

"Northern Donets-Donbass Canal"

99-10-4/8

17 cu m/sec to 25 cu m/sec. A storage reservoir with a capacity of 546 million cu m will be built at Krasnyy Oskol to insure a steady supply. Four pumping stations, established between the 5 gravitational sections, lift the water to a total height of 237 m. The article contains 1 map, 3 figures and 12 photographs.

AVAILABLE: Library of Congress

Card 2/2

LERNER, V.I.

Large-diameter delivery conduits of the Northern Donets - Donets
Basin Canal. Vod. i san.tekh. no.1:4-10 Ja '59.
(MIRA 12:1)

(Donets Basin--Water pipes)

LERNER, V.S.

Automatic melt-level indicator. Izv.tekh. no.11:56-59 N '62.
(MIRA 15:11)

(Liquid level indicators)

LERNER, V.S., inzh.

Change in the phase voltages of electric ore-smelting furnaces.
Vest.elektroprom. 33 no.2:62-65 F '62. (MIRA 15:2)
(Electric furnaces)

1 37-58-4-6542

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 31 (USSR)

AUTHORS: Petrov, I.K., Zinov'yev, V.P., Lerner, V.S.

TITLE: Automatic Adjustment of Certain Processes in Lead and Zinc Metallurgy (Avtomaticheskoye regulirovaniye nekotorykh protsessov v metallurgii svintsa i tsinka)

PERIODICAL: Sb. tr. Vses. n.-i. in-t tsvetn. met., 1956, Nr 1, pp 119-139

ABSTRACT: The following systems of automation of various technical processes and parameters, developed by the VNIITsvetMet, are described. In connection with the automatic control (AC) of the amount of air delivered to a shaft furnace, a direct relationship has been experimentally determined to exist between the rate of air flow and the productivity of the furnace, which is an object of fixed capacity. AC is employed to hold constant the amount of air blown into the oven. In AC of the rate of motion of the pallets of a sintering machine, the primary signal is the thermoelectromotive force of 4 differentially-connected (paired) thermocouples, determining the position of the temperature maximum of the outgoing gases, which should be

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137-58-4-6542

Automatic Adjustment of Certain Processes in Lead and Zinc Metallurgy

in the third chamber from the "fault". The AC employs an electronic potentiometer, a millivoltmeter with an electronic regulator, a time relay, and an actuating mechanism manipulating the rpm of the sintering machine drive. In AC of the maximum productivity of sintering machine exhausters, the quantity is the current of the exhauster motor, which is held at an assigned constant level. AC is performed by means of an electronic potentiometer with a three-position control, a time relay, and a driving mechanism actuating a choke in the exhauster intake. In connection with AC of the operation of the assembly governing the returns in a sintering plant, the problem of the assembly is delivery of cooled return agglomerate ("returns") at a temperature not higher than that desired. In AC of electrical settling furnaces for the products of lead shaft-furnace smelting, three regulators employing electronic potentiometers with 3-position control sustain a definite current intensity in the circuit of each of the three electrodes by raising or lowering them. The design of AC for the thermal regime of a rotary tubular furnace provides for AC of the temperatures at the top and bottom ends of the furnace and of the vacuum, but automatic control of charging is required for the proper functioning of the AC system.

M. L.

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1 Lead--Processes--Automation 2 Zinc--Processes--Automation

LERNER, V.S., inzhener.

Experimental determination of frequency characteristics of circuit
members used in automatic control of pressure. Priborostroenie
no.9:1-3 S '57. (MIRA 10:10)
(Electronic control) (Pressure regulators)

137-58-4-6540

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 31 (USSR)

AUTHORS: Lerner, V.S., Kornil'tsev, Yu. A.

TITLE: Automatic Measurement of the Level of the Fused Mass in Electrical Lead-smelting Furnaces (Avtomaticheskoye izmereniye urovnya rasplavlennoy massy v elektricheskikh pechakh svintsovoy plavki)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 14, pp 24-25

ABSTRACT: A description is offered of a periodically-functioning instrument consisting of a bar and a cable let down by a driving mechanism (DM) every 20 or 30 min, or at some other time interval actuated by a time relay (TR) and an electronically-recording automatic balanced bridge (BB) with a disk record and an electric circuit. When the bar touches the melt as it is lowered, a voltage relay is turned on, the DM stops, the BB is switched on, and this measures the resistance of the feedback resistor of the DM and records the distance the bar has been lowered, or in other words the level of the heat. Then the TR switches off the BB circuit, raises the bar, and actuates a disconnect switch when the bar is in its raised position. The

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137-58-4-6540

Automatic Measurement of the Level (cont.)

interval is counted off, the TR operates, and the cycle is repeated. The level can be measured within the range of 500-2000 mm.

M. L.

1. Metallurgy 2. Equipment--Design 3. Equipment--Operation 4. Melts
--Level--Measurement

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SOV/137-58-8-16348

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 16 (USSR)

AUTHORS: Lerner, V.S., Kornil'tsev, Yu.A.

TITLE: An Automatic Power-control Circuit of an Electric Foundry Furnace for Smelting Lead Sinter (Skhema avtomaticheskogo regulirovaniya elektricheskoy moshchnosti rudnotermicheskoy pechi dlya plavki svintsovogo aglomerata)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 24, pp 22-26

ABSTRACT: A description is provided of an automatic power-control system (ACS) in an electric foundry furnace developed and tested by the VNIITsvetmet at the Leninogorsk Lead Plant. The ACS circuit is adduced, its principles of operation are described, as is the equipment used in the ACS. In the conclusions it is noted that 3 variants of the ACS based on measuring and controlling the resistance in the electrode-slag-hearth circuit have been checked out in operation.

M.L.

1. Furnaces--Control systems 2. Furnaces--Circuits 3. Interref
lead--Processing

Card 1/1

AUTHORS: Lerner, V.S., and Kornil'tsev, Ye.A. SOV/115-58-1-28/50

TITLE: Measuring Alternating Currents and Voltages by the Compensation Method (Izmereniye peremennykh tokov i napryazheniy kompensatsionnym metodom)

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 1, p 56 (USSR)

ABSTRACT: The automatic control and adjustment of many processes requires precise measuring, recording and adjusting of alternating currents and voltages. But the control instruments produced by the Soviet instrument industry are not adapted for this purpose. The automation laboratory of VNIITsvetmet has solved the problem by using a revised version of a common automatic potentiometer, EPD-17. The

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SOV/115-58-1-28/50

Measuring Alternating Currents and Voltages by the Compensation Method

method is applicable only for such alternating currents and voltages whose phase coincides with the excitation phase of the vibratory converter. The error observed in test measurements by this method is about 0.5%. There is 1 diagram and 1 Soviet reference.

1. Alternating currents---Measurement
2. Voltage---Measurement
3. Potentiometers---Performance
4. Control systems---Equipment

Card 2/2

AUTHOR: Lerner, V.S. (Engineer)

SOV/110-58-10-10/24

TITLE: A speed proportional unit for automatic control circuits. (Blok proporsional'noy skorosti dlya skhem avtomaticheskogo regulirovaniya)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, No.10. pp. 34-36 (USSR)

ABSTRACT: This article describes equipment designed to vary motor speed over a wide range as a function of an input signal. The circuit, given in Fig.1., includes two amplidynes with internal feed-back connected in two phases of the motor stator with various relays, the function of which is explained. Graphs of the static characteristics of the circuit are given in Fig.2. The curves in Fig.2a. were determined with constant torque on the driving shaft; those of Fig.2b. are mechanical characteristics of the drive with various control signals on the input and variable torque on the motor shaft. The curves show that the system is effective. The dynamic characteristics are illustrated by oscillograms in Fig.3. The transient process is more rapid than in a contactless circuit of the same parameters. The comparative properties of the two systems are tabulated and it is shown that the recommended scheme operates very quickly. A circuit used for automatic temperature control incorporating a speed proportional unit is shown in Fig.4. The signal from the thermo-couple of an electric furnace acts on the input of an electronic potentiometer and thence to the operating device; this delivers the signal to a

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A speed proportional unit for automatic control circuits. SOV/110-58-10-10/24

regulated auto-transformer which alters the heater voltage in accordance with variations in the temperature. Throughout the test the temperature was maintained within the required range. It is concluded that the speed proportional unit can be applied to standard automatic control systems without major alteration. There are 4 figures and 1 table.

SUBMITTED. August 8, 1957.

1. Electric motors--Control systems
2. Speed regulators--Design
3. Speed regulators--Effectiveness
4. Amplidynes--Performance

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05362

SOV/102-59-1-6/12

AUTHOR: Lerner, V.S. (Ust'-Kamenogors'k)
TITLE: The Transfer Function of a Magnetic Amplifier Working into a Resistance Load

PERIODICAL: Avtomatika, 1959, Nr 1, pp 58-69 (USSR)

ABSTRACT: The actual magnetization curve of the core material is approximated by three straight lines, whose slopes are the initial and final permeabilities; hysteresis is neglected (Fig 1,b). Eddy-current losses are also neglected. The amplifier is treated as a passive four-terminal network; the currents and voltages are replaced by their mean values and waveform distortion is neglected (the treatment is closely Storm's). The inductance of the output circuit is neglected. Eq (1) and (2) are used in relation to Fig 2, which illustrates all the quantities appearing in the equations (the values are the instantaneous ones). These equations are transformed to those at the bottom of p 60 by using the approximations of Fig 1,b, which new equations are then transformed to (3) and (4), where S_1 and S_2 are the cross-sectional areas of the coils and μ_1 and μ_2 are the effective permeabilities along the straight lines. Fig 3 shows

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The Transfer Function of a Magnetic Amplifier Working into a Resistance Load

how $\mu_2 = \mu_1$ varies in time. The step-function is not expanded in Fourier form, because the expressions are cumbersome; instead, the functions at the bottom of p 61 are transformed to ones in terms of the mean currents. Eq (5) is applied to the emf, pd and ohmic loss in the coils to give Eq (6), or (7) in operational form, where the bars denote the Laplace transforms; correspondingly, Eq (4) becomes Eq (8). These equations are transformed to give the time-constants of the circuits (τ) and K is the ratio of \bar{I}_c to I_{Mc} . The transfer function in operational form is then Eq (9) for transient states or Eq (10) for an ideal core in which the a.c. and d.c. changes are simultaneous. Eq (11) - (13) then give the transfer functions for the various quantities; Eq (14) relates to an ideal core. These formulae are used to draw up the table on p 66, which lists (from left to right) the form of the transfer function, the structural formula for the magnetic amplifier and the coefficients in the transfer function. Fig 4 gives some results for a

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The Transfer Function of a Magnetic Amplifier Working into a
Resistance Load

magnetic amplifier used to control an asynchronous
motor (short-circuited rotor). There are 4 figures,
1 table and 11 references, 10 of which are Soviet and
1 English.

SUBMITTED: September 17, 1958

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8(2)

SOV/119-59-5-2/22

AUTHOR:

Lerner, V. S., Engineer

TITLE:

Investigation of the Wiring for the Automatic Regulation of the Output of an Ore-drying Kiln (K issledovaniyu skhemy avtomaticheskogo regulirovaniya moshchnosti rudnotermicheskoy pechi)

PERIODICAL:

Priborostroyeniye, 1959, Nr 5, pp 3-6 (USSR)

ABSTRACT:

In writing the present paper, the author was assisted by Yu. A. Kornil'tsev. At the VNIITSVETMET (All-Union Scientific Research Institute for Nonferrous Metals) a new wiring for the automatic regulation of the output of such a kiln was developed. This wiring is based on the calculation of the phase conductance of this kiln, and on the transmission of the regulating impulse corresponding to the change of this conductance. The most important peculiarity of the new system is the use of a device which reacts to a signal proportional to the current intensity of the phase current divided by the voltage of the kiln. The regulation of the output on the basis of the phase conductance of the kiln facilitates, in some cases, the use of an astatic regulation wiring without stabilizing connection. Thus, the whole system of automatic regulation can be greatly simplified and cheapened. The first section of the present paper analyzes the operation principle as well as the most essential

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Investigation of the Wiring for the Automatic Regulation of the Output of an Ore-drying Kiln SOV/119-59-5-2/22

static and dynamic characteristics of the device for the measurement of the (above-mentioned) fraction of 2 given electric quantities. The second section deals with the characteristics and the analysis of the automatic-regulation wiring. The wiring developed in the present paper was industrially tested at the ore-melting furnace of the Leninogorskiy polimetallicheskiy kombinat (Leninogorsk Polymetal Kombinat). The diagrams for the operation of this wiring are shown in a figure. The theoretically calculated data are in good conformity with the data obtained by the practical use of this wiring in an industrial electric furnace. There are 8 figures and 5 Soviet references.

Card 2/2

LERNER, V.S., inzh. (Ust'-Kamenogorsk)

Theory of the control of electric power in electric ore-smelting
furnaces. Elektrichestvo no.7:25-29 JI '60. (MIRA 13:8)
(Metallurgical furnaces) (Electric furnaces) (Automatic control)

S/110/60/000/008/005/008
E194/E455

AUTHOR: Lerner, V.S., Engineer

TITLE: An Induction Motor Control Circuit Employing
Magnetic Amplifiers with Internal Feed-Back

PERIODICAL: Vestnik elektropromyshlennosti, 1960, No.8, pp.69-72

TEXT: Magnetic amplifiers with internal feed-back offer particular advantages in choke circuits for the speed control of small induction motors. Compared with magnetic amplifiers having external feed-back they are smaller, lighter and of greater output; stray currents in the magnetic amplifiers have less effect and positive feed-back can be introduced as required. The new circuit developed by the author is covered by authors' certificate No.119917 of May 8, 1957: the schematic diagram is shown in Fig.1. Three magnetic amplifiers are provided for forward operation of the motor and two for reverse; there are also three rectifier units. The motor stator phase windings are split, so that half of them are working during one half cycle and half during the other. The direction of the rotating field depends on the magnetic amplifiers in use. Various types of motor with split stator windings are shown in Fig. 1.

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S/110/60/000/008/005/008
E194/E455

An Induction Motor Control Circuit Employing Magnetic Amplifiers
with Internal Feed-Back

series IMT 12/120, IMT 25/120, IM 12/60 and others.
Calculations are then made of phase currents and resistances and
it is shown that better use is made of the motor than in the
normal speed control circuit. The magnetic amplifiers are of
the same size and output in both the new and regular circuits.
It is shown, however, that stray currents in the magnetic
amplifiers have less effect in the new circuit than in the old.
The circuit under consideration has been applied to the
contactless speed and direction control of an operating mechanism
for automatic control systems. The circuit diagram of such a
contactless variable speed operating mechanism is shown in Fig. 2.
The signal from the measuring instrument is applied through an
electronic phase-sensitive circuit to the magnetic amplifier
control winding. Depending on the sign and magnitude of the
input signals, either one or another pair of magnetic amplifiers
is operated and the motor runs in one direction or the other at a
speed depending on the value of the input signal. To stabilize
the motor speed use is made of negative feed back according to
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S/110/60/000/008/005/008
E194/E455

An Induction Motor Control Circuit Employing Magnetic Amplifier
with Internal Feed-Back

voltage and positive feed back according to current; the method of doing this is explained. Tests were made with a motor type FAD-150 of 220 V, 150 W, 1350 rpm. Design details are also given of the magnetic amplifiers with internal feed back. A photograph of a magnetic amplifier is shown in Fig.3. Static characteristics of each magnetic amplifier taken with locked rotor and various voltages are shown in Fig.4. Fig.5 shows experimental characteristics of the magnetic drive taken with constant load torque on the shaft of the operating mechanism. Fig.6 shows oscillograms of the change in current and voltage wave-shape of the motor, according to the speed. There are 6 figures and 4 Soviet references.

SUBMITTED: March 16, 1960

Card 3/3

LERNER, V. S.

Cand Tech Sci - (diss) "Problem of automatic control of electric power in ore thermal multi-slag electric furnace." Moscow, 1961. 19 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Lenin Power Inst); 150 copies; free; bibliography on pp 18-19; (KL, 6-61 sup, 220)

LERNER, V.S. (Ust'-Kamenogorsk)

Analysis of the dynamic properties of one class of automatic control systems. Avtomatyka no.6:26-35 '61. (MIRA 14:12)
(Automatic control)

21796

S/103/61/022/004/003/014
B116/B212

16.9500 (1031, 1121, 1132, 1068)

AUTHOR: Lerner, V. S. (Ust'-Kamenogorsk)

TITLE: A method to correct dynamic properties of automatic control systems

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 4, 1961, 443-456

TEXT: The method to correct dynamic properties of automatic control systems investigated in the present paper is based on the change of their structure as a function of the sign for the deviation of the controlled variable before and after the elements of the automatic control system. The method is studied by using a relay system which has been developed by the author to control automatically the electric output of an ore-reducing furnace. The circuit is compared with theoretical and experimental results, with and without correction. The correction method is explained by using Fig. 1. In order to approximate the transient process 1 to 1' if the curve 1 is changing its sign with respect to curve 2, an element sensitive to sign is added in point a. This cuts off the filter, and the ab curve will increase faster than the corresponding bc curve. Then, the element sensitive to sign is

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B116/B212

A method to ...

switched off again and besides a small error the initial set-up is established. This way any original deviation caused by noises can pass through elements which assure an adequate filtering of high frequencies. The interaction will take place in the feedback circuit without the filters. The problem of changing the system structure according to working conditions has been brought up for the general case by V. V. Solodovnikov and for the pulse and relay systems by Ya. Z. Tsypkin. Fig. 3 brings the circuit for a phase of the ore-reducing furnace and it is used to illustrate the method mentioned. Fig. 5 represents a schematic diagram for an automatic control circuit, and it differs from industrial systems having a discrete adjustment of the control element. Here, the main-pulse and also the correction-pulse will pass through the object. That makes it possible to couple the correction pulse introduced, with the change of the object properties. Two schematics are compared with each other: Without a correction part (control system 1-2-2a-3-4-5-1 (Fig. 5)) and with a correction part (control system in dependence of the sign for $\varphi' - \theta$: 1-2-2a-3-4-5-1 or 1-2-3'-4'-5-1). The corresponding phase trajectories for this purpose (Fig. 6). The main difference is that each switching on in the correction schematic is done with a certain delay while the pulse is passing the integration unit of the

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B116/B212

A method to ...

apparatus. Each switch-off is done without this unit. In the circuit without correction the switch-on and also the switch-off pulse will pass through the integration unit. It is shown that the circuit with correction under equal object and control parameters permits to reduce limitations imposed to the insensibility zone and characteristics of certain elements. The noise effect on the correction circuit of the system in question is eliminated if the following condition is fulfilled

$$2\Delta\phi_0 > [A_1(\omega)]_{\max} \quad (14)$$

where $2\Delta\phi_0$ denotes the insensibility zone of the additional relay unit of the correction circuit and $A_1(\omega)$ the characteristic of the noise during melting. The experimental investigation of both circuits has been done in an electrolytic bath (electromodel of the furnace) where both controls have been added. Fig. 8 shows the oscillograms obtained. The Engineer A. N. Ryndin took part in the experimental investigation. Ya. Z. Tsyarkin is thanked for helping to prepare this article for publication. There are 8 figures and 12 Soviet-bloc references.

SUBMITTED: February 22, 1960

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B116/B212

A method to ...

Legend to Fig. 1: 1) Transient process at the filter input in an automatic control system without introducing any correction; 1') transient process in an automatic control system without filter; 2) transient process at the filter output in an automatic control system without introducing a correction; 3) transient process at the filter input in an automatic control system with correction; 4) transient process at the filter output in an automatic control system with correction; 5) adding of an element sensitive to sign; $2\Delta\varphi_0$ denotes the insensibility zone of this element; τ_0 denotes the response time in an automatic control system without filter; τ_k denotes the response time in an automatic control system with filter and correction; T_1, T_2, T_3 denote the period of the added circuit for the element sensitive to sign.

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GOLOVINSKIY, L.V.; LERNER, V.S.

Regulator of thermal processes in charge resistance furnaces.
Priborostroenie no.7:19-21 J1 '62. (MIRA 15:7)
(Electric furnaces) (Automatic control)

S/115/62/000/011/008/008
E194/E155

AUTHOR: Lerner, V.S.

TITLE: An automatic level gauge for molten charge in
furnaces

PERIODICAL: Izmeritel'naya tekhnika, no.11, 1962, 56-59

TEXT: Methods including those based on ultrasonics, radioactivity or contact, have been tried for measuring the level of molten metal in furnaces, but without great success. The equipment here described has been successfully tried in practice. An expendable graphite measuring electrode 100-150 mm in diameter, connected in parallel with one of the main electrodes, is kept in contact with the surface of the slag by a current relay operating a follow-up mechanism which lowers the electrode if the level of the charge falls. A time-lag relay periodically withdraws the electrode to ensure that rises of level are also followed. A further time-relay periodically withdraws the electrode to measure its length by recording the passage of the hot end past a photocell and then the instrument readings are automatically compensated for any change in
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An automatic level gauge for molten... S/115/62/000/011/008/008
E194/E155

electrode length. By adding a device to measure the resistance of the auxiliary electrode circuit, it is possible to measure in turn the depth of the slag, charge and molten metal. Construction of the equipment is briefly described; schematic diagrams are given and their operation is explained. The device is particularly simple when used with electric arc furnaces, because arrangements similar to those used to raise the main electrode may also raise the auxiliary electrode, but the device can also be used in other types of metallurgical equipment or when the substance whose level is to be measured is reactive and normal methods are inconvenient. There are 2 figures.

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LERNER, V.S.; MACHIL'SKIY, Yu.N.

Electric power regulator for electric smelting furnaces.
Avtom.i prib. no.1:64-66 Ja-Mr '62. (MIRA 15:3)
(Smelting furnaces) (Electric controllers)

LEBESK, V.S., kand. tekhn. nauk; PIRAGOV, G.V., kand. tekhn. nauk

Effect of geometrical dimensions and special engineering features
on ore-smelting furnaces and their regulatory features. Izv. vys.
ucheb. zav.; energ. 6 no. 5:51-57 Ag '63. (Sov. 1963)

1. Vsesoyuznyy nauchno-issledovatel'skiy gorno-metallurgicheskiy
institut tsvetnykh metallov i Ust'-Kamenogorskiy stroitel'no-dorozhnyy
institut. Predstavlena kolektsiya elektrotekhniki Ust'-Kamenogorskogo
stroitel'no-dorozhnogo instituta.

(Ore-smelting furnaces)

L 64301-65 EWT(m)/EWP(t)/EWP(b)
ACCESSION NR: AP5020211

LIP(c) JD

UR/0170/65/009/001/0025/0033
621.36

12
17
B

AUTHOR: Lerner, V. S.

TITLE: Determination of optimal conditions in converters

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 9, no. 1, 1965, 25-33

27

TOPIC TAGS: converter, optimal automatic control, smelting furnace, lead

ABSTRACT: The article contains a theoretical derivation of the criteria for optimal operating conditions in any type of converter. It starts from the assumption that, in optimal operation, the sum of all flows and forces introduced into the system from without is at a minimum absolute value. Also, under steady state conditions, the necessary condition for optimal operation is that all the internal parameters of the converter are independent of time. This is also valid for the entropy. It follows that the required condition for optimal operation of any converter can be determined from the totality of the external forces and flows. As a practical example, the article gives a detailed calculation of optimal operating

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conditions and considers the choice of basic parameters for an electrothermal process for the smelting of lead ores. Results of the theoretical calculation are said to coincide closely with the operating parameters of actual industrial furnaces. Orig. art. has: 24 formulas and 2 figures

ASSOCIATION: Politekhniceskij institut, g. Kishinev (Kishinev Polytechnic Institute).

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ENCL: 00

SUB CODE: IE

NR REF SOV: 006

OTHER: 001

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L 05265-67 EWP(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)

ACC NR: AR6021349

SOURCE CODE: UR/0372/66/000/002/G034/G034

AUTHOR: Lerner, V. S.

54
B

TITLE: Mathematical description and optimization of automated systems

SOURCE: Ref zh. Kibern, Abs. 2G202

REF SOURCE: Sb. Materialy dokl. 1-y Nauchno-tekhn. konferentsii Kishinevsk. politkhn. in-ta. Kishinev, 1965, 115-116

TOPIC TAGS: optimal control, information theory, thermodynamic calculation

ABSTRACT: The applicability of equations of the thermodynamics of irreversible processes to the mathematical description of physico-chemical processes in automated systems is examined. Such an approach takes into account the different physical nature of these processes. It is shown that the principal information characteristics of the processes are the static and dynamic admittances of the energy channels. The conditions for the stability of automated systems, as expressed through these information characteristics, are established. A mathematical model of the system is utilized to determine the amount of information required for its control. It is shown that a controlled system consumes information. The optimal mode

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UDC: 621.391.17

L 05265-57

ACC NR: AR6021349

of the system is determined, and so is the system's optimality criterion. The necessary and sufficient conditions for the existence of the optimal mode are formulated and proved. A relationship is established between the obtained optimality criterion and Shannon's condition of maximum channel capacity. O. L. [Translation of abstract]

SUB CODE: 09, 06/

Card

2/2

egh

L 05294-67 EWT(d)/EWP(v)/EWT(k)/EWP(h)/EWP(l)
ACC NR: AR6021348 SOURCE CODE: UR/0372/66/000/002/G017/G017

AUTHOR: Lerner, V. S.

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TITLE: Optimal behavior of self-regulating (adaptive) systems 4

B

SOURCE: Ref zh. Kibern, Abs. 2G110

REF SOURCE: Sb. Materialy dokl. 1-y Nauchno-tekhn. konferentsii Kishinevsk. politekhn. in-ta. Kishinev, 1965, 117-118

TOPIC TAGS: self adaptive control, optimal control, intelligent programming system

ABSTRACT: A dynamic system forming its behavior according to the received information as a result of self-adjustment and self-organization is considered. The preceding states of the system are known. The system's equations are not known a priori and are determined during the control process. The general problem of determining the optimal trajectory of the system is stated on the assumption that the behavioral goal either is not formulated or cannot be specified. An axiomatic solution of the problem is presented with respect to determinate and statistical (information) systems. It is proved that any optimally behaving adaptive system

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UDC: 62-506.1:681.142.36

L 05294-67

ACC NR: AR6021348

undergoes a succession of stable states. For information systems these states are characterized by decrease in the rate of entropy in the process of adaptation. O. L. [Translation of abstract]

SUB CODE: 06, 09/

Card

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egh

SHISHONOK, Nikolay Andreyevich; REFKIN, Vasilii Fedorovich;
BARVINSKIY, Leonid Lvovich; Printsipi uchastiye
LENER, V.Yu.; LASTOVCHENKO, M.M.; KREDETSKY, B.F.;
USHAKOV, I.A.; BARZILOVICH, Ye.Yu.; SENETSKIY, S.A.;
ALEKSANDROVA, A.A., red.; GUTCHINA, N.Ya., red.;
LYUBIMOVA, T.M., red.

[Principles of the theory of the reliability and operation of radioelectronic apparatus] Osnovy teorii nadezhnosti i ekspluatatsii radioelektronnoi tekhniki. Moskva, Sovetskoe radio, 1964. 550 p. (MIRA 18:2)

SAVCHENKO, S.; LERNER, Ya.

Grain receiving station with cleaner. Muk.-elev.prom 22 no.9:8-9
S "6. (MLRA 10:8)

1. Zarestitel' upravlyayushchego Omskoy kontoroy Zagotzerno (for
Savchenko). 2. Glavnyy inzhener Omskoy kontoroy Zagotzerno (for Lerner).
(Grain elevators)

LERNER, Ya., inzh.

Use of machinery in repairing bucket elevators. Much.-elev. prom.
24 no.4:25-26 Ap '58. (MIRA 11:5)

1. Kirovsk-Omskiy elevator.
(Elevators--Maintenance and repair)

LERNER, Ya.

Automation at the Kirovsk-Omsk Grain Elevator. Muk.-elev. prom.
25 no.8:11-13 Ag '59. (MIRA 13:1)

1. Glavnyy inzhener Kirovsk-Omskogo elevatora.
(Grain elevator--Equipment and supplies)
(Automation)

22(1)

SOV/47-59-2-10/31

AUTHOR: Lerner, Ya.F.

TITLE: Expounding the Theme "Three-phase Current" in Electrical Engineering (Izlozheniye temy "Trëkhfaznyy tok" po elektrotekhnike)

PERIODICAL: Fizika v shkole, 1959, Nr 2, pp 40-46 (USSR)

ABSTRACT: The subject "Three-Phase Current", for which the new curriculum provides only 4 hours, can be dealt with expediently in 2 lessons. The author describes in detail the procedure to be adopted by the teacher in giving these lessons, and recommends that the students be told of the Russian Engineer M.O. Dolivo-Dobrovol'skiy, who first developed and realized the system of transmitting energy by three-phase current, and designed the first three-phase non-synchronous engine. He explains the way in which the students should be familiarized with the construction of a three-phase synchronous engine and indicates what home work the students should be given

Card 1/2

SOV/47-59-2-10/31

Expounding the Theme "Three-Phase Current" in Electrical Engineering

from the physics textbooks of A.V. Peryshkin, S.K. Andriyevskiy and A.L. Bartnovskiy. There are 15 diagrams.

ASSOCIATION: 238-ya shkola, Moskva (238th School, Moscow)

Card 2/2

MALOV, N.N., prof.(Moskva); LERNER, Ya.F. (Moskva); SHAMASH, S. Ya.

Discussion of the electrical engineering program. Fiz. v
shkole 20 no.2:59-62 Mr-Apr '60. (MIRA 15:4)

1. Zaveduyushchiy kabinetom fiziki i elektrotehniki Moskovskogo
instituta usovershenstvovaniya uchiteley (for Shamash).
(Electric engineering--Study and teaching)

LERNER, Ya.F. (Moskva)

"Teaching electric engineering in school," compiled by
N.P. Bulatov. Reviewed by IA.F. Lerner. Fiz. v shkole 21
no.1:94-95 Ja-F '61. (MIRA 14:9)
(Electric engineering--Study and teaching)
(Bulatov, N.P.)

LERNER, Ya.F. (Moskva)

Studying the topic "Electric meters and electric measurements"
during the course in electric engineering in the eleven-year
school. Fiz.v shkole 21 no.3:42-48 My-Je '61. (MIRA 14:8)
(Electric measurements—Study and teaching)
(Electric meters)

LERNER, Ya. N.

KNEREL', G.M.; LERNER, Ya.N.; POZDEYEV, V.I.; POPOV, V.A.; REZNIK, M.Ya.;
REYFER, Ya.A.; SKACHKOV, A.I.; STEPANOV, M.N.; KHAL'TUNEN, V.V.;
KHTAPOVA, Ye.I.; SHREDER, B.L.; STERTSER, O.N.; AVRUSHCHENKO, R.A.,
red.; KONYASHINA, A.D., tekhn.red.

[Fifty years of the Leningrad tramway] 50 let leningradskogo
tramvaia. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1957. 231 p.
(MIRA 11:1)

(Leningrad--Street railways)

LERNER, Ye.I.

Prevention of automobile injuries and improvement of emergency aid for the victims. Ortop., travm. i protez. 26 no. 10: 55-59 0 '65. (MIRA 18:12)

1. Iz kafedry organizatsii zdravookhraneniya (zav. - prof. N.A. Vinogradov) Tsentral'nogo instituta usovershenstvovaniya vrachey i travmatologicheskogo otdeleniya (zav. - prof. Ya. G. Dubrov) Moskovskogo oblastnogo klinicheskogo instituta imeni M.F. Vladimirovskogo. Adres avtora: pochtovoye otdeleniye "Zarya kommunizma", Moskovskaya oblast', Podol'skiy rayon, Agrogorod 12/24. Submitted Dec. 30, 1964.

LEARNER, E. L.

27990. LEARNER. E. L. -- Vystoyaniye distal'nogo kontsa malobertsovoy kosti amputatsionnoy kul'ti goleni. Trudy pervoy nauch. MezhrEsp. Konf-tsii po lecheniyu invalidov otechestv. Voyny v sred. Azii. Tashkent, 1949, S. 315-27.

SO: Letopis' Zhurnal'nykh Statey. Vol. 37, 1949.

L 54550-65 EWT(d)/EED-2/EWP(1) Pq-4/Pg-4/Pk-4 IJP(c) BB/GG

UR/0286/65/000/008/0064/0065

ACCESSION NR: AP5015524

AUTHORS: Misulovin, L. Ya.; Auzin', V. Ya.; Maksimenko, N. A.; Lerner, Ya. L.;
Stroy, I. G.; Batura, S. E.; Shlyakhtina, D. A.

TITLE: Parallel-series shift register. Class 42, No. 170203

SOURCE: ¹⁶⁶Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 64-65

TOPIC TAGS: shift register

ABSTRACT: This Author Certificate presents a parallel-series shift register having potential triggers with gates at the recording inputs. To decrease the number of storage units, the register contains basic registers for parallel information recording and one auxiliary register controlling the shift of information in the basic registers. The outputs of each preceding trigger are connected to the record gate inputs of the next (see Fig. 1 on the Enclosure). The second inputs of the zero record gates of the auxiliary register are connected to the input for the shift pulse series at output, the one record gates are connected to the input for the shift pulse series at recording. The second input of the record gate of each trigger of the basic register is connected to the zero output of the trigger of the auxiliary register with the same number. The numeration

31
30
B

Card 1/1a

I. 54550-65

ACCESSION NR: AP5015524

of the basic and auxiliary registers is opposite. Orig. art. has: 1 diagram.

ASSOCIATION: Gosudarstvennyy elektrotekhnicheskiy zavod VEF (State Electrical Engineering Plant VEF)

SUBMITTED: 02Jan64

ENCL: 01

SUB CODE: DP

NO REF SOV: 000

OTHER: 000

Card 2/23

AKSEL'ROD, Solomon Moiseyevich; BEM AN, Mark Mikhaylovich; VINOGRAD, Lazar' Il'ich; GOL'DZAD, Samuil Shlemovich; DUGIN, Yakov Sergeyeovich; LULEPOV, Konstantin Vasil'yevich; KALUGA, Ivan Ivanovich; LERNER, Yefim L'vovich; LUTSKIY, Moisey Leybovich; PILETSKIY, Vladimir Kirillovich; SADOVNIKOV, Petr Pavlovich; SHLYAMOVICH, Abram Aronovich; VASIL'YEV, B.A., red.; SOBOLEV, Ye.M., tekhn. red.

[Problems of radio engineering and radar]Zadachnik po radiotekhnike i radiolokatsii. [By]S.M.Aksel'rod i dr. Moskva, Gosenergoizdat, 1962. 414 p. (MIRA 15:12)

(Radio) (Radar)

LERNER, Ye.L., kand. med. nauk

Activity of hyaluronidase in the blood of women in full-term and prolonged pregnancy and its changes under the influence of vitamins C and P. Akush. i gin. 39 no.5:47-51 S-O '63.

(MIRA 17:8)

1. Iz kafedry akusherstva i ginekologii (zav. - zasluzhennyi deyatel' nauki UkrSSR prof. I.I. Grihchenko) Khar'kovskogo meditsinskogo instituta.

BERG, A.I., glav. red.; TRAPEZNIKOV, V.A., glav. red.; TSYPKIN, Ya.Z., doktor tekhn. nauk, prof., red.; VORONOV, A.A., doktor tekhn. nauk, prof., red.; SOTSKOV, B.S., doktor tekhn. nauk, red.; AGEYKIN, D.I., doktor tekhn. nauk, red.; GAVRILOV, M.A., red.; VENIKOV, V.A., doktor tekhn. nauk, prof., red.; CHELYUSTKIN, A.B., doktor tekhn. nauk, red.; FRUKOP'YEV, V.N., doktor tekhn. nauk, prof., red.; IL'IN, V.A., doktor tekhn. nauk, prof., red.; KITOV, A.I., doktor tekhn. nauk, red.; KUNITSKIY, N.A., kand. fiz.-mater. nauk, red.; KOGAN, B.Ya., doktor tekhn. nauk, red.; USHAKOV, V.B., doktor tekhn. nauk, red.; LENNIK, Yu.A., doktor tekhn. nauk, prof., red.; FEL'DBAUM, A.A., prof., doktor tekhn. nauk, red.; SHREYDER, Yu.A., kand. fiz.-mat. nauk, dots., red.; KIKARKEVICH, A.A., akad., red.; TIMOFEYEV, P.V., red.; MASLOV, A.A., dots., red.; LEVIN, G.A., prof., red.; LOZINSKIY, M.G., doktor tekhn. nauk, red.; NETUSHIL, A.V., doktor tekhn. nauk, prof., red.; POPKOV, V.I., red.; ROZENBERG, L.D., doktor tekhn. nauk, prof., red.; LIVSHITS, A.L., kand. tekhn. nauk, red.

[Automation of production and industrial electronics] Avtomatizatsiya proizvodstva i promyshlennaya elektronika; entsiklopediya sovremennoi tekhniki. Moskva, Sovetskaia Entsiklopediya. Vol. 3. Pogreshnost' resheniya - Teleizmeritel'naya sistema chastotnaya. 1964. 487 p.

(MIRA 17:10)

П. Член-корреспондент АН ССР (for Sotskov, Gavrilov, Timofeyev, Popkov).

LERNER, Yu.I., redaktor

[Libraries of agricultural literature; a prospectus] Bibliotekhi sel'skokhoziaistvennoi literatury; prospekt. Moskva, 1956. 14 p.

(MLRA 9:10)

1. Russia (1923- U.S.S.R.) Gosudarstvennoye izdatel'stvo sel'skolkhozyaystvennoy literatury.
(Bibliography--Agriculture)

LERNER, Yu. I., PAVLOVA, M.M., tekhn.red.

[Catalog of publications of the State Printing House for Agricultural Literature for 1956] Katalog izdani Gosudarstvennogo izdatel'stva sel'skokhoziaistvennoi literatury, 1956. Moskva, 1957. 126 p.
(MIRA 11:4)

1. Russia (1923- U.S.S.R.) Gosudarstvennoye izdatel'stvo sel'skokhozyaystvennoy literatury.
(Bibliografny--Agriculture)

LERNER, Yu.I.; POKRASS, V.L.

Nomograms for determining the distance between crosscuts. Sbor.
trud.Inst.gor.dela AN URSR no.8:107-112 '61. (MIRA 15:2)
(Donets Basin—Coal mines and mining)

LERNER, Yu.I., ogrnyy inzh.; MIL'NER, Ya.L., gornyy inzh.

Study of the factors affecting the cost of coal by mathematical statistics methods. Ugol' 39 no.2:38-43 F '64. (MIRA 17:3)

1. Gosudarstvennyy institut po proyektirovaniyu shakht v yuzhnykh rayonakh SSSR.

KAMINSKIY, I.N., kand. ekonom. nauk; LABKOVSKIY, B.Ye., kand. ekonom. nauk; FETEROVICH, I.I., kand. tekhn. nauk; PINSKIY, S.Ye., inzh.; TYURKINA, N.I., inzh.; KHODOS, G.I., inzh.; KHELEMENDIK, V.G., inzh.; LERNER, Yu.I., inzh.

Problem of a standard structure of management, standard staffs, and norms on the number of engineers, technicians and employees in coal mines. Ugol' 40 no.8:60-65 Ag '65.

(MIRA 18:8)

1. Institut gornogo dela im. A.A. Skochinskogo (for all except Khodos, Khelemendik, Lerner). 2. Donetskii nauchno-issledovatel'skiy ugol'nyy institut (for Khodos, Khelemendik). 3. Gosudarstvennyy institut po proyektirovaniyu shakht v yuzhnykh rayonakh SSSR (for Lerner).

RADOMYSEL'SKIY, I.D.; LERNER, Yu.N.; PECHENTKOVSKIY, Ye.L.

Automatic die for the molding of flanged bushings. Porosh.met.
2 no.1:75-79 Ja-F '62. (MIRA 15:8)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.
(Dies (Metalworking)) (Powder metallurgy)

LERNER, Yu.S., inzh.; RUDENKO, V.A., inzh.; SHANDERONICH, M.B., inzh.

Specialized shop for founding magnesium cast iron. Mashinostroenie
no.: 63-65 Ja-F '64.

SHENDEROVICH, M.B., LERNER, Yu.S.; RUDENKO, V.A.; KLIMENT'YEV, I.D.;
IVLEV, V.A.

Magnesium cast iron castings for agricultural machinery. Lit. }
proizv. no.1:35 Ja '65. (MIRA 18:3)

LERNER, Yu.S., inzh.; SHENDEROVICH, M.B., inzh.

Preparing magnesium cast iron with high plasticity and toughness.
Mashinostroenie no.1:46-48 '65. (MIRA 18:4)

SAMARIN, A.A., inzh.; LERNER, Yu.S., inzh.

Casting piston rings of magnesium cuprous cast iron for diesel engines. Mashinostroenie no.4:64-65 JI-Ag '65.

(MIRA 18:8)

LERNER, Yu.S., inzh.; SHENDEKOVICH, M.B., inzh.

Machinability of magnesium and malleable cast iron. Mashino-
stroenie no.6:45-47 N-D '64 (MIRA 18:2)

SHENDEROVICH, M.B., inzh.; LEINER, Yu.S., inzh.; POTEYKO, G.B., inzh.

Parts made of manganese cast iron for heavy motortrucks.
Mashinostroenie no.3:47-48 My-Je '64.

(MIRA 17:11)

SAVCHENKO, A.Ye., gornyy inzhener-marksheydor; LERNERMAN, R.G., gornyy
inzhener-marksheydor

Automatic TA-LS tachymeter for the surveying of open-cut mines.
Ugol' 36 no.11:44-45 N '61. (MIRA 14:11)
(Strip mining) (Tachymeter)

KRIVORUCHKO, Nikolay Zakharovich, kand. tekhn. nauk; SLUSHAYENKO, A.M., dotsent, retsenzent; YELISEYEV, F.G., dots., retsenzent; LERNET, K.S., dots., retsenzent; GLUKHOV, V.A., dots., retsenzent; KIYANOV, P.I., inzh., retsenzent; TSI-MIDANOV, V.M., inzh., retsenzent; DOROFEYEV, V.G., inzh., retsenzent; KALEDENKOV, S.S., inzh., retsenzent; KOROLEV, A.N., inzh., retsenzent; LOKSHIN, Kh.A., inzh., retsenzent; FIRSOV, S.I., inzh., retsenzent; SHAKURSKIY, K.D., inzh., retsenzent; UTKIN, A.V., tekhn., retsenzent; VALETOV, A.I., inzh., red.; BOBROVA, Ye.N., tekhn. red.

[Operation, management, and repair of rolling stock] Vagonnoe khoz-
ziaistvo. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei
soobshcheniia, 1961. 319 p. (MIRA 14:11)

1. Kafedra "Konstruktsiya, remont i ekspluatatsiya vagonov" Rostov-
skogo instituta inzhenerov zheleznodorozhnogo transporta (for all
except Valetov, Bobrova).
(Railroads--Rolling stock)

LERNET, S.M., insh.

Lowering the expenditure of binding materials in making foamed concrete and practices of the building combine No.3 of the Building Materials Trust (82). Trudy NIIZHB no.8:219-223 '59. (MIRA 13:4)

1. Stroykombinat No.3, Khar'kov.
(Kharkov--Lightweight concrete)

LERO, J.

Med

Supplement to the study of chlorpromazine on carbohydrate metabolism. M. Draffner and J. Lero (Inst. Pharmacol. Fac. Pharm., Belgrad). *Acta Pharm. Belgica*, 6, 3(1959).--The effect of chlorpromazine (I) on glycemia has been shown in experiments carried out on rabbits kept at room temp. (22-25°) as well on those kept at such a high temp. as to prevent the fall of the central temp. after the injection of I. On basis of the results obtained the following conclusions have been made: (1) In rabbits kept at room temp. after I has been administered (5 mg./kg.) an increase of blood sugar level has been observed. The duration of this effect depends on the depth of hypothermia: the milder the hypothermia the shorter the hyperglycemia. (2) In rabbits which have been kept at 40° after the injection of I (25 mg./kg.), blood sugar level decreased slightly. (3) A certain correlation between temp. and blood sugar level has been observed. (4) The specific effect of I does not seem to be the increase, but the decrease, of the blood sugar level.

2

LERO, J.

YUGOSLAVIA/Human and Animal Physiology - Internal Secretion.
Hypophysis.

T-7

Abs Jour : Ref Zhur - Biol., No 18, 1958, 84325

Author : Lero, Jovanka; Mickovic, Lidija

Inst : -

Title : Effects of Extracts and Hormones Derived from Posterior
Hypophysical Lobes upon Glycemia.

Orig Pub : Arkhiv farrats., 1956, 6, No 1, 13-14

Abstract : Rabbits were hypodermically injected with one unit of
oxytocin per each kg of their live weight. After 60-90
minutes symptoms of hypoglycemia were observed, which in-
creased gradually and then subsided after 3 hours to ini-
tial level. Pregnant women suffering from diabetes should
be given injections of pure oxytocin in preference to in-
sulin which may cause an even greater increase of gly-
cemia. -- Yu.A. Dushkin

Card 1/1

DRNDARSKI, Dusan, major dr.; GRULOVIC, Gojko, major dr.; LERO, Zagorka,
kapetan dr.

Local streptomycin therapy of tuberculous lymphadenitis of the
neck. Voj. san. pregl., Beogr. 11 no.11-12:636-641 Nov-Dec 54.

1. Klinika za grudne bolesti VMA
(TUBERCULOSIS, LYMPH NODE
cervical ther., local streptomycin)
(STREPTOMYCIN, ther. use
tuberc., cervical lymph nodes, local admin.)

PAVLOVIC, M., Major dr.; VLATKOVIC, V., kapetan dr.; LERO, Z., kapetan dr.

Indicated lung resections not performed due to lack of
preoperative diagnosis of dissemination. Tuberkuloza, Beogr.
8 no.3-4:235-238 May-Aug 56.

1. Klinika za plucne bolesti VMA JNA Beograd (nacelnik:
pukovnik prof. dr. Jezdimir Studic).
(PNEUMONECTOMY, in var. dis.,
tuberc., indic. (Ser))

JINDRAK, Fr.; LEROCH, A.; JINDRAKOVA, E.

Hypertension and ganglioplegic drugs in galvanic cervical block.
Cas.lek.cesk.99 no.40:1266-1274 30 S'60.

1. I. a II. interni oddeleni OUNZ - nemocnice (v ramci zdravotnickeho vyzkumu) v Kladne, koordinacni uracovnik C.Sc.Fr.Jindrak.
(ELECTROTHERAPY)
(AUTONOMIC NERVOUS SYSTEM physiol)
(HYPERTENSION)
(AUTONOMIC DRUGS pharmacol)

EXCERPTA MEDICA Soc 11 Vol.11/9 O.R.L. Sep 58

1593. CONSERVATIVE OPERATION, LARYNGOFISSURE OR PARTIAL LARYNGECTOMY FOR LARYNGEAL CANCER - A gégerák konzervatív sebészete laryngofissio, vagy részleges gégeeltávolítás alakjában - Leroux - Robert J. - FÜL-, ORR-, GÉGEGYÓG. 1957, 2 (49-61)

Conservative operations were carried out in 136 patients: 81 patients (60%) were still cured after more than 5 yr. The restoration percentage is 72 (98 cured cases) if the patients are included, who were operated first with a conservative method without success and later with a more extensive operation which was followed by radiotherapy. It may be fairly stated that the conservative operations performed on the basis of the above indications result in 60 to 70% of cases in definitive healing lasting for over 5 yr. Out of 77 patients operated over 5 (from 5 to 20) yr. ago, 47 are still alive. One patient died 9 yr. after the operation of metastases in the cervical lymph nodes; one patient developed an oesophageal metastasis. (This, however, might be an independent tumour.) No local recurrence was observed after 5 yr. (really after the 2nd yr).

(XI, 5, 18)

RYZHKOV, F., izobretatel ; YAKOVLEV, K., inzh ; LEROV, S., inzh

A moving plant. Izobr. i rats. no. 8:14-15 Ag 61. (MIRA 14:9)
(Building materials)

YEFIMOV, S.; LEROV, E.

Members of the Communist Youth League of the "Kauchuk" Plant
prepare to make the gift of a "saved day." Tekh.mol. 29 no.8:
6-8 '61. (MIRA 14:11)
(Rubber industry--Technological innovations)

LENOV, B. 7. 1948.

Crane operation without a hook on. Table 1. 1948. No. 1.

1948.

(SA 14:11)

(Cranes, derricks, etc.)

LEROV, L.

Everything for man. Zdorov'e 5 no.8:13-15 Ag '59. (MIRA 13:8)
(MEDICAL INSTRUMENTS AND APPARATUS)

VEREYSKIY, O.; KUDREVATYKH, L.: LEROV, L.M., redaktor; RAZGULYAYEVA, H.G.,
tekhnicheskij redaktor

[Through Czechoslovakia] Po Chekhoslovakii. Moskva, Izd-vo "Pravda,"
1956. 46 p. (MLRA 9:8)
(Czechoslovakia--Description and travel)

LEROV, Leonid Moiseyevich; SKONECHNAYA, A.D., red.; KUZNETSOVA, G.I.,
tekhn.red.

[Across the Russian land] Po russkoi zemle. Moskva, Izd-vo
"Sovetskaisa Rossiia," 1960. 277 p. (MIRA 14:4)
(Russia--Description and travel)

LEROV, Leonid

Back again in the same. A. I. Leon. 48 20.6:82-89 3 165.
(MORA 18:8)

LEPS, J.

Standard CSN 35 97 15 for a safety belt. p.326

ENERGETIKA. (Ministerstvo paliv a energetiky. Hlavni sprava elektraren)
Praha

Vol. 5. no. 8, Aug. 1955

East European Acca lions List

Vol. 5 No. 1

Jan. 1956

BENUA, Zh. [Benois, J.]; LERUA, P.; VENDRELI, K.; VENDRELI, R.

New observations on Pekin ducks administered desoxyribonucleic acid from Khaki ducks in 1956 and observations on their progeny; comparison of the changed recipients with control ducks of the Pekin breed [from "Extrait des comptes rendus des séances de l'Académie des Sciences," t.250, p. 211-213. Jan.4, 1960].
Agrobiologia no.4:551-554 J1-Ag '60. (MIRA 13:8)

1. Laboratoriya fitobiologii Natsional'nogo nauchno-issledovatel'skogo tsentra, Zhif-syur-Ivett i Laboratoriya gistofiziologii Kollezh de Frans, Parizh i Nauchno-issledovatel'skiy tsentr po makromolekulam Natsional'nogo nauchno-issledovatel'skogo tsentra g. Strasburg.
(Nucleic acids--Physiological effect)
(Duck breeding)

24 (5)

AUTHORS:

Glasko, V. B., ~~Leryust, F.~~
Terletskiy, Ya. P., Shushurin, S. F.

SOV/56 35-2 20/60

TITLE:

Investigation of Particle-Like Solutions of a
Nonlinear Scalar Field Equation (Issledovaniye
chastitsepodobnykh resheniy nelineynogo uravneniya
skalyarnogo polya)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
Vol 35, Nr 2, pp 452-457 (USSR)

ABSTRACT:

For the investigation of possibilities offered by the
nonlinear field theory of elementary particles (Refs 1 - 9)
an investigation of the particle-like solution (Ref 1) of the
simplest nonlinear equation of the scalar complex field is
of especial importance. Thus it is e. g. possible to find
a qualitative solution of the problem of the existence
and character of the mass spectrum. The authors proceed
from the Lagrangian for a complex scalar field

$$\alpha - - \nabla \Psi^* \nabla \Psi + \frac{\partial \Psi^*}{\partial x_0} \frac{\partial \Psi}{\partial x_0} - m^2 [\Psi^* \Psi + F(\Psi^* \Psi)]$$

Card 1/3

Investigation of Particle-Like Solutions of a
Nonlinear Scalar Field Equation

SOV/56-35-2 20/60

($x_0 = ct$, $F(v)$ - a determined nonlinear function. m - a parameter with the dimension of a reciprocal length) with the field equations

$$\nabla^2 \Psi - \partial^2 \Psi / \partial x_0^2 - m^2 [1 + F'(\Psi^* \Psi)] \Psi = 0;$$

$$\nabla^2 \Psi^* - \partial^2 \Psi^* / \partial x_0^2 - m^2 [1 + F'(\Psi^* \Psi)] \Psi^* = 0$$

where $F'(v) = dF(v)/dv$

E and Q are then written down as functions of Ψ , Ψ^* and introduced:

$$\Psi = u(r) e^{-i \xi x_0} \quad \Psi^* = u(r) e^{i \xi x_0}$$

(ξ = parameter, proportional to a frequency), and E and Q

are given as functions of u and r . With $F(v) = -\lambda v^2 / 2, \eta = \sqrt{\lambda m r u}$

and $\varphi = r \sqrt{m^2 - \xi^2}$ η and φ are introduced and with their aid the first three particle-like solutions are derived.

(See also figures 1 to 3) The relevant mass spectrum is obtained by numerical integration for the simplest cubic term. Under favorable physical conditions a finite spectrum

Card 2/3

Investigation of Particle-Like Solutions of a
Nonlinear Scalar Field Equation

SOV/56-35-2-20/60

is obtained. There are 3 figures and 10 references, 2 of
which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State
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Abs Jour : Ref Zhur - Fizika, No 3, 1958, No 7024

Author : Les F., Niewodniczanski, H.

Inst : Jagellonian University, Cracow, Poland

Title : Hyperfine Structure of the Forbidden Line CdI 3141A ($5s^2 1s_0$ --
 $5s5p^3P_2^0$).

Orig Pub : Bull. Acad. polon. sci., 1957, Cl. 3, 5, No 3, 299-303

Abstract : An investigation was made of the hyperfine structure of the forbidden 3141A line in the spectrum of CdI. The source of light was a Schuler lamp with hollow cathode. The spectral instrument was a Fabry-Perot interferometer, crossed with a quartz spectrograph. The microphotogram shows that the line consists of a single component. This is in good agreement with the Bowen theory (Bowen J.S., Reviews of Modern Physics, 1936, 8, 58) according to which the transition with $J = 2$ is due to the interaction of the magnetic moments of the electron shell and of the nucleus. Cadmium was used with a natural isotope content; 74.9% even. Since all the even isotopes have

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Ab's Jour : Ref Zhur - Fizika, No 3, 1958, No 7024

a spin of zero, and the two odd isotopes (111 and 113) have the same spin, 1/2, the radiated line is naturally ascribed to the odd isotopes.

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Postepy fizyki 12 no.5:559-575 '61.

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GABLA, L.; LES, F.; NIEWODNICZANSKI, H.

Apparatus for the production of thin dielectric and metallic layers with optical control of thickness in the visible and ultraviolet region. Acta physica Pol 23 no.2:255-261 F '63.

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