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RUTITSKIK, Ya. B.

Krasnosel'skiĭ, M. A.; and Rutickiĭ, Ya. B. On a method of constructing N'-functions equivalent to the complementary ones to given N'-functions. Voronež. Gos. Univ. Trudy. Fiz.-Mat. Sb. 33 (1954), 3–17. (Russian)

In numerous problems connected with Orlicz space L_M^* there arises the need for the set of functions constituting L_N^* where M and N are complementary N'-functions. For most purposes, if an N_1 can be found such that the sets $L_{N_1}^*$ and L_N^* are identical, enough is accomplished. In this paper, the authors solve the problem of finding such an N_1 for a given M from a certain class of M.

Two N'-functions M_1 and M_2 are called equivalent ($M_1 \sim M_2$) if the sets $L_{M_1}^*$ and $L_{M_2}^*$ are the same. Criteria for equivalence of M_1 and M_2 are given and these range from such an elementary one as (a) $M_1(\alpha u) \leq M_2(u) \leq M_1(\beta u)$ for some $\alpha, \beta > 0$, all u sufficiently large, to so involved a test as (b): Let M_1, M_2, N_1, N_2 be N'-

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KRASNOSEL'SKIĬ, M.A. AND RUTICKIĬ, YA.B.

functions, N_1 complementary to M_1, $M_1(u)=\int_0^{|u|} p_1(t)dt$, $N_1(u)=\int_0^{|u|} q_1(t)dt$ (these representations always [illegible]). Then if there is a set F on the real line R such that $m(R-F)=0$ and such that for some $b>0$

$$\lim\{p_1(q_2(v))/v \mid v \in F,\ v\to\infty\}=b,$$

then $M_1\sim M_2$, $N_1\sim N_2$.

By using the concept of "principal part" of an N'-function M, i.e., a function Q such that $\lim M(u)/Q(u)=a>0$ as $u\to\infty$, and a class $\mathfrak{M}=\{R(u) \mid R(u)\neq 0$ for large u, $R'(u)=r(u)$ exists for large u, and $\lim u(r(u)/R(u))=0$ as $u\to\infty\}$, the following theorem is derived: (Note: $\mathfrak{M}$ contains all functions of the form

$$(\log u)^{\alpha_1}(\log\log u)^{\alpha_2}\cdots\overbrace{(\log\log\cdots\log u)}^{n}{}^{\alpha_n},$$

$\alpha_1, \alpha_2, \cdots \alpha_n$ arbitrary.)

Let M, and N be complementary N'-functions. Let $R(u)\in\mathfrak{M}$, and assume $M(u)R(u)$, resp. $N(u/R(u))R(u)$, are for large u equal to the N' functions Φ, resp Ψ_1. Let $M(u)=\int_0^{|u|} p(t)dt$, $N(u)=\int_0^{|u|} q(t)dt$, and assume $p_1(u)=p(u/R(u))$ and $q_2(u)=q(u/R(u))$ are monotone increasing for large u and that $\lim R(q(u/R(u)))/R(u)=b>0$ as $u\to\infty$. Then $\Psi_1\sim\Psi$ where Ψ is the complementary function of Φ.

More explicit forms for linear functionals over Orlicz spaces are derived.

B. Gelbaum.

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RUTITSKIY, Ya. B.

KRASNOSEL'SKIY, M.A.; RUTITSKIY, Ya.B.

Linear functionals in Orlicz spces. Dokl. AN SSSR 97 no.4:581-584 Ag '54. (MLRA 7:9)

1. Predstavleno akademikom P.A.Aleksandrovym
(Functional analysis) (Spaces, Generalized)

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RUTITSKIY, Ya. B.

Rutickiĭ, Ya. B. Application of Orlicz spaces for the investigation of certain functionals in L^p. Dokl. Akad. Nauk SSSR (N.S.) 105 (1955), 1147–1150. (Russian)

If $f(x, u)$ is defined on $G \times R$, where G is a compact set in finite-dimensional space and R is the real line, and if f is continuous in u for each x and measurable in x for each u, then the operator $f(\phi)=f(x, \phi(x))$ is a mapping from a function space to its conjugate space, whereas $A(\phi)=\int_G K(x, y)f(y, \phi(y))dy$ is an operator of a more general kind. Among others, the following results are to be found: (1) If the operator f maps a sphere of Orlicz space L_M^* into the class L_N, where M and N are complementary N'-functions, then f is the gradient of the functional $F(\phi)=\int_G dx\int_0^{\phi(x)} f(x, s)ds$. (2) If $\int_G\int_G M(Q(K(x, y)))dxdy<\infty$, where K is a positive definite kernel and M and Q are N'-functions, the former satisfying the Δ^2-condition (i.e., $\lim\sup\{M(2u)/M(u) \mid u\to\infty\}<\infty$, and if $|f(x, u)|\leq b+aM(ku)$, then A defined in L_M^* is of the form HH^*f, where H^*fH is the gradient of a weakly continuous functional in L^2 and H is a linear operator from L^2 into L_M^*. (3) If $\|K(x, y)-\sum_1^\infty \phi_i(x)\phi_i(y)/\lambda_i\|_p\to 0$, where $0<\lambda_1<\lambda_2<\cdots$ and ϕ_i are ON in L^2, then the linear operator $B(\phi)=\int_G K(x, y)\phi(y)dy$ is of the form $B=HH^*$, where H is a linear completely continuous operator from L^2 into L^p.

B. Gelbaum (Minneapolis, Minn.).

Zhdanov Metallurgical Inst.

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KUTIS'KIY, Ya. B.

Krasnosel'skiĭ, M. A.; and Rutickiĭ, Ya. B. General theory of Orlicz spaces. Voronež. Gos. Univ. Trudy Sem. Funkcional. Anal. no. 1 (1956), 3–38. (Russian)

A general and thorough exposition of the theory of Orlicz spaces is presented. The main theorems of the subject are stated and proved and many interesting illustrations are provided. Although in its service as a synthesis the paper merits attention, its value to the experienced analyst in the field is limited since few new results (save for elegant reformulations) are given.

B. Gelbaum (Minneapolis, Minn.).

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KUTIOSKIY, Ya. B.

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RUTITSKIY, Ya.B.

A property of completely continuous linear integral operators valid in Orlicz spaces. Usp. mat.nauk 11 no.2:201-208 Mr-Ap '56. (MLRA 9:8)

(Spaces, Generalized) (Functional analysis) (Operators (Mathematics))

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RUTITSKIY, Ya. B.

SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/1 PG - 810
AUTHOR RUTIZKIJ Ja.B.
TITLE On a class of Banach spaces.
PERIODICAL Uspechi mat.Nauk 12, 1, 230-234 (1957)
reviewed 6/1957

The present paper contains some results of the author and Krasnosel'skij on Orlicz-spaces which are defined by functions which do not satisfy the so-called Δ_2-condition

$$\overline{\lim_{n\to\infty}} \frac{M(2u)}{M(u)} < \infty .$$

The results have a fragmentary character; the given problems are solved only in certain special cases.

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20-3-2/52

AUTHOR: KRASNOSEL'SKIY, M.A., RUTITSKIY, Ya.B.

TITLE: On Some Nonlinear Operators in the Orlicz Spaces (O nekotorykh nelineynykh operatorakh v prostranstvakh Orlicha)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 117, Nr. 3, pp. 363-366 (USSR)

ABSTRACT: Let the function $f(x,n)$ $(x \in G, -\infty < u < \infty)$ satisfy the conditions of Caratheodory. Let the operator F be defined by $Fu(x) = f[x,u(x)]$. The authors give conditions under which in a sphere of the Orlicz-space $L^*_M(G)$ this operator is differentiable according to Frechet. Further the operator $K\varphi(x) = \int_G K[x,y,\varphi(y)]\,dy$ is considered. It is shown that under certain conditions it is completely continuous; here the operator may possess also essential non-potential nonlinearities. Conditions are given under which there exists an Orlicz-space in which K is defined and completely continuous. Further the question of the differentiability of the norm in Orlicz-spaces is considered. The results can be extended also to the modulated spaces considered by Nikano. The paper contains six long theorems

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without proofs.
One Soviet and 2 foreign references are quoted.

ASSOCIATION: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)
PRESENTED: By P.S.Aleksandrov, Academician, 30 May 1957
SUBMITTED: 30 May 1957
AVAILABLE: Library of Congress

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RUTITSKIY, Ya. B.

16(1) PHASE I BOOK EXPLOITATION SOV/1455

Krasnosel'skiy, Mark Aleksandrovich, and Yakov Bronislavovich Rutitskiy

Vypuklyye funktsii i prostranstva Orlicha (Convex Functions and Orlicz Spaces) Moscow, Fizmatgiz, 1958. 271 p. (Series: Sovremennyye problemy matematiki) 5,000 copies printed.

Ed.: M.M. Goryachaya; Tech. Ed.: V.N. Kryuchkova.

PURPOSE: This book is intended for mathematicians, senior students, aspirants, and scientific workers concerned with functional analysis and its applications, and also with various problems of the theory of functions.

COVERAGE: This book is one of a series entitled Sovremennyye problemy matematiki (Modern Mathematical Problems), published under the supervision of the editorial staff of the journal Uspekhi matematicheskikh nauk. The book presents the theory of many classes of convex functions and its applications. The material for this theory is taken from various mathematical papers. The general theory of Orlicz spaces is developed, and its applications to the

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study of operators, functionals and nonlinear integral equations are presented. The authors thank G.Ye. Shilov for his assistance in preparing the book. There are 104 references, 72 of which are Soviet, 16 English, 11 German, 3 French, and 2 Italian.

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RUTITSKIY, Ya. B.

PHASE I BOOK EXPLOITATION 1087

Moskovskoye matematicheskoye obshchestvo

Trudy, t. 7 (Transactions of the Moscow Mathematical Society, v. 7) Moscow, Fizmatgiz, 1958. 438 p. 1,500 copies printed.

Editorial Staff: Aleksandrov, P.S.; Gel'fand, I.M. and Golovin, O.N.; Ed.: Lapko, A.F.; Tech. Ed.: Yermakova, Ye.A.

PURPOSE: This book presents original articles submitted to the Moscow Mathematical Society and is intended for specialists in various fields of mathematics.

COVERAGE: Volume 7 contains 12 articles concerning problems in different fields of mathematics, including functional analysis, differential geometry and mathematical logic. All contributions in this volume are Soviet. Most of the articles deal with problems of functional analysis which reflect the present-day status and trend of this branch of mathematics.

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This article was presented at the January 20, 1956 Session of the All-Union Conference on Functional Analysis and its Applications. The article contains the following sections: Introduction; 1) G_{pq} group; parameters and an invariant measure of G_{pq} group;

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Muchnik, A.A. Solution of Post's Reducibility Problem and of Certain Other Problems of the Theory of Algorithms. I. Basic results of the article were presented at the October 16, 1956 session of the Moscow Mathematical Society. The article contains the following sections: Introduction; Ch. I. Functional Representation of Partially Recursive Operators; 1) Cortege and quasi-cortege; 2) Functional representations of operators; 3) Universal partially recursive operator; 4) Calculation [solution] of M - [Medevedev] problems; Ch.II. Decision Problems of Enumerable Sets; I) Semilattices $\mathfrak{A}(p)$; 2) Post's reducibility problem; References. 390

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The basic results given in this article were presented at the December 17, 1957 session of the Moscow Mathematical Society. The article contains the following sections: 1) Introduction; 2) On the correspondence (reducibility) of systems of sets; 3) Effective inseparability; 4) Quasi-effective properties; References.

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KRASNOSEL'SKIY, M.A.; RUTITSKIY, Ya.B. (Voronezh)

Orlicz' spaces and nonlinear integral equations. Trudy Mosk. mat. ob-va 7:63-120 '58. (MIRA 11:8)
(Functional analysis)

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Rutitskiy, Ya. B.

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Trudy. t. 4: Kratkoye soderzhaniye sektsionnykh dokladov. Doklady inostrannykh uchenykh (Transactions of the 3rd All-Union Mathematical Conference in Moscow. vol. 4: Summary of Sectional Reports. Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959. 247 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskiy institut.

Tech. Ed.: G.N. Shevchanko; Editorial Board: A.A. Abramov, V.G. Boltyanskiy, A.M. Vasil'yev, B.V. Medvedev, A.D. Myshkis, S.M. Nikol'skiy (Resp. Ed.), A.G. Postnikov, Yu. V. Prokhorov, K.A. Rybnikov, P. L. Ul'yanov, V.A. Uspenskiy, N.G. Chetayev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

COVERAGE: The book is Volume IV of the Transactions of the Third All-Union Mathematical Conference, held in June and July 1956. The book is divided into two main parts. The first part contains summaries of the papers presented by Soviet scientists at the Conference that were not included in the first two volumes. The second part contains the text of reports submitted to the editor by non-Soviet scientists. In those cases when the non-Soviet scientist did not submit a copy of his paper to the editor, the title of the paper is cited and, if the paper was printed in a previous volume, reference is made to the appropriate volume. The papers, both Soviet and non-Soviet, cover various topics in number theory, algebra, differential and integral equations, function theory, functional analysis, probability theory, topology, mathematical problems of mechanics and physics, computational mathematics, mathematical logic and the foundations of mathematics, and the history of mathematics.

Transactions of the 3rd All-Union (Cont.) SOV/2660

Lobachev, S.V. (Krasnodar). On the generalization of the theory of linear integral equations of N.M. Nazarov 33

Mysovskikh, I.P. (Leningrad). Certain formulas of the Fredholm method and their application to the problem on the evaluation of error of approximate methods of solution of integral equations 34

Myshkis A.D. (Minsk), Ye. G. Gubar' (Mozyr'), and A. Ya. Khokhryakov (Polotsk). Two modifications of the concept of a dynamic system on the plane 35

Panich, O.I. (Odessa). Asymptotic expansions of the solution of partial differential equations in powers of a small parameter at highest derivative 36

Rasulov, M.L. (L'vov). Subtraction method for the solution of boundary value and mixed problems 36

Rutitskiy, Ya. B. (Zhdanov). On integral equations with exponential nonlinearities 37

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

KRASNOSEL'SKIY, M.A.;RUTITSKIY, Ya.B.;SULTANOV, R.M.

On a nonlinear operator acting in spaces of abstract functions.
Izv. AN Azerb. SSR. Ser. fiz.-mat. i tekh. nauk. no.3:15-21 '59
(Operators(Mathematics) (MIRA 13:3)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

KRASNOSEL'SKIY, M.A.; KREYN, S.G.; PINSKIY, Ya.B.; SOBOLEV, V.I.

Mathematical events at Voronezh. Usp. mat. nauk 19 no.3:225-245 My-Je '64. (MIRA 17:10)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTITSKIY, Yu.B.

Certain classes of measurable functions. Dop. nat. nauk. 20 no.4:205-208 Jl-Ag '56. (MIRA 18:8)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTITSKIY, Ya.B. [Rutyts'kyi, IA.B.]

Some theorems from the theory of Orlicz spaces. Dop. AN URSR no.10:1278-1282 '62. (MIRA 18:4)

1. Voronezhskiy inzhenerno-stroitel'nyy institut.

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ACCESSION NR AM4043734 BOOK EXPLOITATION S/ 30 B+1

Vilenkin, N. YA.; Gorin, YE. A.; Kostyuchenko, A. G.; Krasnosel'skiy, M. A.; Krein, S. G.; Maslov, V. P.; Mityagin, B. S.; Petunin, YU. I.; Rutitskiy, YA. B.; Sobolev, V. I.; Stotsenko, V. YA.; Faddeyev, L. D.; Tsitlandze, E. S.

Functional analysis (Funktsional'nyy analiz), Moscow, Izd-vo "Nauka", 1964, 424 p. biblio., index. Errata slip inserted. 17,500 copies printed. Series note: Spravochnaya matematicheskaya biblioteka.

TOPIC TAGS: functional analysis, mathematics, operator equation, quantum mechanics, Hilbert space, Banach space, linear differential equation

PURPOSE AND COVERAGE: This issue in a series of Handbooks of the Mathematical Library contains much material grouped basically around the theory of operators and operator equations. It presents the basic concepts and methods of functional analysis, theory of operators in Hilbert space and in conical space, the theory of nonlinear operator equations, the theory of standard rings applied to equations in partial derivatives, to integral equations. A separate chapter is devoted to the basic operator of quantum mechanics. Citing of the theory of generalized functions takes up a large part of the book. The book explains mathematical facts; theorems and formulas, as a rule, are given

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without proofs. Main attention is given to concepts without excessive detail. The book is intended for mathematicians, mechanical engineers, and physicists. It contains much of value for students and graduate students.

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTITSKIY, Ya.B.

Continuity and complete continuity of matrix operators in coordinate Orlicz spaces. Uch zap. AGU. Ser. fiz.-mat. nauk no.2:29-44 '63. (MIRA 18:1)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

VILENKIN, N.Ya.; GORIN, Ye.A.; KOSTYUCHENKO, A.G.; KRASNOSEL'SKIY, M.A.; KREYN, S.G.; MASLOV, V.P.; MITYAGIN, B.S.; PETUNIN, Yu.I.; RUTITSKIY, Ya.B.; SOBOLEV, V.I.; STETSENKO, V.Ya.; FADDEYEV, L.D.; TSITLANADZE, E.S.; LYUSTERNIK, L.A., red.; YANPOL'SKIY, A.R., red.; GAPOSHKIN, V.F., red.

[Functional analysis] Funktsional'nyi analiz. [By] N.IA. Vilenkin i dr. Moskva, Izd-vo "Nauka," 1964. 424 p. (MIRA 17:6)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTITSKIY, Ya.B.

New characteristics of continuity and complete continuity of integral operators in Orlicz spaces. Izv. vys. uch.zav.; mat. no.5:87-100 '62. (MIRA 15:9)

1. Voronezhskiy inzhenerno-stroitel'nyy institut.
(Operators (Mathematics)) (Spaces, Generalized)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTITSKIY, Ya.B.

Scales of Orlicz spaces and interpolation theorems. Dokl.AN SSSR 149 no.1:32-35 Mr '63. (MIRA 16:2)

1. Voronezhskiy inzhenerno-stroitel'nyy institut. Predstavleno akademikom P.S.Aleksandrovym.
(Banach spaces) (Operators (Mathematics)) (Interpolation)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTITSKIY, Ya.B.

Linear operators in coordinate Orlicz spaces. Dokl.AN SSSR 145 no.6:1232-1234 Ag '62. (MIRA 15:8)

1. Voronezhskiy inzhenerno-stroitel'nyy institut. Predstavleno akademikom P.S.Aleksandrovym.
(Operators (Mathematics)) (Banach spaces)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTITSKIY, Ya.B.

Integral operators in Orlicz spaces. Dokl.AN SSSR 145 no.5: 1000-1003 '62. (MIRA 15:8)

1. Voronezhskiy inzhenerno-stroitel'nyy institut. Predstavleno akademikom P.S.Aleksandrovym.
(Operators (Mathematics)) (Spaces, Generalized)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

KRASNOSEL'SKIY, M.A.; RUTITSKIY, Ya.B.

Some approximate methods for solving nonlinear operator equations with the aid of linearization. Dokl. AN SSSR 141 no.4:785-788 D '61. (MIRA 14:11)

1. Predstavleno akademikom I.N. Vekua.
(Linear equations)
(Approximate computation)

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32503

S/044/61/000/011/026/049
C111/C444

16.4600

AUTHORS: Krasnosel'skiy, M. A., Rutitskiy, Ya. B., Sultanov, R. M.

TITLE: On a non-linear operator, operating in spaces of abstract functions

PERIODICAL: Referativnyy zhurnal, Matematika, no. 11, 1961, 73, abstract 11B397. (Izv. AN. Azerb. SSR. Ser. fiz.-matem. i tekhn. n., 1959, no. 3, 15-21)

TEXT: Investigated are certain properties of the operator

$$fu(t) = f(t,u(t)) \qquad (1)$$

which transforms a subset of a certain Banach space B into another Banach space B_1. One assumes that the abstract function f(t,u) with values in B_1 is strongly measurable for every fixed $u \in B$, and that the operator f(t,u) is strongly continuous with respect to u for almost all $t \in \Omega$; Ω is a bounded closed set of the finite dimensional Euclidian space. In the article it is proved that the theorems on the continuity and boundedness of the operator f which formerly have been proved for the spaces L^p, $L^p_{(u)}$ of vector functions, for Orlicz spaces

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On a non-linear operator, operating . . . C111/C444

etc., hold for broad classes of abstract function spaces. The concept of a "$\varkappa$ - space" is introduced as follows: Let $\check{B}$ be the linear subset of all measurable abstract functions $u(t)$ with values in the Banach space B; let $\check{B}$ be made a complete Banach space by aid of a certain norm $\| \|_{\check{B}}$. The space $\check{B}$ is called "$\varkappa$- space", if the following conditions are satisfied:

1.) There is $\| u \|_{\check{B}} = 0$ if and only if $u(t) = 0$ almost everywhere on Ω;

2.) $\check{B}$ contains all functions taking a constant value on Ω;

3.) $\check{B}$ contains together with the abstract function $u(t)$ all functions $u(t)\varkappa_E(t)$, $\varkappa_E(t)$ being the characteristic function of the measurable set $E \subset \Omega$; there $\| u \varkappa_E \|_{\check{B}} \leq \| u \|_{\check{B}}$;

4.) Out of the condition $\|u\|_{\check{B}} \to 0$ there follows that the functions $u_n(t)$ converge to θ with respect to the norm.

The authors investigate certain properties of the introduced $\varkappa$- space under certain additional conditions and prove the continuity of the

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On a non-linear operator, operating . . . C111/C444

operator f, transforming a subset of $\check{B}$ into $\check{B}^{o}$, where $\check{B}^{o}$ is the set of those functions of $\check{B}$ which have absolutely continuous norms. It is said that an abstract function $u(t) \in \check{B}$ possesses an absolutely continuous norm, if $\| u \varkappa_E \|_{\check{B}} \to 0$ for mes $E \to 0$. Further on it is proved that the operator f is bounded in every sphere $T_s \subset \check{B}_o$. At the end of the paper the case mes $\Omega = \infty$ is considered.

[Abstracter's note: Complete translation.]

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32299
S/020/61/141/004/003/019
C111/C222

16.4100

AUTHORS: Krasnosel'skiy, M.A., and Rutitskiy, Ya.B.

TITLE: Some approximate methods of solving non-linear operator equations by linearization

PERIODICAL: Akademiya nauk SSSR. Doklady, v.141, no. 4, 1961, 785-788

TEXT: If $P(x)$ is a non-linear operator of the Banach space E into the Banachspace E_1, and if $P(x)$ in an open sphere $\Omega \subset E$ has the Frechet derivative $P'(x)$ then

$$P(x) = 0 \tag{1}$$

can be solved approximately by taking the solutions of the linearized equation

$$P'(x_{n-1})(x - x_{n-1}) + P(x_{n-1}) = 0 \tag{2}$$

as successive approximations x_n. This equation, however, mostly cannot be solved rigorously.

Let the approximate solution of the linear equation

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$$Bx = b \tag{3}$$

be carried out with any fixed method. The transition from the initial approximation x_0 to the "better" approximation x_1 defines a certain non-linear operator

$$x_1 = V(x_0 ; B, b) \quad . \tag{4}$$

Applying (4) successively for the solution of the linearized equation (2) then one obtains the iteration process

$$x_n = V(x_{n-1}; P'(x_{n-1}), P'(x_{n-1})x_{n-1} - P(x_{n-1})) \quad . \tag{5}$$

In the present paper the authors investigate the convergence of (5). It is assumed that on Ω the Hölder condition $\|P'(x_1) - P'(x_2)\| \leq k\|x_1 - x_2\|^{\alpha}$ $(0 < \alpha < 1)$ is satisfied and that for all $x_0 \in \Omega$ the approximate solution $V(x_0) = V(x_0 ; P'(x_0), P'(x_0)x_0 - P(x_0))$ and the rigorous solution $\tilde{x}$ of the linear equation

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OTHER: 000

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ACCESSION NR: AT4036040

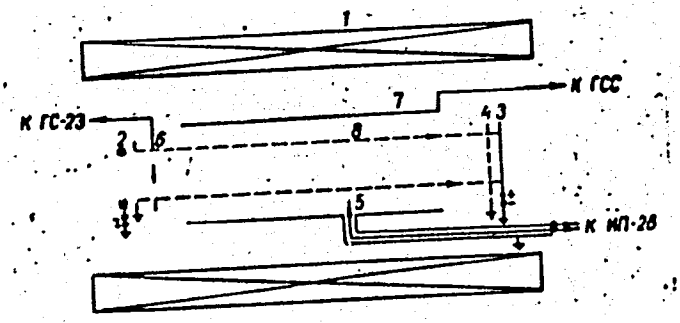

Diagram of experimental set-up

1 - solenoid, 2 -electron gun, 3 - collector, 4 - grid, 5 - moving probe, 6 - modulating electrode, 7 - capacitor plates enclosing the beam, 8 - hollow electron beam

Card 5/5

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

FEDORCHENKO, V.D.; MURATOV, V.I.; HUTKEVICH, B.N.

High-frequency oscillations of a plasma in a magnetic field. Zhur. tekh.fiz. 34 no. 3:458-462 Mr '64.

Use of a probing beam in studying high-frequency plasma oscillations in a magnetic field. Ibid.:463-468 (MIRA 17:5)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

SINEL'NIKOV, Kirill Dmitriyevich; RUTKEVICH, Boris Nikolayevich; BOROVIK, Ye.S., prof., otv. red.; VAYNBERG, D.A., red.

[Lectures on plasma physics] Lektsii po fizike plazmy. Khar'kov, Izd-vo Khar'kovskogo gos. univ. im. A.M.Gor'kogo, 1964. 241 p. (MIRA 17:7)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

S/0057/64/034/003/0463/0468

ACCESSION NR: AP4020574

AUTHOR: Fedorchenko, V.D.; Muratov, V.I.; Rutkevich, B.N.

TITLE: Investigation of the high frequency oscillations of a plasma in a magnetic field by means of an electron beam probe

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.3, 1964, 463-468

TOPIC TAGS: electron beam, plasma diagnostics, rarefied plasma, electron beam oscillation, rarefied plasma oscillation, electron beam probe, magnetic trap

ABSTRACT: The high frequency oscillations produced when an electron beam, in the presence of a longitudinal magnetic field, traverses a chamber in which the residual gas pressure is between 10^{-5} and 10^{-6} mm Hg (V.D.Fedorchenko, V.I.Muratov and B.N.Rutkevich,ZhTS,34,458,1964 - see Abstract AP4020573) were investigated with a longitudinal electron beam probe. The exciting beam was 2 cm in diameter, 50 cm long, and carried 25 to 50 mA of 200 to 300 V electrons. The electron gun was located within the magnetic field (up to about 2500 Oe) and produced a hollow beam, along the axis of which the 1 mm diameter 10 to 15 microampere probe beam was directed. The energy of the electrons in the probe beam could be varied from 0 to 400 V.

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ACCESSION NR: AP4020574

After traversing the chamber, the probe beam passed through an opening in the center of the collector electrode and was analyzed with a retarding field. The motion of an electron in a traveling wave field is analyzed and it is shown that both the propagation velocity and the amplitude can be obtained from an analysis of the energy changes in the longitudinal probe beam. The propagation velocity of the high frequency oscillations was found to be 5.7×10^8 cm/sec (in agreement with the earlier wavelength measurements, loc.cit.supra) and amplitudes as great as 7 v/cm were observed. The oscillations were found to give rise to considerable velocity dispersion also in the exciting beam. Electrons were found to leave the plasma through the opening in the collector electrode (in the absence of the probe beam). These electrons had energies ranging up to more than 200 V. This electron loss, presumably due to the high frequency oscillations, should result in a positively charged plasma. Loss of ions was expected, especially at low magnetic fields, as a result of the low frequency transverse ion oscillations that occur in such systems (vide loc. cit.supra). Such a loss of ions to the walls of the chamber was observed. It was concluded, therefore, that the plasma potential should be negative at low magnetic fields and positive at high fields. This behavior was verified by hot probe measurements of the plasma potential within the hollow electron beam. It is suggested that

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ACCESSION NR: AP4020574

this phenomenon may be involved in the behavior of certain types of magnetic trap. "The authors express their gratitude to K.D.Sinel'nikov, Ya.B.Faynberg and B.G.Safronov for discussing the results." Orig.art.has: 7 formulas and 11 figures.

ASSOCIATION: none

SUBMITTED: 15Mar63 DATE ACQ: 31Mar64 ENCL: 00

SUB CODE: PH NR REF SOV: 003 OTHER: 000

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

SINEL'NIKOV, K.D.; SAFRONOV, B.G.; FEDORCHENKO, V.D.; RUTKEVICH, B.N.; CHERNYY, B.M.

[Study of a magnetic trap with a volume charge] Issledovanie magnitnoi lovushki s ob"emnym zariadom. Khar'kov, Fiziko-tekhn. in-t AN USSR, 1960. 243-254 p. (MIRA 17:5)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

ACCESSION NR: AP4020573 S/0057/64/034/003/0458/0462

AUTHOR: Fedorchenko, V.D.; Muratov, V.I.; Rutkevich, B.N.

TITLE: On high frequency oscillations of a plasma in a magnetic field

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.3, 1964, 458-462

TOPIC TAGS: electron beam, plasma, rarefied plasma, electron beam oscillations, rarefied plasma oscillations

ABSTRACT: Oscillations of an electron beam in a longitudinal magnetic field of 200 to 300 Oe have previously been observed (V.D.Fedorchenko, V.I.Muratov, B.N.Rutkevich and V.M.Cherny*y,ZhTF,32,958,1962). These oscillations occurred at two widely different frequencies: approximately 100 kc and from 25 to 50 Mc. The low frequency oscillations have been ascribed to transverse motion of residual gas ions in the space charge field of the beam, and the high frequency oscillations are thought to be longitudinal plasma oscillations. The present paper reports an investigation of these phenomena in stronger magnetic fields, up to 3000 Oe. The electron beam was 2 cm in diameter, 50 cm long, and carried 25 to 50 mA of 200 to 300 V electrons. The pressure in the chamber was varied from 10^{-5} to 10^{-6} mm Hg. The oscillations

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were observed by means of a movable probe located near the beam but outside it. As anticipated, the use of the stronger magnetic field considerably decreased the intensity of the low frequency component and increased that of the high frequency component. Varying the magnetic field strength, the residual gas pressure, and the electron beam energy were found to alter the rather complex spectrum of the high frequency component. For example, increasing the electron energy from 200 to 300 V increased the peak frequency from 30 to 47 Mc and decreased the peak intensity by a factor 2.5. It was found that when secondary emission from the beam collector was suppressed by an appropriately charged grid, the intensity of the high frequency oscillations decreased greatly. It is conjectured that secondary emission is somehow involved as a feedback mechanism in maintaining the oscillations. The presence of standing waves was established, the phase velocity being 6×10^8 cm/sec. The electron beam was velocity modulated by applying a high frequency signal to an appropriate electrode. Signals at both the low and the high resonant frequencies were amplified. When the low frequency oscillations were increased in amplitude by modulating the beam at their resonant frequency (approximately 100 kc), the amplitude of the high frequency oscillations correspondingly decreased. "The authors are very grateful to K.D.Sinel'nikov, Ya.B.Faynberg and B.G.Safronov for valuable dis-

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cussions." Orig.art.has: 12 figures.

ASSOCIATION: none

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

SINEL'NIKOV, K.D.; RUTKEVICH, B.N.; FEDORCHENKO, V.D.

[Motion of charged particles in a space-periodic magnetic field] Dvizhenie zariazhennykh chastits v prostranstvenno-periodicheskom magnitnom pole. Khar'kov, Fiziko-tekhn. in-t AN USSR, 1960. 229-242 p.
(MIRA 17:2)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

SINEL'NIKOV, K.D.; RUTKEVICH, B.N.; SAFRONOV, B.G.; SELIVANOV, N.P., otv.za vyp.

[Nonadiabatic traps for charged particles] Neadiabaticheskie lovushki zariazhennykh chastits. Khar'kov, Fiziko-tekhn. in-t AN USSR, 1960. 479-494 p. (MIRA 17:2)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

S/781/62/000/000/024/036

AUTHORS: Sinel'nikov K. D., Rutkevich B. N., Safronov B. G.

TITLE: Nonadiabatic traps for charged particles

SOURCE: Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza; doklady I konferentsii po fizike plazmy i probleme upravlyayemykh termoyadernykh reaktsiy. Fiz.-tekhn. inst. AN Ukr. SSR. Kiev, Izd-vo AN Ukr. SSR, 1962, 113-123

TEXT: Nonideal traps, which do not retain the plasma over an infinitely long time, are discussed from the point of view of the extent to which they can be made close to ideal in the limit. Different analogies with optical multiple-reflection systems are pointed out, along with their analogues in plasma geometry. It is shown that it is possible to construct a nonadiabatic trap, the "idealness" of which is completely determined by the degree to which the particles entering the trap are parallel to one another. The effect of the magnetic smoothness of the channel and trap walls is discussed, with particular attention to the "picket-fence" configuration as one special type of roughness. Another type of trap is also discussed, in which deviation from ideal behavior is determined entirely by

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Nonadiabatic traps for charged particles. S/781/62/000/000/024/036

the deviation from monochromaticity of the beam of injected particles. Only very general assumptions are made with respect to the traps, and it is pointed out that neglect of the space charge may lead to other conclusions. There are six figures. The only reference is to work by Christofilos (cited in Russian translation), and it is pointed that his parametric-resonance method for particle injection into a trap can also lead to a nonideal trap that approaches ideal as heat is released in the additional loops located inside the trap.

Card 2/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

FEDORCHENKO, V.D.; RUTKEVICH, B.N.; MURATOV, V.I.; CHERNYY, B.M. [deceased]

Low-frequency plasma oscillations in a magnetic field. Zhur.tekh. fiz. 32 no.8:958-966 Ag '62. (MIRA 15:8)
(Plasma oscillations)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

SINEL'NIKOV, K.D.; FEDORCHENKO, V.D.; RUTKEVICH, B.N.; CHERNYY, B.M.; SAFRONOV, B.G.

Investigation of a magnetic trap. Zhur.tekh.fiz. 30 no.3:256-260 Mr '60. (MIRA 14:8)

1. Fiziko-tekhnicheskiy institut AN USSR, Khar'kov.
(Electrons--Capture) (Magnetic fields)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

SINEL'NIKOV, K.D.; RUTKEVICH, B.N.; FEDORCHENKO, V.D.

Movement of charged particles in a spatial periodic magnetic field. Zhur.tekh.fiz. 30 no.3:249-255 Mr '60. (MIRA 14:8)

1. Fiziko-tekhnicheskiy institut AN USSR, Khar'kov.
(Dynamics of a particle) (Magnetic fields)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTKEVICH, B.N.

Instability of a system of two electron beams in a magnetic field.
Zhur.tekh.fiz. 31 no.5:539-548 My '61. (MIRA 14:7)

1. Fiziko-tekhnicheskiy institut AN USSR, Khar'kov.
(Electron beams) (Magnetic fields)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

1. BUKHMAN, M. M.; RUTKEVICH, I. G.

2. USSR (600)

4. Metal Spraying

7. Using metal spraying in repairing equipment. Masl. zhir. prom. 17 no. 6 1952.

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

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTKEVICH, I.G., inzhener; BUKHMAN, M.M., inzhener.

Automatic control of water gas and hydrogen gas producers.
Masl.-zhir.prom. 22 no.8:14-19 '56. (MLRA 10:1)

1. Giprozhir (for Rutkevich). 2. Rosglavraszhimaslo (for Bukhman).
(Gas producers) (Water gas) (Hydrogen)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

L 17838-66 EWP(m)/EWT(1)/T-2 IJP(c)

ACC NR: AP6004072 SOURCE CODE: UR/0040/65/029/005/0870/0878

AUTHORS: Regirer, S. A. (Moscow); Rutkevich, I. M. (Moscow)

ORG: none

67
B

21,44,55 1,44,55

TITLE: Electric field in a magnetohydrodynamic channel where the medium moves with variable electric conductivity

SOURCE: Prikladnaya matematika i mekhanika, v. 29, no. 5, 1965, 870-878

TOPIC TAGS: MHD, electric field, electric conductivity, periodic function, magnetic field, electric potential

ABSTRACT: The electric field inside an MHD channel is calculated for the case of a periodically varying electric conductivity given by

$$\sigma = \sigma_0 \psi (x - Ut) = \sigma_0 \psi (x + \lambda - Ut).$$

For a small magnetic Reynolds number the governing equation for the electric potential is given by

$$\frac{\partial^2 \varphi}{\partial x^2} + \frac{\partial^2 \varphi}{\partial y^2} + \frac{\psi'}{\psi} \frac{\partial \varphi}{\partial x} = 0, \quad j_x = -\sigma \frac{\partial \varphi}{\partial x}, \quad j_y = -\sigma \left(\frac{\partial \varphi}{\partial y} + \frac{UB}{c} \right).$$

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The boundary conditions are

$$\frac{\partial\varphi}{\partial y} = -\frac{UB}{c} \quad \text{at } y = \pm\delta, \quad \nabla\varphi \to 0 \quad \text{at } |x| \to \infty .$$

To solve the above equation for the electric potential, the following auxiliary potential is introduced $\Phi = \varphi + UBy/c$, which allows for the series solution

$$\Phi = \sum_{k=1}^{\infty} \Phi_k(x, t) \sin \alpha_k y, \qquad \alpha_k = \pi(k - 1/2) .$$

This solution is discussed in detail for the case where the conductivity of the media is given by $\psi = \cos^2 \beta\xi$. The general solution in this case is shown to be discontinuous and expressed by

$$\Phi_k = \frac{1}{\cos\beta\xi}[(C_{nk} - G_{nk}) e^{\gamma_k \beta\xi} + (D_{nk} + H_{nk}) e^{-\gamma_k \beta\xi}], \qquad x \in [x_{n-1}, x_n]$$

where

$$C_{nk} = -(2 \operatorname{sh} \pi\gamma_k)^{-1} [G_{nk}(x_{n-1}) e^{-\gamma_k \pi} + H_{nk}(x_n) e^{-2\gamma_k \pi n}]$$

$$D_{nk} = (2 \operatorname{sh} \pi\gamma_k)^{-1} [G_{nk}(x_{n-1}) e^{2\gamma_k \pi n} + H_{nk}(x_n) e^{-\gamma_k \pi}].$$

This in turn is shown to satisfy the condition at infinity in the form

$$\lim_{|n| \to \infty} \Phi_k \{x \in [x_{n-1}, x_n]\} = 0 .$$

Physically, the effect of a discontinuous tangential component in the electric

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ACC NR: AP6004072

field can be due to the existence of an infinitely thin layer with nonzero electric resistivity. A special case is considered where the magnetic field is a step function given by

$$f(x) = \eta(x) = \begin{cases} 0 & \text{at } x < 0, \\ 1 & \text{at } x > 0, \end{cases} \qquad f'(x) = \delta(x), \quad f''(x) = \delta'(x),$$

The resulting electric field potential for $|t| < 1/2$ is given by

$$\Phi_k = \begin{cases} 0 & \text{at } x > x_0 \text{ and } x < x_{-1} \\ K^-[\gamma_k \cos \pi t \operatorname{ch} \gamma_k (\pi t + {}^1/_2\pi) + \sin \pi t \operatorname{sh} \gamma_k (\pi t + {}^1/_2\pi)] & \text{at } x_{-1} < x < 0 \\ K^+[\gamma_k \cos \pi t \operatorname{ch} \gamma_k (\pi t - {}^1/_2\pi) + \sin \pi t \operatorname{sh} \gamma_k (\pi t - {}^1/_2\pi)] & \text{at } 0 < x < x_0 \end{cases}$$

$$K^{\pm} = \frac{\omega_k}{\gamma_k \operatorname{sh} \pi\gamma_k \cos \beta\xi} \operatorname{sh} \gamma_k \left(\pi t \pm \frac{\pi}{2} - \beta x\right)$$

from which the joule dissipation can be calculated. Orig. art. has: 33 equations and 3 figures.

SUB CODE: 20/ SUBM DATE: 27May65/ ORIG REF: 005/ OTH REF: 001

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTKEVICH, M. N.

USSR/Miscellaneous - Malthusian doctrine

Card 1/1 : Pub. 86 - 6/36

Authors : Korostelev, G. M., and Rutkevich, M. N.

Title : Against the Malthusian slander on nature

Periodical : Priroda 43/8, 47-54, Aug 1954

Abstract : Statistics and other factors, are used to prove that the Malthusian theory is false. Table.

Institution : ...

Submitted : ...

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTKEVICH, M.N.

Forms of the motion of matter, consciousness, and cybernetics. Filos. vop. fiz. i khim. no. 1:63-72 '59. (MIRA 14:2)
(Cybernetics) (Consciousness) (Matter)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

IOVCHUK, M.T., red.; KRUZHKOV, V.S.; PRUDENSKIY, G.A.; RUTKEVICH, M.N., prof.; IGITKHANYAN, M.Kh., kand.filosof.nauk; KOGAN, L.N., kand.filosof.nauk; ASHEKO, L., red.; CHEREMNYKH, I., mladshiy red.; ULANOVA, L., tekhn.red.

[Development of the cultural and technological level of the Soviet working class] Pod"em kul'turno-tekhnicheskogo urovnia sovetskogo rabochego klassa. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1961. 550 p. (MIRA 14:6)

1. Chleny-korrespondenty AN SSSR (for Iovchuk, Kruzhkov, Prudenskiy).
(Labor and laboring classes)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

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Kutkevich, V.G.

3(5) PHASE I BOOK EXPLOITATION SOV/2172

Akademiya nauk SSSR. Mezhduvedomstvennaya postoyannaya komissiya po zhelezu

Zhelezorudnyye mestorozhdeniya Altaye-Sayanskoy gornoy oblasti, tom. 1, kniga. 1: Geologiya (Iron Ore Deposits of the Altay-Sayan Mountain Region, Vol 1, Book 1: Geology) Moscow, 1958. 330 p. (Series: Zhelezorudnyye mestorozhdeniya SSSR) Errata slip inserted. 2,500 copies printed.

Additional Sponsoring Agencies: Akademiya nauk SSSR. Sibirskoye otdeleniye, USSR. Gosudarstvennaya planovaya komissiya. Glavnoye upravleniye nauchno-issledovatel'skikh i proyektnykh organizatsiy, Institut Giproruda, USSR. Ministerstvo geologii i okhrany nedr, USSR. Zapadno-Sibirskoye geologicheskoye upravleniye, USSR. Krasnoyarskoye geologicheskoye upravleniye, Sibirskiy geofizicheskiy trest, Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.

Eds. of the vol.: P. Ye. Sledzyuk, and G.A. Sokolov; Resp. Ed. of Series: I.P. Bardin, Academician; Scientific Eds.: I.P. Bardin, Academician, T.F. Gorbachev, A.L. Dodin, N.A. Yerofeyev, A.S. Kalugin, N.N. Nekrasov, G.L. Pospelov, M.L. Skobnikov, P. Ye. Sledzyuk, S.S. Smirnov-Verin (Deceased) G.A. Sokolov, S.G. Strumilin, Academician, V.B. Khlebnikov, N.A. Chinakal, and I.S. Shapiro; Ed. of Publishing House: I.G. Kudasheva; Tech. Ed.: I.F. Kuz'min.

PURPOSE: This book is intended for structural, exploration and mining geologists, for geophysicists and mineralogists, and industrial planners.

COVERAGE: This work purports to be the first attempt to review and summarize all the material that has been published on the iron-ore deposits of the Altay-Sayanskaya oblast' during the last 20 years. This area, the work reports is fast becoming one of the most important iron-ore bases in the Soviet Union. The book discusses the economic aspects of the geography and geology of the individual deposits, presents a qualitative and quantitative (as of January 1, 1957) analysis of ore reserves, and evaluates the prospects and possibilities of further development of the Altay-Sayanskaya iron-ore base. The genetic characteristics of iron-ore mineralization of the area are described. Extensive information on the geology of individual deposits, complexes, and regions is provided, and a general genetic description of ore mineralization in the Altay Sayanskaya region is given. There is a historical account of the exploration and development of the region, and of the development of concepts on the genesis of mineralization in the area. The following scientists participated in the preparation and writing of this volume: G.L. Pospelov, S.S. Lapin, N.Kh. Selous. V.M. Klyarovskiy, O.G. Kine, and V.A. Vakhrushev of the West Siberian Branch of the AN SSSR, I.S. Shapiro of the Permanent Interdepartmental Committee on Iron, A.S. Kalugin, A.S. Mukhin, N.A. Garnets, Yu. A. Speyt, M.I. Selivestrova, V.G. Kutkevich, G.P. Bykov, N.I. Nikonov, and K.G. Sakovich of the West Siberian Geological Administration V.I. Medvedkov, A.S. Aladyshkin and F. Ya. Pan of the Krasnoyarsk Geological Administration, M.G. Rusanov, E.A. Yazbutis, Yu. V. Rozhdestvenskiy, G. Ye. Savitskiy, and A.D. Prodanchuk of the West Siberian Geological Survey Chermetrazvedka Trust, P.A. Lysenko, T.I. Lebedev, T.Ya. Kamenskaya, A.I. Maslennikov and R. Pipar of the Siberian Geophysical Trust, A.L. Bodin of the VSEGEI, A.S. Mitropol'skiy of the Mining Expedition, V.A. Lukin of the Mining Administration of the Kuznetsk Metallurgical Combine, S.S. Zimin of the Tomsk Polytechnic Institute, I.V. Derbikov of the Sibneftegeofizika Trust, and V.G. Korel' of the Siberian Metallurgical Institute. There are 103 diagrams including insert maps and 10 tables. There are 271 references, all Soviet.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTKEVICH, V.G.

POSPELOV, G.L., starshiy nauchnyy sotrudnik; LAPIN, S.S.; BELOUS, N.Kh.; KLYAROVSKIY, V.M.; KINE, O.G.; VAKHRUSHEV, V.A.; SHAPIRO, I.S., starshiy nauchnyy sotrudnik; KALUGIN, A.S.; MUKHIN, A.S.; GARNETS, N.A.; SPEYT, Yu.A.; SELIVESTROVA, M.I.; RUTKEVICH, V.G.; BYKOV, G.P.; NIKONOV, N.I.; SAKOVICH, K.G.; MEDVEDKOV, V.I.; ALADYSHKIN, A.S.; PAN, F.Ya.; RUSANOV, M.G.; YAZBUTIS, E.A.; ROZHDESTVENSKIY, Yu.V.; SAVITSKIY, G.Ye.; PRODANCHUK, A.D.; LYSENKO, P.A.; LEBEDEV, T.I.; KAMENSKAYA, T.Ya.; MASLENNIKOV, A.I.; PIPAR, R.; DODIN, A.L.; MITROPOL'SKIY, A.S.; LUKIN, V.A.; ZIMIN, S.S.; KOREL', V.G.; DERBIKOV, I.V.; BARDIN, I.P., akademik, nauchnyy red.; GORBACHEV, T.F., nauchnyy red.; YEROFEYEV, N.A., nauchnyy red.; NEKRASOV, N.N., nauchnyy red.; SKOBNIKOV, M.L., nauchnyy red.; SMIRNOV-VERIN, S.S., nauchnyy red. [deceased]; STRUMILIN, S.G., akademik, nauchnyy red.; KHLEBNIKOV, V.B., nauchnyy red.; CHINAKAL, N.A., nauchnyy red.; SLEDZYUK, P.Ye., red.toma; SOKOLOV, G.A., red.toma; BOLDYREV, G.P., red.; VOGMAN, D.A., red.; KASATKIN, P.F., red.; KUDASHEVA, I.G., red.izd-va; KUZ'MIN, I.F., tekhn.red.

[Iron-ore deposits of the Altai-Sayan region] Zhelezorudnye mestorozhdeniia Altae-Saianskoi gornoi oblasti. Vol.1. Book 1. [Geology]

(Continued on next card)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

POSPELOV, G.L.---(Continued) Card 2.

Geologiia. Otvetstvennyi red. I.P. Bardin. Moskva. 1958. 330 p. (MIRA 12:2)

1. Akademiya nauk SSSR. Mezhduvedomstvennaya postoyannaya komissiya po zhelezu. 2. Postoyannaya mezhduvedomstvennaya komissiya po zhelezu Akademii nauk SSSR (for Pospelov, Shapiro, Sokolov). 3. Zapadno-Sibirskiy filial Akademii nauk SSSR (for Vakhrushev, Pospelov.) 4. Zapadno-Sibirskoye geologicheskoye upravleniye (for Sakovich). 5. Krasnoyarskoye geologicheskoye upravleniye (for Pan). 6. Zapadno-Sibirskiy geologo-razvedochnyy trest Chermetrazvedka (for Prodanchuk). 7. Sibirskiy geofizicheskiy trest (for Pipar). 8. Vsesoyuznyy geologicheskiy nauchno-issledovatel'skiy institut (for Dodin). 9. Gornaya ekspeditsiya (for Mitropol'skiy). 10. Gornoye upravleniye Kuznetskogo metallurg.kombinata (for Lukin). 11. Tomskiy politekhnicheskiy institut (for Zimin). 12. Sibirskiy metallurg.institut (for Korel'). 13. Trest Sibneftegeofizika (for Derbikov). (Altai Mountains--Iron ores) (Sayan Mountains--Iron ores)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTKEVICH, I.S.; RUTKEVICH, V.G.

Zonality in the Pykhtun iron ore deposit in Gornaya Shoriya.
Geol. i geofiz. no.4:130-132 '60. (MIRA 13:9)

1. Zapadno-Sibirskoye geologicheskoye upravleniye.
(Gornaya Shoriya--Iron ores)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTKIEWICZ J. Linie rozwojowe zamknietej pomocy leczniczej, The evaluation of institutional medical care, Polski Tygodnik Lekarski, Warsaw 1949, 4/29-30 (871-875)

The Polish system of hospitals and sanatoriums was badly damaged by war hostilities and by the German occupation. The postwar efforts of the Polish Government have improved it to the extent that there are at present 80,732 beds in general hospitals, 10,834 beds in psychiatric hospitals, and 13,000 beds in sanatoriums. The good epidemiological situation in Poland will permit of rearranging the disposition of hospital beds in the infectious wards and increasing the number of beds for tuberculosis and many other diseases. Especially important is the development of hospital care for maternity cases and for infants, the mortality of the former being 4 per thousand, and of the latter 15 per hundred (in the first year of age). The new sanitary law creates a common organization of hospitals for the whole of Poland. The most important feature of it is the coordination of hospital and infirmary care for patients, the hospital physicians being also heads of Health Centres and dispensaries. The rehabilitation of chronic patients and occupational therapy are stressed as very important trends in the present-day Polish Health Service.

Makower - Wroclaw

So: Medical Microbiology and Hygiene, Section IV, Vol 3, No 1-6

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

RUTKEVICH, M.

"The Distribution of the Work Function on a Partly Covered Surface of the Film Cathode," Zhur. Eksper. i Teoret, Fiz., 9, No. 11, 1939. Mbr. Chair Theoretical Physics & Electrophysics, Kiev State Univ. im. T.G. Shevchenko, -1939-.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

ANDREYEV, I.D., red.; ARKHANGEL'SK, L.M., red.; RUTKEVICH, M.N., red.; STEMPKOVSKAYA, V.I., red.; VIKTOROVA, V., red.; CHEREMNYKH, I., mladshiy red.; NOGINA, N., tekhn.red.

[Practice as the criterium of scientific truth] Praktika - kriterii istiny v nauke. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1960. 461 p. (MIRA 14:3)
(Science--Philosophy)

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MUTKEVICH, M N

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Die Praxis Als Grundlage Der Erkenntnis Und Als Kriterium Der Wahrheit. Berlin, Dietz, 1957.
259 p.
Translation From the Russian: Prakti-da-osnova Poznaniya I Kriteriya Instiniy, Moskva, 1952 P. 241-257: W. M. Podossetnik: Über Die Stufen Des Erkenntnis-prozesses.
Bibliographical Footnotes.

OR

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446210003-0

SOV-3-58-10-9/23

AUTHOR: Rutkevich, M.N., Docent.

TITLE: To Increase the Role of Basic Departments (Podnyat' rol' opornykh kafedr)

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 10, pp 48 - 53 (USSR)

ABSTRACT: About 3 years ago, basic departments in KPSS history, political economy and philosophy were established at important vuz centers. In several cities, these chairs are successfully coordinating and encouraging the research activity of the vuzes personnel. Yet, some of the basic departments have not gone beyond the limits of their own vizes, and are not organizing scientific and methodical work within their particular city. This article reports on the experience of 2 basic departments - that of philosophy (Urals University) and of political economy (Saratov University). The Chair of Philosophy has realized a coordination of the scientific-research work by philosophy instructors of the city's and Oblast's higher schools, and is training and increasing the qualification of instructors. However, more should be done in cities with important vuzes and basic departments. The university's staff should assist in raising the theoretical level of scientific workers, discussing questions of

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method, etc. For the realization of these tasks a city seminar of instrucotrs in social sciences has been successfully operating for several years in Sverdlovsk. It consists of 3 sections: history of the KPSS, political economy and philosophy, which are led by the basic departments. The author describes the activity of the philosophical section which invited the professors M.T. Iovchuk and Ts. A. Stepanyan from Moscow to deliver lectures. Lectures were also delivered by the Candidate of Physical-Mathematical Sciences A.K. Kikoin, Doctor of Physical-Mathematical Sciences N.A. Krasovskiy, Candidates of Biological Sciences V.V. Yurkevich and A.T. Mokronosov, Professors V.S. Kruzhkov and G.A. Kursanov and Docent Koshurnikov (Pedagogical Institute).

ASSOCIATION: Ural'skiy gosudarstvennyy universitet imeni A.M. Gor'kogo (Urals State Unifversity imeni A.M. Gor'kiy)

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1. Candidate Medical Sciences. 2. Of the Department of Traumatology (Head--Honored Worker in Science Prof.M.O.Fridland), Central Institute for the Advanced Training of Physicians attached to the Hospital imeni Botkin, Moscow.

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RUTKEVICH, N.L., doktor med.nauk

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1. Iz kafedry travmatologii i ortopedii (zav. - prof. D.K. Yazykov) TSentral'nogo instituta usovershenstvovaniya vrachey (dir. - doktor med.nauk V.P. Lebedeva)
(SKIN TRANSPLANTATION
homografts from cadavers, indic. & technic (Rus))

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RUTKEVICH, N.L.

VINTSENTINI, K.M., dotsent, BELOVA, A.M., kand.med.nauk, RUTKEVICH, N.L., doktor med.nauk, LIPSKIY, Ye.B., kand.med.nauk

Dmitrii Ksenofontovich LAzykov; on his 60th birthday. Ortop. travm. i protez 19 no.2:83-84 Mr-Ap '58 (MIRA 11:5)
(IAZYKOV, DMITRII KSENOFONTOVICH, 1898-)

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RUTKEVICH, N.L., doktor med.nauk

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1. Iz kafedry travmatologii i ortopedii (zav. - prof. D.K. Yazykov) TSentral'nogo instituta usovershenstvovaniya vrachey (dir. - prof. V.P. Lebedeva).
(FEMUR, fract.
fixation with Dubrov nail (Rus))

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Results of the clinical testing of apparatus, instruments and materials from the Research Institute for Experimental Surgical Apparatus and Instruments in an orthopedic clinic. Trudy NIIEKHAI no.5:277-280 '61. (MIRA 15:8)

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(ORTHOPEDIC APPARATUS)

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EXCERPTA MEDICA Sec 6 Vol 13/9 Surgery Sept. 59

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4948. TRANSPLANTATION OF SKIN FROM CADAVER; INDICATIONS AND TECHNIQUE (Russian text) - Rutkevich N. L. - ORTOP. TRAUM. PROTEZ. 1958, 19/2 (32-38) Tables 2 Illus. 5

Cadaver skin was utilized in 148 wounds on 77 patients, 213 grafting procedures having been made in all. The technique of taking and storing the skin is given in detail. Cadaver skin has the advantage of stimulating the healing processes in the wound, thus accelerating the recovery of the patient. Discharging wounds were also grafted successfully. A great advantage of the method is that it provides amounts of skin which cannot be obtained by autografts. The technique of autografting is also more complicated.

Boytchev - Sofia (IX, 19*)

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1.Stalinskaya shkola No.3 (for Pokrovskiy).2.Pervaya srednyaya shkola (for Rutkevich).
(Physics--Experiments)

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RUTKEVICH, N.V. (g. Izyaslav, Khmel'nitskaya oblast'); MAKHORTOV, M.A.

Useful advice. Fiz. v shkole 16 no.6:64-65 N-D '56. (MLRA 9:12)

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(Physics--Experiments)

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L 9225-66 EWP(e)/EWT(m)/T/EWP(t)/EWP(b)/EWA(m)-2 IJP(c) JD
ACC NR: AP5026096 SOURCE CODE: UR/0386/65/002/005/0213/0215

AUTHOR: Shumilov, S. N.; Klyucharev, A. P.; Rutkevich, N. Ya.

ORG: Physicotechnical Institute, Academy of Sciences UkrSSR (Fiziko-tekhnicheskiy institut Akademii nauk UkrSSR)

TITLE: Pickup of a deuteron and an Alpha particle in the interaction between B^{10} and O^{16}

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. (Prilozheniye) v. 2, no. 5, 1965, 213-215

TOPIC TAGS: deuteron reaction, Alpha particle reaction, boron, oxygen, carbon, nucleon interaction, nuclear emulsion

ABSTRACT: A rather large number of four-prong stars was observed in a study of the interaction between B^{10} ions and emulsion nuclei, three of the prongs being tracks of α particles and the fourth the track of a heavier particle. Type NIKFI-D nuclear emulsions 400 μ thick were bombarded with B^{10} ions accelerated to 100 Mev in a linear accelerator. The B^{10} ions entered the emulsion at an angle of 25° to the surface. The emulsions made possible a reliable visual discrimination between tracks of singly-charged and doubly-charged particles and of heavier nuclei. Since the initial ion energy was known, it was possible to determine the energy at which the reaction took place by measuring the range of the B^{10} ion. The visual selection and subsequent detailed kinematic analysis, carried out with an "Ural-2" computer made it possible to

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ACC NR: AP5026096

identify 252 stars due to the reaction $O^{16} + B^{10} \rightarrow N^{14} + 3\alpha - 2.8$ Mev. Not a single case of this reaction was found when the energy of the bombarding ions was less than 25 Mev. The cross section at the maximum reached 111 mb. The angular distributions of the N^{14} nuclei produced in the reaction (Fig. 1), has two pronounced maxima in the region of small and large angles, reaching 20 and 14 mb/sr, respectively. The maximum in the small-angle region is due to a reaction mechanism in which an α-particle complex is picked up from the O^{16} nucleus by the incident B^{10} ion. The maximum in the large-angle region is apparently due to a reaction mechanism in which the incident B^{10} ion picks up a deuteron complex from the O^{16} nucleus. The excitation energies of the C^{12} nuclei observed in these cases exceed 25 Mev as a rule, and reach 40--45 Mev. The C^{12} nucleus decays directly into three α particles without interaction between them, or else via Be^8 states with excitation energy larger than 20 Mev. Author thanks Ye. V. Cherkavskaya

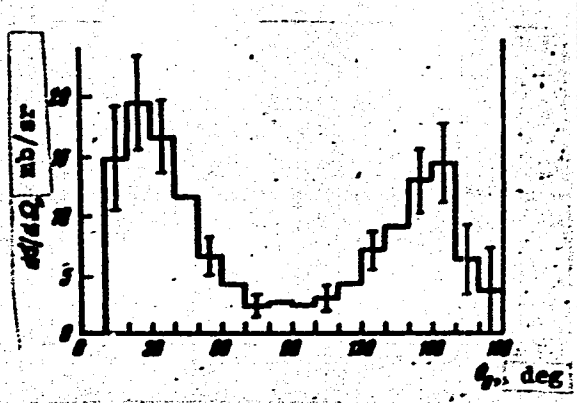

Fig. 1. Angular distribution of the nuclei N^{14} (in the c.m.s.), averaged over the bombarding ion energies from 25 to 95 Mev.

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ACC NR: AP5026096

V. M. Yemlyanova, K. P. Skibenko, Ye. K. Panteleyeva, and T. N. Startseva for great help in the processing of the emulsions. Orig. art. has: 2 figures and 1 formula.

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Card 3/3

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