amplified and shaped and then applied to the input of an anti-coincidence circuit together with the unblanking pulses. The ray is then shifted to the second element, where the same process takes place and then to the third element. "1" is recorded on the third element, this being due to the fact that a "0" was recorded in this position; the reading pulse does not appear in this position and the output of the anti-coincidence circuit produces a recording pulse and this is applied to the signal plate. The falling edge results in the generation of a re-set pulse which returns the binaries of the time base Y into their initial state and interrupts the operation of the unblanking multivibrator; recording of the successive elements is therefore unchanged. The code 10011 is therefore replaced by 10100, which

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corresponds to an addition of a "1" . The code obtained from the auxiliary circuit of the system differs from the binary in "8" and "9". The block diagram of the auxiliary equipment is shown in Fig. 3. The principal element of this system is the binary Π_1 (see the figure). When this binary is in its initial position the binary counter of the time base Y operates as an adding circuit since its second binary is triggered from the anode of the second tube of the first binary. The reversing binary Π_1 is in its initial state until the appearance of the 8th input pulse. When the 8th pulse appears the ray of the barrier-grid storage tube is shifted to the 4th element of the vertical line. This transition and the transitions to the 8th, 12th and 16th elements produce a coincidence of the pulses of the first and second binaries of the counter. A "1" is recorded on the 4th element and the reversing binary is actuated by the anode pulse from the coincidence circuit Π_2 . During the changeover the reversing binary performs the following functions:

a) switches over the second binary of the binary counter so that

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the counter begins to operate as a subtracting device;
b) disconnects the third binary from the preceding units;
c) disconnects the re-set pulse of the binary counter by means of the diode Δ_1, and

d) permits the passage of a pulse from the first binary of the counter through the tube Π_5 in order that the binary Π_1 can be returned into its initial position.
When the binary Π_1 is actuated, the unblanking pulse transfers the beam from the 4th element to the preceding element, where a "1" is recorded and then to the 2nd element when another "1" is recorded. During transition to the 2nd element, the positive pulse of the first binary of the counter returns the binary Π_1 to its initial state. Simultaneously, the binary counter is again "converted" into an adding circuit and re-set into its initial position by the re-set pulse which simultaneously interrupts the operation of the unblanking multivibrator. A detailed circuit diagram of the auxiliary equipment is given.

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A simple system of ....

The system was reliable in operation even when its supply voltage (except the anode supply which was stabilized) was varied by ± 10%. There are 6 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR
(Physicotechnical Institute of the AS USSR)

SUBMITTED: June 21, 1961

Legend to Fig. 3: 1 - Coin.circuit for pulses of 1 and 2 binaries; 2 - Binary counter timebase "Y"; 3 - Coincidence circuit; 4 - Recording pulse; 5 - Anticoincidence circuit; 6 - Unblank pulse from multivibrator; 7 - Recording pulse to storage tube; 8 - Anti-reset pulse; 9 - Reversing binary; 10 - Delay; 11 - Coincidence circuit; 12 - Hached lines indicate usually open valves; 13 - Unblanking pulse; 14 - Binaries; 15 - reading pulse; 16 - Re-set pulse.

4

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S/170/63/004/001/005/015
B102/B114

AUTHOR: Gal'perin, L. N.

TITLE: Method and apparatus for linear heating

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 1, 1963, 39-45

TEXT: An apparatus was designed that allows linear heating of a thermostat volume at different heating rates and over a wide range of temperature. Its operation is based on following principle: Any change in thermostat temperature, and correspondingly, in the Pt-thermoresistor voltage, is a direct consequence of a change in the voltage of the heating rate transmitter. The automatic control system ensures equality of these voltages, which guarantees heating linearity. The temperature variation is effected by automatically controlled heat supply variations. A low-power heater supplies continuous heat and another with high power provides discrete supplies of heat. The temperature changes ΔT = wt necessary for linear heating are related to the heat-resistance changes by $\Delta R_t = R_0(D\Delta T + B\Delta T^2)$; $R_t = R_0(1+AT+BT^2)$, $\Delta T = T-T_0$, $D = A+2BT_0$. The heating

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Method and apparatus for ...

rate w is given by $w = (I_{tr}/I_{th})(R_{tr\ max}/mS_{max}).v$; $S_{max} = d\Delta T_{max}/2\delta T_{max}$; $\pm\delta T_{max}$ denotes the admissible fluctuations of the maximum temperature, $m = \Delta R_{th}/\Delta T$; the subscripts tr and th refer to transmitter and thermostat. Rate transmitter and thermoresistor are connected in a bridge circuit, controlled by a null instrument which guarantees $U_{th} = U_{tr}$ with an error less than 0.1%, i.e. the heating nonlinearity will be of the same order of magnitude. The range of operation of the apparatus is 50-200°C with a maximum temperature change of 60-100°C. The heating rate can be varied from 3.6 to 108°C/hr with an error of ±0.25%; $\delta T_{max} \approx 0.1$°C.

The maximum nonlinearity is about 1%, but the apparatus can easily be improved so as to reduce this to 0.1%. There are 2 figures.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR, g.Moskva
(Institute of Chemical Physics AS USSR, Moscow)

SUBMITTED: January 23, 1962

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L 10497-63 EPR/EPF(c)/EWT(m)/BDS--AFFTC/ASD--Ps-4/Pr-4--HM/EM-2/WW/
JW/JWD/H
ACCESSION NR: AP3000429 S/0076/63/037/005/1182/1186

AUTHOR: Gal'perin, L. N.; Shvedov, K. K. 76
78

TITLE: Method and setup for studying transient detonation processes

SOURCE: AN SSSR. Zhurnal fizicheskoy khimii, v. 37, no. 5, 1963, 1182-1186

TOPIC TAGS: deflagration-detonation transition, solid propellant, trotyl, nitromethane, hexogen, detonation velocity

ABSTRACT: The Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR), has developed a method and an experimental setup for studying deflagration-to-detonation transitions in solid and liquid explosives. The method is based on the reduction of resistance of a sensor, consisting of a pair of insulated wires, when shortened by the advancing reaction front. In contrast to F. C. Gibson's method (F. C. Gibson, M. L. Bowser, and C. A. Mason, Roy. Sci. Instr., 30, 916, 1959), the sensor is fed with d-c pulses, which improves the signal-to-noise ratio and eliminates calibration of the measuring circuit. The sensor consists of a copper wire 1.1 mm in diameter wound with PEVKT insulating wire 0.1 mm in diameter. The leads from the sensor are connected to a coaxial cable. In the experiments two sensing elements were

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ACCESSION NR: AP3000429

used: the actual velocity sensor and an auxiliary sensor which served for adjusting the correct current to the velocity sensor as the reaction front approached. Detonation velocities determined in cast trotyl, charges of TG 50/50, and nitromethane agreed within 2% with literature data. Deflagration-to-detonation transitions were studied in shock-wave-induced detonations of trotyl. The shock wave velocity (4.13 km/sec) was constant over a distance of 3.14 mm (for 0.76 μsec); then it increased gradually, and at a distance of 8.86 mm (after 1.69 μsec) it reached detonation velocity. Transition processes in hexogen were also studied. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 09Jun62 DATE ACQ: 19Jun63 ENCL: 00

SUB CODE: PR,FL NO REF SOV: 002 OTHER: 002

ss/ds
Card 2/2

GAL'PERIN, L.N.; KOLESOV, Yu.R.

Devices for measuring the rate of combustion of condensed systems.
Zhur. fiz. khim. 37 no.12:2776-2778 D '63. (MIRA 17:1)

1. Filial Instituta khimicheskoy fiziki AN SSSR.

GAL'PERIN, L.N.; AFONIN, O.F.; TKACH, I.I.

Amplitude analyzer for three-dimensional recording of nuclear spectra with the use of a digital magnetic recorder. Prib. i tekh. eksp. 9 no.3:67-77 My-Je '64 (MIRA 18:1)

1. Fiziko-tekhnicheskiy institut AN SSSR.

D. G.; GAL'PERIN, L. N.; GUSINSKIY, G. M.; LEMBERG, I. Kh.; NABICHVRISHVILI,

"Investigations of the Polarization of Gamma Radiation Emitted in the Case of Coulomb-Excitation of Some Nuclei with Odd-A."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

FTI (Physico Technical Inst)

ALKHAZOV, D.G.; GAL'PERIN, L.N.; GUSINSKIY, G.M.; LEMBERG, I.Kh.; NABICHVRISHVILI, V.A.

Polarization of gamma rays emitted in the Coulomb excitation of certain nuclei with odd A. Izv. AN SSSR.Ser. fiz. 29 no.5:787-793 My '65. (MIRA 18:5)

PATOVSKIY, O.M.; GAL'PERIN, I.N.

Automatic conductometer. Zhur. fiz. khim. 39 no.5:1273-1276 My '65. (MIRA 18:8)

1. Institut khimicheskoy fiziki AN SSSR.

A L 11826-66 EWT(l)/EWA(h)

ACC NR: AP6001569 SOURCE CODE: UR/0120/65/000/006/0058/0064

AUTHOR: Vasil'yev, V. D.; Gal'perin, L. N.; Il'yasov, A. Z.; Lemberg, I. Kh.; Udralov, Yu. I.

ORG: Physicotechnical Institute, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

62
59
B

TITLE: Gamma spectrometer with a p-i-n semiconductor detector 25

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1965, 58-64

TOPIC TAGS: gamma spectrometer, semiconductor device, particle detector, multichannel analyzer

ABSTRACT: The authors describe a gamma spectrometer with a p-i-n germanium detector cooled to the temperature of liquid nitrogen. The γ-spectrum is recorded by a 128-channel amplitude analyzer with an expander at the input. Line width of instrument noise is kept to 5 kev by a low-noise Chase preamplifier and carefully designed shielding. A block diagram of the unit is shown in Fig. 1. The detector is housed in the vacuum chamber of a Dewar flask and is kept at a temperature close to -190C by good thermal contact with the bottom of a vessel filled with liquid nitrogen. The signals to be studied are fed to the preamplifier and mixed at the input with reference pulses from the amplitude-controlled oscillator. The oscillator also generates code pulses in synchronization with the reference pulses which are fed through an hf cable to the input of the amplitude analyzer.

Card 1/3 UDC: 621.382:539.16.07

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ACC NR: AP6001569

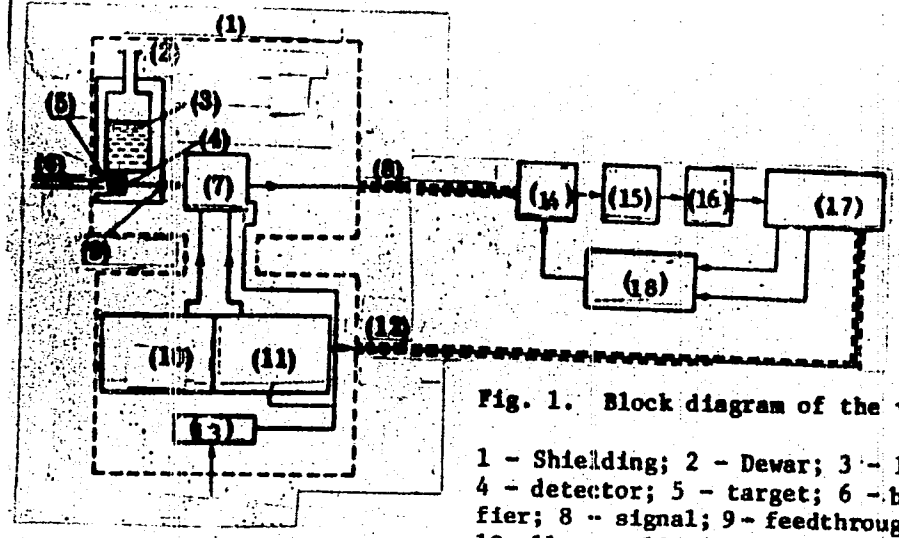

Fig. 1. Block diagram of the γ-spectrometer

1 - Shielding; 2 - Dewar; 3 - liquid nitrogen; 4 - detector; 5 - target; 6 - beam; 7 - preamplifier; 8 - signal; 9 - feedthrough insulator; 10, 11 - amplitude stabilized oscillator; 12 - code pulse; 13 - power supply; 14 - 6A3P control tube; 15 - UIS II amplifier; 16 - expander; 17 - 128-channel amplitude analyzer; 18 - amplification stabilization unit.

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