

27.2400

26466

S/177/60/000/009/001/001
D219/D303

AUTHORS: Dorodnitsyna, A.A., Candidate of Biological Sciences, Savinich, F.K., Talapin, V.F., Lieutenant-Colonel, Medical Services, Shepelev, Ye. Ya., Lieutenant-Colonel, Medical Services

TITLE: Endurance of high temperatures by humans and the importance of heat-protecting clothes

PERIODICAL: Voyenno-meditsinskiy zhurnal, no. 9, 1960, 72 - 74

TEXT: The present work is a continuation of earlier investigations (Ref. 1: Voyenno-Meditsinskiy Zhurnal, No. 8, 56 - 58, 1958), and compares the influence of normal and semi-seasonal clothing of pilots at temperatures of 70, 80, 90, 100, 110, 120°C. The experiments were carried out in a heat chamber where the air was rarified to correspond to an altitude of 8000 meters. The subjects wore cotton underclothes under a high-altitude compensating dress. The outer clothing in one group consisted of cot-

Card 1/ 3

26466

S/177/60/000/009/001/001

D219/D303

Endurance of high temperatures...

ton flight dress, and in the other group of wadded semi-seasonal flight dress. Wool socks and leather boots were worn on the legs, at temperatures higher than 100°C the hands were covered by wool gloves. In all 90 experiments were carried out. Heart rate increased by about 40 - 60, systolic arterial pressure increased by 25 - 30 mm, diastolic pressure decreased by 3⁴ mm, resulting in a considerable increase of pulse pressure. Body temperature had risen by 1.6 - 2.3 °C, reaching in a number of cases 39.4 - 39.5°C. At the end of the experiments, the state of the subjects was characterized by a marked hyperthermia, approaching heat stroke, marked disturbance of the cardiovascular system and of the water balance of the organism. The total water loss of the organism, the quantity of evaporated water and the amount absorbed by the clothing was determined by weighing. The authors state that the endurance of high temperatures is basically related to the endurance of the heat accumulated in the organism. The limiting endurable amount of heat accumulated

Card 2/3

26466

S/177/60/000/009/001/001
D219/D303

Endurance of high temperatures...

is constant within the range of temperatures investigated and it is 63 ± 10 kilocalories per square meter of the body surface. The sooner this limiting value is reached the shorter the time duration endurable at high temperatures. The experiments show that the speed of heat accumulation in the organism is lower with the semi-seasonal dress. It appears that the external heat load operating on the organism is in the average 25% lower with the semi-seasonal dress. Water losses through evaporation, heat transmission and accumulation of water in the clothing were also lower with this types of dress. Reduced sweating is a direct consequence of the lower external heat loading. Although the heat transmission is reduced by 15%, evaporation takes place more effectively because of the smaller absorption in the clothing. The average time endured at high temperatures in the two kinds of clothing are shown in tabulated form. There are 4 tables and 1 Soviet-bloc reference.

X

SUBMITTED: May, 1959

Card 3/3

DORODNITSYNA, A.A. (Moskva); SHEPELEV, Ye.Ya. (Moskva)

Heat exchange in man during the exposure to high temperatures.
Fiziol. zhur. 46 no. 5:607-612 My '60. (MIRA 13:12)
(HEAT—PHYSIOLOGICAL EFFECT) (BODY TEMPERATURE)

24.4300

S/124/62/000/004/016/030
D251/D301

AUTHOR: Dorodnitsyn, A. A.

TITLE: A method of solving the equations of a laminar boundary layer

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 4, 1962, 79, abstract 4B532 (Zh. prikl. mekhan. i tekhn. fiz., 1960, no. 3, 111-118)

TEXT: A 'generalized' method of integral relations is proposed for solving problems of a boundary layer. Each equation of the system

$$\frac{\partial}{\partial x} P_i(x, y; u_1, \dots, u_n) + \frac{\partial}{\partial y} Q_i(x, y; u_1, \dots, u_n) = \\ = F_i(x, y; u_1, \dots, u_n) \quad (i = 1, 2, \dots, n)$$

Card 1/3

A method of solving ...

S/124/62/000/004/016/030
D251/D301

corresponding to the unknown functions u_1, \dots, u_n in the region $a \leq x \leq b, c \leq y \leq d$ is multiplied with some function $f(y)$, ($f(y) \rightarrow 0$ as $y \rightarrow b$) and is integrated, to give a generalized integral relationship

$$\frac{d}{dx} \int_c^d p_i f(y) dy + Q_{i,d} f(d) - Q_{i,c} - \int_c^d Q_i f'(y) dy =$$

$$\int_c^d F_i f(y) dy$$

The region is divided up on K strips (Kth approximation) and the functions p_i, Q_i, F_i are determined with the aid of certain interpolation expressions through their values on the boundaries of the

Card 2/3

A method of solving ...

S/124/62/000/004/016/030
D251/D301

strips $y = y_\nu$ ($\nu = 0, 1, \dots, k$). For each decomposition is chosen a group of linearly-independent functions $f_{k,m}$. After establishing the functions $f_{k,m}$ and the interpolation expression for p_i, Q_i, F_i in the generalized integral relation, there is obtained a closed system of ordinary differential equations and boundary conditions for determining the unknown functions $u_{i,\nu}$. The method is applied to an incompressible boundary layer with a pressure gradient. Approximation expressions and the differential equations of the fourth approximation are deduced. Comparison with the exact solutions shows a good coincidence for accelerated flow, but for retarded flow the difference is rather noticeable. 4 references.
[Abstracter's note: Complete translation.]

Card 3/3

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10.1200 also 1327 1502

29283
F/033/60/012/001/002/008
D205/D302

AUTHOR: Dorodnitsyn, A. A. (Moscow)

TITLE: Numerical methods in gas dynamics

PERIODICAL: Archiwum mechaniki stosowanej, v. 12, no. 1,
1960, 14 -27

TEXT: The paper deals with methods of solving the equations of gas dynamics in the presence of discontinuities. The author quotes an example proposed by A. A. Samarskiy showing that a method applicable to continuous functions gives incorrect results when applied to discontinuous functions. This happens because the finite difference scheme, chosen for solving the problem does not approximate the integral law of conservation of heat flow when there are discontinuities. The first method is most common in solving equations with partial derivatives. The author deals with the case when their solutions are discontinuous. The convergence of difference schemes of a higher order of accuracy is disturbed in the

X

Card 1/3

29283
F/033/60/012/001/002/008
D205/D302

Numerical methods in ...

region of discontinuity. To ensure convergence expressions are used called "schemes of interval accuracy". In the second method, differential equations of gas dynamics can be represented in a "divergent" form. For the case of two variables it is

$$\frac{\partial P}{\partial x} + \frac{\partial Q}{\partial y} = F. \tag{2.4}$$

Integrating this over a domain D limited by a contour F one obtains

$$\oint_{\Sigma} Pdy - Qdx = \iint_D Fdx dy \tag{2.5}$$

which will hold also for P and Q having some discontinuities. An example is discussed in detail. This method was first proposed by S. K. Godunov in 1952. When constructing finite difference approximation for equations in partial derivatives, it is necessary to consider every knot of the network as a possible discontinuity. Relations between the values at that point should be treated according

Card 2/3

29283

F/033/60/012/001/002/008
D205/D302

*Numerical methods in ...

to the integral conditions of conservation. The third method, (which the author calls the method of integral relations) useful for computer solutions, consists in approximate reduction of a partial differential equation to a system of ordinary differential equations. This method can also be applied when the forms of shock waves and the limits of regions are unknown. The author quotes the problems of sonic and supersonic flow past bodies, solved previously by P. I. Chushkin and O. M. Belotserkovskiy in order to illustrate the actual speed of convergence of the method. It is found that sufficient accuracy is obtained already in the second approximation. There are 8 figures and 8 Soviet-bloc references.

ASSOCIATION: Vychislitel'nyy tsentr AN SSSR (Computing Center, AS USSR)

Card 5/3

S/103/60/021/05/13/013
B007/B011

AUTHORS: Topchiyev, A. V., Academician, Vice President of the Academy of Sciences USSR, Fedorov, Ye. K., Corresponding Member of the AS USSR, Acting as Senior Scientific Secretary of the Presidium of the Academy of Sciences USSR; Dorodnitsyn, A. A., Ishlinskiy, A. Yu., Petrov, B. N., Members of the Commission

TITLE: Information.
Byuro prezidiuma Akademii nauk Soyuza SSR (Office of the Presidium of the Academy of Sciences of the USSR).
Resolution of February 12, 1960, No. 134, Moscow

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 5,
pp. 655 - 656

TEXT: The paper under review contains the literal text of the above resolution. This consists of two parts: resolution on the theory of invariance and its application to automatic devices of October 20, 1958 (Kiyev), and the judgment of the Commission in connection with the dis-

Card 1/5

Information.

Byuro prezidiuma Akademii nauk Soyuza SSR
(Office of the Presidium of the Academy of
Sciences of the USSR).
Resolution of February 12, 1960, No. 134,
Moscow

S/103/60/021/05/13/013
B007/B011

cussion on the theory of invariance. After having heard the Academician
A. A. Dorodnitayn's communication, (President of the komissiya Prezidiuma
AN SSSR (Commission of the Presidium of the AS USSR)), on the resolution
adopted on the theory of invariance and its application to automatic de-
vices of October 20, 1958 (Kiyev), the Byuro Prezidiuma Akademii nauk
SSSR (Office of the Presidium of the Academy of Sciences, USSR) decided
to approve the judgment of the Commission of the Presidium of the AS
USSR and to order its publication in the periodical "Avtomatika i tele-
mekhanika". The judgment reads as follows: the Commission consisting of
Academician A. A. Dorodnitsyn, Academician of the AS UkrSSR A. Yu.
Ishlinskiy, and Corresponding Member of the AS USSR B. N. Petrov, and
appointed by Academician A. V. Topchiyev, Vice President of the AS USSR
on October 28, 1958 examined the following materials: the afore-men-
tioned resolution of October 20, 1958, the resolution of the Presidium

Card 2/5

Information.

Byuro prezidiuma Akademii nauk Soyuzo SSR
(Office of the Presidium of the Academy
of Sciences of the USSR).
Resolution of February 12, 1960, No. 134,
Moscow

S/103/60/021/05/13/013
B007/B011

of the AS USSR of April 1, 1941, the conclusions reached by the Commission of the Presidium of the AS USSR on Professor G. V. Shchipanov's work "Automatic Regulation of Systems With Some Degrees of Freedom", the work itself, as well as papers resulting from the discussion thereon. The Commission established the following: The work published by Professor G. V. Shchipanov in the periodical under consideration, 1939, No. 1, gave rise to a detailed discussion. By order of the Presidium of the AS USSR of March 4, 1940 a commission was formed consisting of Academician O. Yu. Shmidt, Vice President of the AS USSR, Academician S. A. Chaplygin, Academician S. L. Sobolev, Academician N. Ye. Kochin, and Corresponding Member of the AS USSR N. G. Bruyevich. The conclusions reached by the Commission were discussed at the session held by the Presidium of the AS USSR on April 1, 1941. These included the particular opinion of Academician V. S. Kulebakin and Academician N. N. Luzin. Papers by Academician N. N. Luzin, Academician V. S. Kulebakin, A. G.

Card 5/5

Information.

Byuro prezidiuma Akademii nauk Soyuzo SSR
(Office of the Presidium of the Academy
of Sciences of the USSR).
Resolution of February 12, 1960, No. 134
Moscow

S/103/60/021/05/13/013
B007/B011

Ivakhnenko, B. N. Petrov, G. M. Ulanov, and others were published on this subject in the following years. The meeting under discussion was held on October 16 to 20, 1958 in Kiyev. It had been convened by the Otdeleniye tekhnicheskikh nauk Akademii nauk USSR (Department of Technical Sciences of the Academy of Sciences UkrSSR), Kiyevskiy gorodskoy seminar (Kiyev Municipal Seminar), and Institut elektrotekhniki AN USSR (Institute of Electrical Engineering of the AS UkrSSR). In their resolution, the delegates referred to the necessity of working out methods of compensating disturbances and of further developing the principle of invariance. On the strength of its investigations, the Commission states the following in its judgment: The conclusions reached by the Commission in 1941 are right, but the statement of the principal mistake contained in the work by G. V. Shchipanov "Condition of Compensation" is too general and, therefore, inexact. His principal mistake was not to have formulated the said condition, but to have applied it to the calculation of

Card 4/5

Information.

Byuro prezidiuma Akademii nauk Soyuz SSR
(Office of the Presidium of the Academy
of Sciences of the USSR).
Resolution of February 12, 1960, No. 134,
Moscow

S/103/60/021/05/13/013
B007/B011

such a class of control systems as do not allow the use of compensation conditions. The "Compensation Condition" or "Invariance Condition" formulated by Professor G. V. Shchipanov led to a new mathematical relation which can be successfully applied when projecting a determined class of dynamic systems. With reference to the inaccurate formulation of the 1941 resolution, it is recommended that an article be published in one of the technical periodicals to make it clear in which cases the principle of invariance can be used, and in which cases it is not admissible.

ASSOCIATION: Byuro prezidiuma Akademii nauk Soyuz SSR
(Office of the Presidium of the Academy of Sciences of
the Union SSR)

Card 5/5

~~DORODNITSYN, A.A., red.;~~ ALESKEROV, S.A., red.; SHIRINOV, k.f., red;
TIL'MAN, A., red. ISMAILOV, T., tekhn. red.

[Transactions of the All-Union Conference on Computer Mathematics and the Use of Computer Equipment] Trudy Vsesoiuznogo soveshchaniia po vychislitel'noi matematike i primeneniui sredstv vychislitel'noi tekhniki, 1958. Baku, Izd-vo Akad. nauk Azerbaidzhanskoi SSR, 1961. 119 p. (MIRA 14:9)

1. Vsesoyuznoye soveshchaniye po vychislitel'noy matematike i primeneniui sredstv vychislitel'noy tekhniki, 1958.
(Electronic calculating machines—Congresses)

DORODNITSYN, A.A. and LETICHEVSKIY, A.A.

"Simulation of Logical Selection."

Report submitted for the Symposium on Principles in the Design of
Self-Learning Systems, Kiev Ukr SSR, 5-9 May 1961

DORODNITSYN, A.A.

PHASE I BOOK EXPLOITATION SOV/5962

Vsesoyuznoye soveshchaniye po vychislitel'noy matematike i primeneniyu sredstv vychislitel'noy tekhniki, Baku, 1958.

Trudy (Transactions of the All-Union Conference on Computer Mathematics and Applications of Computers) Baku, Izd-vo AN Azerbaydzhanskoy SSR, 1961. 254 p. 500 copies printed.

Sponsoring Agency: Akademiya nauk Azerbaydzhanskoy SSR. Vychislitel'nyy tsentr.

Eds.: A.A. Dorodnitsyn, S.A. Aleskerov, and K.F. Shirinov; Ed. of Publishing House: A. Til'man; Tech. Ed.: T. Ismailov.

PURPOSE: The book is intended for mathematicians and other specialists interested in computer theory and uses for computers.

COVERAGE: The book contains the texts of 24 papers presented at the All-Union Conference on Computer Mathematics and Applications of Computers held in Baku, 3-8 Feb 1958. The "Resolution"

Card 1/1

Transactions of the All-Union (Cont.) SOV/5962

of the conference, consisting of proposals for accelerating the development of computer mathematics and computer engineering, is also included.

TABLE OF CONTENTS:

Khalilov, Z.I. Introductory Remarks 7

Dorodnitsyn, A.A. Problems of Computer Technology 9

PART I. COMPUTER MATHEMATICS

Vekilov, Sh.I. Boundary Problem of the Laplace Equation for a Composite Region 14

Dzhabarzade, R.M. The Use of Computers for Operational Weather Forecasting 20

Korolyuk, V.S. Construction of Logic Problem Algorithms 23

Card 2/6

S/763/61/000/000/007/013

AUTHOR: Dorodnitsyn, A. A.

TITLE: On one method for the solution of boundary-layer equations.

SOURCE: Nekotoryye problemy matematiki i mekhaniki. Novosibirsk, Izd-vo Sib. otd. AN SSSR, 1961, 77-83.

TEXT: Mathematical methods provide the only means for a determination of the aerodynamic and thermal characteristics of full-scale objects at hypersonic (HS) speeds with satisfactory accuracy. Contrary to the intermediate era in aerodynamics, in which wind tunnels could provide practically more valued results than mathematical models could afford, the advance into the range of HS speeds has led to problems in which dissociation and oscillatory phenomena occur and model tests become practically impossible, since the scale factors to be simulated, in addition to the M and R numbers, comprise an equality of $\text{abs } T$ and $\text{abs } p$. Unsimulatable thermodynamic processes occur even at M of the order of 2 and, in any event, $M \geq 3$. An additional difficulty is the need for simulating radiative processes. All of these critical remarks apply to "model experiments" only; nothing can replace the validity of a full-scale physical experiment. While reasonably staged model experiments still retain their validity, high-speed computing machines expand the possibility of an exact solution of problems greatly. Suitable mathematical methods can be divided into 4 groups:

Card 1/2

On one method for the solution of

S/763/61/000/000/007/013

(1) Exact analytical solutions of specific problems; (2) qualitative investigations; (3) exact numerical solutions; (4) methods that are intermediate between the 2d and 3d groups. Unfortunately, the latter is quantitatively the smallest group. This group should contain various kinds of refinements and generalizations of the qualitative methods, such as those previously practiced by authors on the strength of their "intuition." The author is not altogether innocent in this respect. To provide an example of a valid statement of a problem for computation, a brief summary of the concepts of the method is set forth for the instance of a boundary layer in an incompressible fluid. The complete paper is published in the Zh. prikl. mekh. i tekhn. fiziki in the issue honoring M. A. Lavrent'yev. The method for the numerical solution proposed is based on the employment of the Kármán integral relationship and is developed through the first, second, and third approximations; this is followed by a graphical comparison of the velocity distributions thus computed. It is found that, while the setting up of the systems of differential equations for the various approximations requires a laborious effort, this needs to be done once and for all, whereupon the problem of the calculation of a boundary layer becomes a standard procedure. Only in one block of the standard program must the values of the factor \dot{V}/V be introduced for each specific case, so that the setting-up of the system of ordinary differential equations becomes one of the simpler problems. There is 1 figure; no references.

Card 2/2

DORODNITSYN, A., akademik

On the wings of intelligence. Vest. Vozd. Fl. no.4:55-56 Ap '61.
(MIRA 14:7)
(Space sciences)

DORODNITSIN, A.A. (Moscow)

Numerical methods in gas dynamics. Archiw mech 12 no.1:13-27 '61.

GUTENMAKHER, L.I.; DORODNITSYN, A.A., akademik, otv. red.; KLYAUS,
Ye.M., red. izd-va; GUS'KOVA, O.M., tekhn. red.; GUSEVA, A.P.,
tekhn. red.

[Electronic information and logic machines]Elektronnyye informa-
tsionno-logicheskie mashiny. Izd.2., ispr. i dop. Moskva, Izd-
vo Akad. nauk SSSR, 1962. 199 p. (MIRA 15:12)

(Electronic computers)
(Information storage and retrieval systems)

DORODNITSYN, A.A.

6

- ABRAMOV, A. A., Computer Center, Academy of Sciences USSR [1959 position] - "Numerical solution of linear algebra problems arising in mathematical physics" (Session 26)
- CHEREVICHNIK, Yu. K., Computer Center, Academy of Sciences USSR [1960 position] - "Cold cathode-tube blocks in computers" (Session 47)
- DORODNITSYN, A. A., Computer Center, Academy of Sciences USSR, Active Member, Academy of Sciences USSR - "Partial differential equations of the mixed type and methods of their solution" (Invited paper, Session 4)
- GLUSHKO, V. M., Director, Computer Center, Academy of Sciences Ukrainian SSR, Kiev [1961 position] - "Some problems of learning automata" (Session 12)
- KASHIRSKIY, A. A., "The use of computers in organization of industrial methods of building construction" (Session 25)
- KOVALEVSKIY, V. A., Computer Center, Academy of Sciences Ukrainian SSR, Kiev [1960 position] - "Automatic recognition of typewritten letters" (Session 36)

report to be submitted for the 2nd Intl. Congress for Information Processing, IFIPS, Munich, West Germany, 27 Aug - 1 Sep 1962.

S/030/62/000/002/005/008
B105/B110

AUTHORS: Dorodnitsyn, A. A., Academician, Nikol'skiy, A. A., Doctor
of Physics and Mathematics, Chushkin, P. I., Candidate of
Physics and Mathematics

TITLE: Aerodynamics of high velocities and high altitudes

PERIODICAL: Akademiya nauk SSSR. Vestnik, no. 2, 1962, 80 - 83

TEXT: From August 28 to September 2, 1961 a conference on the mechanics
of fluids and gases was convened by the Polish Academy of Sciences at
Jablonna, a suburb of Warsaw. This conference dealt with problems of the
aerodynamics of high-velocities and high altitudes. The conference was
attended by delegates from Austria, Great Britain, the German Democratic
Republic, Roumania, the USSR, and France. At the conference problems of
the boundary layer, dilute gases and of hypersonic flows were discussed.
A. A. Dorodnitsyn suggested a numerical method of calculating the equa-
tions of the laminar boundary layer in the case of incompressibility,
and showed that this method can be extended to the compressible boundary
layer. The numerical method of calculating equations of the boundary layer
Card 1/3

S/030/62/000/002/005/008
B105/B110

Aerodynamics of high ...

of a bluff body which had been developed at the Vychislitel'nyy tsentr Akademii nauk SSSR (Computer Center of the Academy of Sciences USSR) were described. Yu. N. Pavlovskiy (USSR) reported on results of methods of group analysis for equations of the boundary layer in the case of incompressibility. V. Prosnak (Poland) spoke about the calculation of the boundary layer between two incompressible flows moving in opposite directions. Ya. Lubonski (Poland) described a special case of the Couette flow. P. I. Chushkin and O. M. Belotserkovskiy (USSR) gave the numerical solution of the problem of bluff bodies being circumflown by ultrasonic flight velocities. A. A. Nikol'skiy (USSR) dealt with the nonsteady axisymmetrical movements of the incompressible fluid of infinite conductivity. S. Apanasewicz (Poland) studied magnetohydrodynamic problems. K. P. Stanyukovich (USSR) spoke about the propagation of cylindrical waves in gas. V. Fiszdon and Z. Dzigadlo (Poland) dealt with the solution of linearized problems of harmonic oscillations of axisymmetrical bodies in the ultrasonic gas flow. Yu. Bonder (Poland) suggested a new invariant form for equations of gas dynamics for the compressible nonsteady case. I. M. Yur'yev (USSR) and K. Iacob (Roumania) dealt with the development of the theory of S. A. Chaplygin for plane gas flows. New problems of gas dynamics were

Card 2/3

Aerodynamics of high ...

S/030/62/000/002/005/008
B105/B110

discussed which arise in flights at high velocities and high altitudes.



Card 3/3

DORODNITSYN, A.A.

Numerical methods of solving equations of the laminar boundary layer.
Archiw mech 14 no.3/4:343-357 '62.

1. Vychislitel'nyy tsentr Akademii nauk SSSR, Moskva.

KELDYSH, M.V., akademik; DORODNITSYN, A.A., akademik; SOBOLEV, S.L., akademik;
TRAPEZNIKOV, V.A., akademik; STAROVSKIY, V.N.; KOEN, I., prof. psikhologii;
BERNAL, D. (Angliya); PAUELL, S.; ARTSIMOVICH, L.A., akademik;
NEMCHINOV, V.S., akademik

Science in the borderland of fantasy. Tekh.mo. 31 no.1:2 of cover, 2,7;
'63. (MIRA 16:3)

1. Prezident AN SSSR (for Keldysh).
2. Chlen-korrespondent AN SSSR (for Starovskiy).
3. Manchesterskiy universitet, Angliya (for Koen).
4. Prezident Vsemirnoy federatsii nauchnykh rabotnikov (for Panell).
(Science)

DORODNITSYN, A.A., akademik

Problems of information processing. Vest. AN SSSR 33 no.2:85-
87 F '63. (MIRA 16:2)
(Electronic data processing--Congresses)

ASDA5/IJP(c)
ACCESSION NR AP401522

S 0000 64/155 002/0294/0297

AUTHOR: Revil, M. V. Dorodnitsyⁿ, A. A.

11
6

TITLE: Concerning one general method of reducing the order of the Hamiltonian system with a known integral

SOURCE: AN SSSR. Doklady*, v. 158, no. 2, 1964, 224-297

TOPIC TAGS: Hamiltonian equation, equation system order lowering, integration motion equation, analytical mechanics

ABSTRACT: There is no known general rule for reducing the order of a Hamiltonian system by two units by means of a known integral. For instance, in the three body problem, the reduction of the order of the equation of motion by two units is based on a physical (geometrical) interpretation. The author of the present paper makes an attempt to fill this gap by using the apparatus of the analytical mechanics. The author is grateful to corresp. member of AN SSSR

Card 1/2

L 32015-65

ACCESSION NR: AP4045622

V. V. Struminskiy for his interest. Orig. art. has: 17 equations

ASSOCIATION: None

SUBMITTED: 08Jan64

ENCL: 00

SUB CODE: MA, ME

NO REF SOV: 000

OTHER: 001

Card 2/2

L 24809-65 EWT(d)/T/EMP(1) IJP(o)

ACCESSION NR: AP5001977 S/0020/64/159/006/1238/1219

AUTHOR: Usachev, Ye. S.; Dorodnitsyn, A. A. (Academician)

TITLE: Maximum distributions in a stochastic learning-ability model

SOURCE: AN SSSR. Doklady, v. 159, no. 6, 1964, 1238-1239

TOPIC TAGS: learning ability, learning automaton

ABSTRACT: The asymptotic properties of a homogeneous Markov chain p_n are studied. The chain describes the distribution of probabilities of the "subject's" responses to teaching in an R. Bush and F. Mosteller learning-ability model ("Stochastic Learning-Ability Models," book). Equations are set up for the characteristic functions $f(t)$ of maximum distributions; these equations may give three types of responses of the medium interacting with the subject: (1) Medium responses are independent of subject's responses; (2) Medium responses are single-valuedly determined by subject's responses; and (3) Medium responses

Card 1/2

L 24809-65

ACCESSION NR: AP5001977

3

stationary-stochastically depend on subject's responses. "The authors wish to thank V. G. Sragovich for his constant help, and Yu. A. Shreyder for his valuable advice." Orig. art. has: 8 formulas.

ASSOCIATION: Vy*chislitel'ny*y tsentr AN SSSR (Computing Center, AN SSSR)

SUBMITTED: 25Apr64

ENCL: 00

SUE CODE: DP

NO REF SOV: 002

OTHER: 002

Card 2/2

KITOV, Anatoliy Ivanovich; KRINITSKIY, Nikolay Andreyevich;
DORODNITSYN, A.A., akademi

[Electronic computers] Elektronnye vychislitel'nye ma-
shiny. Izd.2., perer. i dop. Moskva, Nauka, 1965. 174 p.
(MIRA 18:6)

L 04996-57 EWF(L)/EWP(m) WW/GD
ACC NR: AT6016792 (N) SOURCE CODE: UR/0000/65/000/000/0171/0182

53
841

AUTHOR: Dorodnitsyn, A. A.

ORG: Computing Center, Academy of Sciences, SSSR, Moscow (Vychislitel'nyy tsentr Akademii nauk SSSR)

TITLE: Plane problem of nonsteady flow of a heavy fluid

SOURCE: International Symposium on Applications of the Theory of Functions in Continuum Mechanics. Tiflis, 1963. Prilozheniya teorii funktsiy v mekhanike sploshnoy sredy. t. 2: Mekhanika zhidkosti i gaza, matematicheskiye metody (Applications of the theory of functions in continuum mechanics. v. 2: Fluid and gas mechanics, mathematical methods); trudy simpoziuma. Moscow, Izd-vo Nauka, 1965, 171-182

TOPIC TAGS: heavy fluid, fluid flow, nonsteady flow, wave equation

ABSTRACT: The author investigates the problem of the flow of a heavy fluid with a perturbed surface. The fluid is assumed to propagate in both directions to infinity. The bottom has horizontal asymptotes with $x \rightarrow \pm \infty$, and the coordinate system is shown in Fig. 1. As an example of the application of the method used, the author investigates the approach of a single

Card 1/3

ACC NR: AT6016792

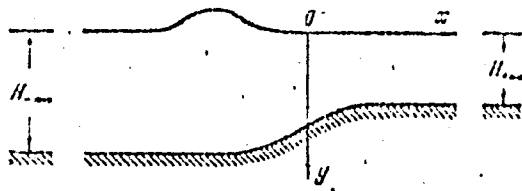


Figure 1. System of coordinates

wave to shallow water. Three real parameters in the equations derived (a, ξ_0, h) make it possible to vary the height of the wave a , the height of the bottom shelf h , and the initial position of the wave relative to the bottom shelf ξ . The results of the calculations are presented in Fig. 2 for the following values of the parameters:

$a = 1/4\pi, \xi_0 = \pi, h = 1/4$. It is noted that

the physical problem of wave motion is unstable. The appearance, for example, of small ripples leads to an increase in the slope of the ripples and to the "breaking" of the small waves. During numerical calculations, such "ripples" appear as a result of rounding off errors, hence it is necessary to introduce smoothing out into the computational procedure. In conclusion, the author wishes to express his deep gratitude to N. A. Meller, scientific associate of the Computing Center, Academy of Sciences SSSR (Vycheslitel'nyy tsentr Akademii nauk SSSR), who made a great contribution to the processing of the method of the

ACC NR: AP7005440

SOURCE CODE: UR/0030/66/000/007/0024/0029

AUTHOR: Dorodnitsyn, A. A. (Academician)

ORG: none

TITLE: New practical applications of mathematical methods

SOURCE: AN SSSR. Vestnik, no. 7, 1966, 24-29

TOPIC TAGS: geology, geophysics, mathematic model, computer

ABSTRACT: Thanks to the computer, geology is now subject to mathematical treatment where formerly it was thought to be impervious to it. Geophysics, on the other hand, has always been subject to mathematical methods, although such geophysical problems as the location of a perturbing force are prone to measurement errors and have therefore been regarded as mathematically meaningless.

But in recent years such Soviet mathematicians as A. N. Tikhonov and M. M. Lavrent'ev have developed a firm base for the solution of such problems. No comparable success, however, has been won for geological phenomena. For example, attempts to create physical models for studying geotectonic processes on a small scale are doubtful, owing to the extraordinary lengths of time (millions of years) and the vast areas of geo-

Card 1/2

UDC: 519.9/550

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ACC NR: AP7005440

dynamic processes. But there is some promise in mathematical models.

In the urgent practical problem of searching for mineral deposits, the computer offers definite advantages. It can spare geologists the necessity of exploratory trial and error drilling at great expense of time and labor in the field by giving, on the basis of observations of a site's surface, a reliable estimate of the site's mineralogical potential. Computations of this kind have parallels in other areas of research: in medicine, for example, where a patient's symptoms are fed into a computer to furnish a diagnosis of the illness. In geology this can be done in a binary computing system, with a binary code corresponding to observed geological objects.

The author discusses, in principally qualitative terms, a possible approach to such a system which, he hopes, will furnish a common "language" for mathematicians and geologists.

Orig. art. has: 1 formula. [JPRS: 38,764]

SUB CODE: 08, 09, 12 / SUBM DATE: none

Card 2/2

ACC NO: AT0016792 (N)

SOURCE CODE: UR/0000/G5/000/000/0171/0112

AUTHOR: Dorodnitsyn, A. A.

ORG: Computing Center, Academy of Sciences, SSSR, Moscow (Vychislitel'nyy tsentr Akademii nauk SSSR)

TITLE: Plane problem of nonsteady flow of a heavy fluid

SOURCE: International Symposium on Applications of the Theory of Functions in Continuum Mechanics, Tbilisi, 1963. Prilozeniya teorii funktsiy v mekhanike sploshnykh sredy. 2: Mekhanika zhidkosti i gaza, matematicheskiye metody (Applications of the theory of functions in continuum mechanics. v. 2: Fluid and gas mechanics, mathematical methods): trudy simpoziuma. Moscow, Izd-vo Nauka, 1965, 171-182

TOPIC TAGS: heavy fluid, fluid flow, nonsteady flow, wave equation

ABSTRACT: The author investigates the problem of the flow of a heavy fluid with a perturbed surface. The fluid is assumed to propagate in both directions to infinity. The bottom has horizontal asymptotes with $x \rightarrow \pm \infty$, and the coordinate system is shown in Fig. 1. As an example of the application of the method used, the author investigates the approach of a single

11.01.270-69

ACC NR: AT6016702

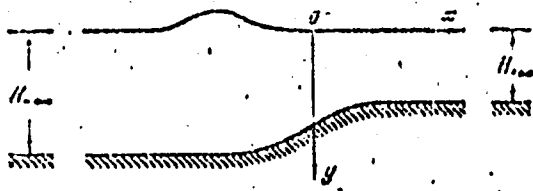


Figure 1. System of coordinates

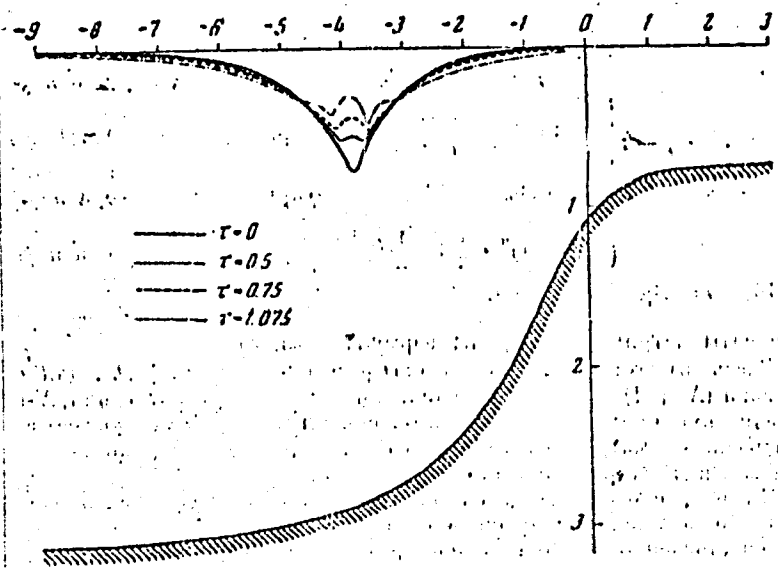
wave to shallow water. Three real parameters in the equations derived (a , ξ_0 , h) make it possible to vary the height of the wave a , the height of the bottom shelf h , and the initial position of the wave relative to the bottom shelf ξ . The results of the calculations are presented in Fig. 2 for the following values of the parameters:

$a = 1/4$, $\xi_0 = \pi$, $h = 1/4$. It is noted that

the physical problem of wave motion is unstable. The appearance, for example, of small ripples leads to an increase in the slope of the ripples and to the "breaking" of the small waves. During numerical calculations, such "ripples" appear as a result of rounding off errors, hence it is necessary to introduce smoothing out into the computational procedure. In conclusion, the author wishes to express his deep gratitude to N. A. Meller, scientific associate of the Computing Center, Academy of Sciences SSSR (Vychislitel'nyy tsentr Akademii nauk SSSR), who made a great contribution to the processing of the method of the

L 04996-67

ACC NR: AT6016792



numerical calculation and programming, as well as to graduate student Nguen Lamu for his assistance in programming and in the performance of the calculations. Orig. art. has: 3 figures and 39 formulas.

Figure 2. Calculations of a wave approaching shallow water.

SUB CODE: 12,20/ SUBM DATE: 13Sep65

PITHAWALLA, Maneji Hojanji; DORODNITSYNA, N.K. [translator]; POPOV, Konstantin, redaktor; YEFREMOV, Yu.K., redaktor

[Pakistan; a geographical sketch. Translated from the English]
Pakistan; geograficheskii ocherk. Porevod s angliiskogo N.K.
Dorodnitsyna. Predisl. i rei. Konstantina Popova. Red. fiziko-
reograf. chasti IU.K.Efremova. Moskva, Izd-vo inostrannoy lit-ry,
1952. 130 p. (MLRA 10:3)
(Pakistan—Geography)

L 20529-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(l) JD/WG
ACC NR: AP5023079 (A) SOURCE CODE: UR/0125/65/000/009/0017/0013 46

AUTHOR: Kraychik, M.M. (Candidate of technical sciences); Dorodnitsyna, H.V.
(Engineer) B

ORG: All-Union Scientific Research Institute for Railway Transportation (Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta)

TITLE: Properties of brittle fractures in welded parts of railway rolling stock 15

SOURCE: Avtomaticheskaya svarka, no. 9, 1965, 17-18

TOPIC TAGS: brittleness, fatigue strength, impact stress, mechanical fatigue, yield stress, welding, material deformation, low carbon steel, railway rolling stock, tensile stress

ABSTRACT: Brittle fractures in a longitudinal beam of a railway track after 6 years of operation and in a locomotive truck after 2-3 years of operation were investigated. The results show that at negative temperatures and impact a fatigue fracture 3-4 mm deep can cause brittle failure in welded metal parts under a nominal stress that is much below the yield point. It is concluded that stress concentration in the neutral axis zone and in the zone of highest tensile stress is intolerable for beams operating under variable loads and low temperatures and, particularly, for railway rolling stock. Orig. art. has: 4 figures.

SUB CODE: 11,20 SUBM DATE: 07Aug64 ORIG REF: 005 14, 44, 55

Dorodnitsin, A. V. On circular lunes quadrable with the use of ruler and compass. Doklady Akad. Nauk SSSR (N.S.) 58, 965-968 (1947). (Russian)
 E. Lashin [S.-b. Berlin. Math. Ges. 2, 1-6 (1903)] and L. Tschabaloff [Math. Z. 30, 552-559 (1929)] reduced the problem of quadrable lunes to finding pairs of integers m and n , $(m, n) = 1$, for which the equation

$$(1) \quad n \left(\frac{x-1}{x+1} \right)^m - m x^{m-1} \left(\frac{x-1}{x+1} \right)^{m-1} = 0$$

is solvable by means of square roots. They investigated the case when m is a prime. T. Clausen [J. Reine Angew. Math. 21, 375-376 (1840)] had given two quadrable lunes in addition to the three known to Hippocrates of Chios and he made the conjecture that no others exist. N. Tchebotarow [Math. Z. 29, 161-175 (1934)] showed that in the case $m - n \equiv 0 \pmod{2}$.

The present paper continues the work of Tchebotarow and completes the solution of the problem by showing that no solutions other than those known to Clausen exist if $m - n \equiv 1 \pmod{2}$. The details of the argument are not fully given since the methods employed, the organization of the proof and the notation follow very closely the paper of Tchebotarow, where the argument depends on p -adic expansion of a root of (1), use of two theorems deduced from work of M. Bauer and of O. Ore, and exclusion of cases by Newton's polygons and other means.

R. Church

Source: Mathematical Reviews,

Vol. 7 No. 6

DORODNOV, A.V.

Subfields of a hyperelliptic field of algebraic functions. Uch.
zap.Kaz.un. 116 no.5:7-9 '56. (MLRA 10:4)

1. Kafedra algebr.
(Fields, Algebraic)

DORODNOV, I.P.

Operations with core bits under the complex conditions of deep
drilling in the Cretaceous sediments of the Chechen-Ingush
A.S.S.R. Burenie no.9:3-4 '64. (MIRA 18:5)

1. Tsentral'nyy remontno-mekhanicheskiy zavod, g. Groznyy.

DORODNOV, I.P.

Ways to increase the number of samples from the Cretaceous sediments of the oil fields of the State All-Union Association of the Grozny Oil Gas Industry. Burenie no.1:21 '65. (MIRA 18:5)

1. Tsentral'nyy remontno-mekhanicheskiy zavod ob'yedineniya "Grozneft".

DORODNOV, I.F.

Core formation in drilling with a core bit with a cutter head.
Neft. khos. 42 no.1126-30 N '64 (MIRA 18:2)

KARNAUKHOV, L.A.; DORODNOV, I.P.

Cutting-abrading stage bits with a wash-over system having
hard-alloy cutters. Bureau no.7:3-5 '65. (MIRA 18:12)

1. Grozneneskiy neftyanoy nauchno-issledovatel'skiy institut.

DORODNOV, I.T.

Experimental work on the collective farm. Saratovskoe, obl.gos. izd-vo,
1951.

DORODNOV, P.G.

YEYIMOV, V.I.; KHUDYAKOV, N.V.; SBITNEV, L.P.; ROMANOVSKIY, V.E.;
KEOLIN, I.R.; POPOV, V.I.; OSIPOV, G.P.; PISKAREV, V.S.;
AGAFONOV, Ye.F.; DORODNOV, P.G.; STRUKACHEV, V.I.; ZAYTSEV,
Yu.A.

A.A.Klimov's book "Electricity in animal husbandry." Reviewed
by V.I.Efimov and others. Elektrichestvo no. 5. 87-88 S '56.
(MLRA 9:11)

1. Kafedra primeneniya elektricheskoy energii v sel'skom kho-
zyaystve Stalingradskogo sel'skokhozyaystvennog instituta (for
Yefimov, Khudyakov, Sbitnev, Romanovskiy, Kholin). 2. Kafedra
primeneniya elektroenergii v sel'skom khozyaystve Saratovskogo
instituta mekhanizatsii sel'skogo khozyaystva imeni Kalinina
(for Popov, Osipov, Piskarev, Agafonov, Dorodnov, Strukachev,
Zaytsev). (Electricity in agriculture) (Stock and stockbreeding)

voltage
DORODANOV, P.G., Cand Tech Sci --(diss) "On the problem of re-
gulation of ~~tension~~ in high tension lines with ~~steel-cables~~ of DPZ-
system steel ^{wires} ~~cables~~ by means of booster transformers." Kiev, 1959.

15 pp (Ukrainian Order of Labor Red Banner Agr Academy)
(~~Ministry of Higher Education, USSR, Ministry of Textile Industry~~)

150 copies (EL, 30-59, 120)

ACC NR: A.7009533

SOURCE CODE: UR/0143/66/000/012/0023/0023

AUTHOR: Dorodnov, P. G. (Candidate of Technical Sciences; Docent);
Shatkin, A. N. (Engineer)

ORG: Saratov Polytechnical Institute (Saratovskiy politekhnicheskiy institut)

TITLE: Smooth, contactless control of voltage by transformer with inductive-capacitive link

SOURCE: IVUZ. Energetika, no. 12, 1966, 23-28

TOPIC TAGS: electric transformer, electronic circuit

SUB CODE: 09

ABSTRACT: A transformer with an inductive-capacitive link allows smooth, contactless control of voltage at consumer locations. The introduction of an inductive-capacitive link to the circuit allows the range of control to be expanded both during idle and under load. A practically linear law of change of $I_d=f(I_2)$ is produced, allowing automation of the control of the magnetizing current from the load current. The transformer described in this article can be used for control of voltages in electrical supply systems in industrial enterprises, as well as for laboratory and other purposes. Orig. art. has: 4 figures and 11 formulas. JPRS: 40,102

UDC: 621.316.722.9

171
19.30 1/16

DORODNOV, R.

Careful maintenance of a machine. Blok.agit.ved.transp. no.20:
30-34 0 '55. (MLRA 9:1)

1. Tekar' sveda imeni "Parishskoy Kommuny"
(Lathes--Maintenance and repairs)

OSTROUSHKO, I.A., prof.; YEMEKYEV, V.I., dotsent; KRIVCHIKOV, P.V., inzh.;
DORODNOV, V.S.; inzh.; CHUGUNOV, L.F., inzh.; KLYACHEO, L.I., inzh.

Improvement of bore bits for compressed-air percussion drills.
Izv. vys. ucheb. zav.; gor. zhur. no.10:93-98 '60. (MIRA 13:11)

1. Severo-Kavkazskiy gornometallurgicheskiy institut imeni Sergo
Ordshonikidse. Rekomendovana kafedroy spetsial'nykh kursov gornogo
dela Severo-Kavkazskogo gornometallurgicheskogo instituta.
(Boring machinery)

OSTROUSHKO, I.A.; YEMEKEYEV, V.I.; DORODNOV, V.S.; BORODIN, N.I.;
KRIVCHIKOV, P.F.; CHUGUNOV, L.F.

Optima conditions for BA-100 drill rig operations in hard rocks.
Izv. vys. ucheb. zav.; tsvet. met. 4 no.3:12-18 '61. (MIRA 15:1)

1. Severokavkazskiy gornometallurgicheskiy institut i Tyrnyauzskiy
kombinat. Rekomendovana kafedroy spetsial'nykh kursov gornogo
dela Severokavkazskogo gornometallurgicheskogo instituta.
(Rock drills)

AGAPOVA, T.I., red.; DORODNOV, Ye.V., red.; KASHCHENKO, Ye.I., red.; KRUSHANOV, A.I., red.; REYKHBERG, G.Ye., red.; VOROB'YEV, V.V., red.; BORZUNOV, V.F., red.

[Abstracts of papers and reports of the Third Far Eastern Conference on History, archaeology and Ethnography Section: Socialist building projects in Siberia and the Far East] Tezisy dokladov i soobshchenii. Sektsiia: Sotsialisticheskie novostroiki Sibiri i Dal'negu Vostoka. Komsomol'sk-na-Amure, Komsomol'skii-na-Amure Gospedinstitut, 1962. 76 p. (MIRA 17:9)

1. Dal'nevostochnaya konferentsiya po istorii, arkheologii i etnografii. 3d, Komsomol'sk-na-Amur, 1962.
2. Komsomol'skiy-na-Amure Gosudarstvennyy pedagogicheskiy institut (for Kashchenko).
3. Dal'nevostochnyy filial Sibirskogo otdeleniya AN SSSR (for Reykhberg).
4. Institut geografiy Sibirskogo otdeleniya AN SSSR (for Vorob'yev).
5. Institut istorii AN SSSR (for Borzunov).

KIPARENKO, Alla Vladimirovna; DORODNOV, Yefim Vasil'yevich; GUDKOVA, N.,
red.; DANILINA, A., tekhn.red.

[The city of youth] Gorod iunosti. Moskva, Gospolitizdat,
1963. 78 p. (MIRA 16:7)
(Komsomol'sk-on-Amur)

KULAKOVA, Yu.F., vrach; DORODNOVA, K.S.

Experience in the treatment of cervical erosion and endocervicitis
with diathermocoagulation. Sbor. nauch. rab. Sar. gos. med. inst.
44:344-348 '64. (MIRA 18:7)

1. Ginekologicheskoye otdeleniye dorozhnoy klinicheskoy bol'nitsy
Privolzhskoy zheleznoy dorogi, Saratov. 2. Glavnyy akusher-ginekolog
dorozhnoy klinicheskoy bol'nitsy Privolzhskoy zheleznoy dorogi,
Saratov.

DORODNOVA, K.S.; SUMOVSKAYA, A.Ye., kand. med. nauk

Stillbirth and the tasks of the obstetricians-gynecologists of
the Volga Valley Railroad in its control. Sbor. nauch. rab. Sar.
gos. med. inst. 44:335-339 '64. (MIRA 18:7)

1. Glavnyy akusher-ginekolog dorozhnoy k'l'nicheskoy bol'nitsy
Privolzhskoy zheleznoy dorogi (for Dorodnova).

DORODNOVA, T.N., red.; BORUNOV, N.I., tekhn. red.

[Regulations and instructions on electric relay protection systems] Rukovodiashchie ukazaniia po releinoi zashchite. Moskva, Gosenergoizdat. No.3. [Protection of 6 to 220 kv. bus conductors of electric power plants and substations] Zashchita shin 6 - 220 kv stantsii i podstantsii. 1961. 71 p.
(MIRA 15:5)

1. Moscow. Vsesoyuznyy gosudarstvennyy proyektnyy institut "Teploelektroproyekt."

(Electric power distribution)

(Electric protection)

DORODNOVA, T.N., red.; SMIRNOV, E.P., red.; LARIONOV, G.Ye.,
tekhn. red.

[Regulations on relay protection systems] Rukovodiashchie ukazania po releinoi zashchite. Moskva, Gosenergoizdat. No.4. [Protection of step-down transformers and auto-transformers] Zashchita ponizhalushchikh transformatorov i avtotransformatorov. 1962. 119 p. (MIRA 16:6)

1. Moscow. Vsesoyuznyy gosudarstvennyy proyektnyy institut "Teploenergoprojekt."
(Electric transformers) (Electric protection)

DORODNOVA, T.N., inzh.; MURASHKO, N.V., inzh.

Matching of a remote-type protection system with a composite
current and voltage cutoff system in 110 to 220 kv. networks.
Elek.sta. 33 no.12:65-70 D '62. (MIRA 16:2)
(Electric protection) (Electric power distribution)

DOBODNOVA, T.N., red.; SMIRNOV, E.P., red.; LARIONOV, G.Ye.,
tekhn. red.

[Regulations on relay protection systems] *Rukovodiashchie ukazaniia po relsinoi zashchite. Moskva, Izd-vo "Energia."*
No.5. [Protection of generator-transformer and generator-autotransformer blocks] *Zashchita blokov generator-transformator i generator-avtotransformator. 1963. 111 p.*
(MIRA 17:4)

1. Moscow. *Vsesoyuznyy gosudarstvennyy proyektnyy institut "Teploelektroproyekt."*

DORODNOVA, T.N., inzh.; KOZHIN, A.N., inzh.

Calculation of differential-phase protection of 110-220 kv. bus lines.
Elek. sta. 35 no.9:77-82 S '64. (MIRA 18:1)

L 9828-66 ()/EWA(h)

SOURCE CODE: UR/0104/65/000/005/0073/0093

ACC NR: AP6003970

AUTHOR: Sarkisov, M. A.; Hokotyan, S. S.; Uspenskiy, B. S.; Sharov, A. N.;
Zhulin, I. V.; Fedoseyev, A. M.; Koroley, M. A.; Kheyfita, M. E.; Yermolenko, V. M.;
Petrov, S. Ya.; Azar'yev, D. I.; Krikunchik, A. B.; Polyakov, I. P.; Sazonov, V. I.;
Khvoshchinskaya, Z. G.; Kartsev, V. L.; Smelyanskaya, E. Ya.; Kozhin, A. N.;
Losev, S. B.; Dorodnova, T. N.; Rubinchik, V. A.; Smirnov, E. P.; Rudman, A. A.

ORG: none

TITLE: Abram Borisovich Chernin

SOURCE: Elektricheskiye stantsii, no. 5, 1965, 93

TOPIC TAGS: electric engineering, electric engineering personnel

ABSTRACT: An engineer since 1929, A. B. Chernin has worked for years in developing new techniques and equipment for relay protection of electric power systems. In this 60th birthday tribute, he is credited with leading the group which produced the directives on relay protection, contributing to the development of a method for calculating transient processes in long distance 400-500 kv power transmission lines and with aiding in planning of the electric portions of power stations, substations and power systems. The results of his engineering and scientific work have been published 46 times, he is a doctor of technical sciences (since 1963), and has taught for 30 years at the Moscow Power Institute. Orig. art. has: 1 figure. [CPRS]

SUB CODE: 09 / SUBM DATE: none

HW

50
B

IGONIN, P.G.; DORODNOVA, V.S.; ROMANOV, A.V.; MAL'TSEVA, M.Ya.

Structural group composition of paraffin wax and intermediate products from distillates of Terek Valley crudes.
Khim.i tekhn.topl.i masel 7 no.6:26-30 Je '62. (MIRA 15:7)

1. Groznenskiy nauchno-issledovatel'skiy neftyanoy institut.
(Terek Valley--Petroleum)
(Paraffin wax)

IGONIN, P.G.; DORODNOVA, V.S.; SVITKIN, V.V.

Separating higher alcohols from secondary unsaponifiables.
Nefteper. i neftekhim. no.8:23-25 '64. (MIRA 17:10)

1. Grozenenskiy neftyanoy nauchno-issledovatel'skiy institut.

DORODNYKH, B.N., inzh.

Method of calculating the parameters of prestressed wire in
the manufacture of locked coil wire rope. Izv.vys.ucheb.sav.;
gor.shur. no.6:98-107 '59. (MIRA 13:4)

1. Khar'kovskiy gornyy institut. Rekomendovana kafedroy gornoy
mekhaniki.
(Wire rope) (Strains and stresses)

DORODNYKH, B.N., inzh.

Strains occurring in shaped wire in the manufacture of locked
rope. *Izv.vys.ucheb.zav.; gor.zhur. no.8:118-124 '59.*
(MIRA 13:5)

1. Khar'kovskiy gornyy institut. Rekomendovana kafedroy gornoy
mekhaniki.
(Wire rope) (Strains and stresses)

DORODNYKH, B.N., inzh.

Method of calculating parameters in setting the bendability of ropes made with a double twist. Izv. vs. ucheb. zav.; gor. zhur. no.9:105-114 '59. (MIRA 14:6)

1. Khar'kovskiy gornyy institut. Rekomendovana kafedroy gornykh mashin.

(Wire ropes)

DOROFYENKO, G. N., Cand Chem Sci -- (diss) "Studies in the field of carbon-carbonic derivatives carbohydrate." Rostov-on-Don, 1957. 15 pp (Rostov State Univ, Chair of Organic Chemistry), 106 copies (KL, 2-58, 111)

ZHDANOV, Yu.A.; DOROFYENKO, G.N.

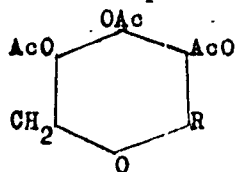
Syntheses in the region of C - C-substituted carbohydrates. (MLRA 10:4)
Dokl. AN SSSR 112 no.3:433-435 Ja '57.

1. Rostovskiy na Donu gosudarstvennyy universitet im.
V.M. Molotova. Predstavleno akademikom A.I. Opafinym.
(Carbohydrates) (Substitution)

DOROFEYENKO, G.N.

AUTHOR ZHDANOV Yu.A., DOROFEYENKO G.N. PA - 3155
TITLE Production of C=C Derivatives of l-Arabinose.
(Sintezy C=C proizvodnykh l-arabinozy -Russian)
PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 3, pp 601-603 (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT In previous works D, 1952, 83, 403 the winning of some monoses (glucose, galactose, xylose) was described according to the method of organomagnesia synthesis. This method has as yet not been employed for the synthesis of C=C-derivatives of l-arabinose. Here the C=C-substitution products of this hydrocarbon was produced synthetically as a result of the interaction of B-chlorotriacetyl-l-arabinose and of the corresponding reagent. They contained the following radicals: phenyl, anisyl, naphthyl, phenethyl, o-tolyl, n-tolyl, thienyl, butyl. The general formula of the compounds obtained is the following:



In the course of the chlorination, bromization, iodation of anisyl- and phenethylarabinose the corresponding halide derivatives are separated.

Card 1/2

Production of C—C-Derivatives of L-Arabinose. PA - 3155

Experiments are described.
(With 3 Slavic references)

ASSOCIATION State Unoversity"V.M.MOLOTOV'S of Rostov
PRESENTED BY OPARIN A.I., Member of the Academy
SUBMITTED 19.11.1956
AVAILABLE Library of Congress
Card 2/2

DOROFEYENKO, G. N.
AUTHORS: Zhdanov, Yu. A., Dorofeyenko, G. N. 20-6-19/47
and Zhivoglazova, L. Ye.

TITLE: The Synthesis of Some Carbon-Carbon Derivatives of Carbohydrates (Sintez nekotorykh uglerod-uglerodnykh proizvodnykh uglevodov)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 6, pp. 990-992 (USSR)

ABSTRACT: As described earlier (references 1 - 4) the organomagnesium method brought about good results in the synthesis of the above-mentioned derivatives of d-glucose, d-galactose, d-xylose and l-arabinose which contain various "aglucones". In the present work this method was employed for the production of some new compounds: phenyl-tetraacetyl-galactose, O-tolyl-triacetyl-xylose, allyl-tetraacetyl-galactose and allyl-triacetyl-arabinose. It was found that the acetylated allyl sugars are capable of adding a chloro-, bromo- and dirhodane-molecule at the double bond of the allyl residue. Haloid-derivatives of the already earlier synthesized phenyl-triacetyl-xylose were also produced. Acetochloromonosaccharides which serve as initial products in the synthesis of the C-C derivatives of hydrocarbons were obtained due to the treatment

Card 1/2

The Synthesis of Some Carbon-Carbon Derivatives of
Carbohydrates

20-6-19/47

of sugar acetates with phosphorus pentachloride and aluminum chloride in a chloroform solution. An experimental part with the description of the production methods of the following compounds is given: β -chloro-triacetyl-1-arabinose, di-bromo-phenetyl-triacetyl-xylose, di-chloro-phenetyl-triacetyl-xylose, dibromo-mallyl-triacetyl-xylose, di-bromo-mallyl-tetraacetyl-glucose, di-rhodone-allyl-tetraacetyl-glucose and di-rhodane-allyl-triacetyl-xylose beside some above-mentioned sugar derivatives together with constants. There are 8 references, 5 of which are Slavic.

ASSOCIATION: Rostov-na-Donu State University (Rostovskiy na-Donu gosudarstvennyy universitet)

PRESENTED: July 23, 1957, by A. I. Oparin, Academician.

SUBMITTED: July 23, 1957

AVAILABLE: Library of Congress

Card 2/2

SOV/74-27-2-3/5

AUTHORS: Zhdanov, Yu. A. , Dorofeyenko, G. N. (Rostov-na-Donu)

TITLE: On Heterocyclic Carbon-Carbon Derivatives of Carbohydrates
(Geterotsiklicheskiye uglerod-uglerodnyye proizvodnyye ugle-
vodov)

PERIODICAL: Uspekhi Khimii, 1958, Vol. 27, Nr 2, pp. 179 - 192 (USSR)

ABSTRACT: Compounds, in which a polyoxaldehyde-, a polyoxyketone- or
a polyalcohol rest is connected with any organic radical
(aliphatic, alicyclic, aromatic or heterocyclic) by single
carbon-carbon bonds, are classed with the C-C-derivatives
of sugars.
In the present article a survey is given on new experimental
data in the field of heterocyclic carbohydrate derivatives and
the attempt is made to generalize these data. Isopropylidene-,
benzylidene- and ethylidene derivatives of sugars, different
oxides (glucosane) and imino sugars, are not treated, because,
according to their properties, they rather belong to the
acetals, anhydro-sugars, amino-sugars, respectively.

Card 1/2

SOV/74-27-2-3/5

On Heterocyclic Carbon-Carbon Derivatives of Carbohydrates

The mentioned compounds can be classified according to the type of the heterocycle, accordingly, the article is divided into the following paragraphs:

- 1) Heterocycles, consisting of 5 parts, which contain nitrogen.
- 2) Benzimidazol derivatives.
- 3) Pyrazine- and piperazine derivatives.
- 4) Quinoxal derivatives.
- 5) Pterine derivatives of carbohydrates.
- 6) Triazol derivatives of sugars.
- 7) Tetrazol derivatives of sugars
- 8) Heterocyclic derivatives, which contain oxygen and sulfur.
- 9) Heterocycles, which contain various and different hetero-atoms.

There are 3 tables and 90 references, 6 of which are Soviet.

Card 2/2

ZHDANOV, Yu.A.; DOROFYENKO, G.N.; BOGDANOVA, G.V.

Use of zinc organic compounds in the synthesis of carbon-carbon
sugar derivatives. Dokl. AN SSSR 119 no.3:495-497 Mr '58.

(MIRA 11:6)

1. Rostovskiy-na-Donu gosudarstvennyy universitet. Predstavleno
akademikom A.I. Operinym.

(Zinc organic compounds) (Sugar)

E(3)

AUTHORS: Zhdanov, Yu. A., Dorofeyenko, G. N.

SCV/79-29-8-50/81

TITLE: Some 2,2'-(Polyoxy-alkylene)-dibenzimidazoles

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2677-2681 (USSR)

ABSTRACT: In the present paper, the authors obtained, according to the method described in reference 2, by condensation of o-phenylene diamine with xylo- and l-arabotrioxo-glutaric acid, the 2,2'-(trioxy-propylene)-dibenzimidazoles hitherto not described. They are of crystalline nature and have a very high melting point. The authors improved the methods of synthesizing the 2-(dioxo-ethylene)-benzimidazole and 2,2'-(dioxo-ethylene)-dibenzimidazole (according to C. S. Hudson and coworkers, Ref 7), in which connection the yields increased by using a mixture of hydrochloric and orthophosphoric acid as condensing agent, and the chlorides, picrates and the diacetyl derivative of the latter, which have hitherto not been described, were obtained. It was found that some acetylated aldonic and saccharic acids could be identified in the form of imidazole derivatives in good yields. On condensation of o-phenylene diamine, a complete separation of the acetyl groups takes place, yielding the same products as in the reaction

Card 1/2

Some 2,2'-(Polyoxy-alkylene)-dibenzimidazoles

SCV/79-29-B-50/81

of the aldonic and saccharic acids. Thus the tetracetyl-mucic acid and its acid dichloride produce dibenzimidazole derivatives when heated with 2 moles of o-phenylene diamine in the presence of mineral acid (50-60% yield). On condensation of the γ -lactone of the tetracetyl-d-galactonic acid with o-phenylene diamine, the 2-[(d-galacto)-pentoxy-amyl]-benzimidazole (61%) was formed. In addition to the main products, 2-methyl-benzimidazole was obtained in all cases as side product. The resultant benzimidazole products are readily oxidized by potassium permanganate solution, and give, according to the data of C. F. Huebner and coworkers (Ref 8), benzimidazole-2-carboxylic acid in good yield. 2,2'-(dioxy-ethylene)-dibenzimidazole yields, on oxidation with sodium periodate, quantitatively 2-formyl-benzimidazole which is transformed by oxidation of alkaline H_2O_2 -solution into the benzimidazole-2-carboxylic acid. There are 14 references, 2 of which are Soviet.

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet (Rostov-na-Donu State University)

SUBMITTED: May 17, 1958
Card 2/2

DOROFYENKO, G.N.; ZHDANOV, Yu.A.

Synthesis of some carbon-carbon derivatives of 2-deoxyglucose. Uch.
zap.RGU no.60:211-215 '59. (MIRA 14:10)
(Glucose)

S/153/60/003/004/023/040/XX
B020/B054

AUTHORS: Zhdanov, Yu. A., ~~Dorofayenko, G. N.~~, Ivanchenko, N. V.
TITLE: Synthesis of Some Indole and Hexachlorane Derivatives of
Monosaccharides
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
khimicheskaya tekhnologiya, 1960, Vol. 3, No. 4,
pp. 680 - 683

TEXT: The authors study the possibility of synthesizing some hetero-
cyclic derivatives of carbohydrates by the Grignard reaction. For this
purpose, they investigated the reaction of acetoalogenoses with indolyl
magnesium bromide. It is known that organomagnesium compounds of the
indole series form, as a rule, β -substituted indole derivatives under
the action of alkyl- and acyl halides. The reaction of indolyl magnesium
bromide with acetoalogenoses proceeds similarly, and yields β -indole
derivatives of monosaccharides. The resulting β -indolyl sugars were fur-
ther acetylated by acetic anhydride dissolved in pyridine, and isolated
in the form of crystalline acetylated compounds. By means of the

Card 1/3

Synthesis of Some Indole and Hexachlorane
Derivatives of Monosaccharides

S/153/60/003/004/023/040/XX
B020/B054

Grignard reaction it was possible to synthesize β -indolyl tetraacetyl glucose, β -indolyl tetraacetyl galactose, and 3-indolyl triacetyl xylose. The resulting compounds are C - C derivatives, not N-glucosides, which is confirmed by the presence of active hydrogen, and by the results of oxidation with permanganate. The synthesis of heterocyclic derivatives with a pyrrole radical was not possible in the way indicated. The authors continued the investigation of the halogenation of acetylated aryl sugars, and found that phenyl tetraacetyl galactose and phenyl triacetyl xylose, as well as phenyl tetraacetyl glucose (Ref.7), readily add six chlorine atoms, thus forming hexachloro cyclohexanone derivatives of carbohydrates which are isolated in sirupy consistency. The authors thoroughly describe the synthesis of β -indolyl tetraacetyl-d-glucose, β -indolyl tetraacetyl-d-galactose, β -indolyl triacetyl-d-xylose, and hexachloro cyclohexyl tetraacetyl-d-galactose, and study the reaction of 2,4-dimethyl pyrrole magnesium bromide with α -chloro tetraacetyl-d-glucose. There are 9 references: 5 Soviet, 2 US, and 2 German. ✓

Card 2/3

Synthesis of Some Indole and Hexachlorane
Derivatives of Monosaccharides

S/153/60/003/004/023/040/XX
B020/B054

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet, kafedra
organicheskoy khimii (Rostov-na-Donu State University,
Department of Organic Chemistry)

SUBMITTED: November 10, 1958

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Card 3/3

DOROSYETRO, G.H.

Simple method for preparing certain aromatic and heterocyclic
ketones. Zhur. VKHO 5 no. 3:354-355 '60. (MIRA 14:2)

1. Leningkiy sol'skokhozyaystvennyy institut.
(Ketones)

MINKIN, V. I.; DOROFYENKO, G. N.

Formylation and acylation of organic compounds with substituted amides
of carboxylic acids. Usp. khim. 29 no. 11:1301-1335 N '60.

(MIRA 13:11)

1. Rostovskiy-na-Donu gosudarstvennyy universitet i Luganskiy
sel'skokhozyaystvennyy institut.

(Formylation) (Acylation) (Amides)

DOROFYENKO, G.N.

Oxidation of monosaccharides and polyatomic alcohols with mercuric acetate in an aqueous solution. Ukr. khim. zhur. 27 no. 1:114-117 '61.
(MIRA 14:2)

1. Luganskiy sel'skokhozyaystvennyy institut.
(Alcohols) (Monosaccharides) (Mercury acetate)

DOROFYENKO, G.N.; ZHDANOV, Yu.A.

Processes employed in the conversion of carbohydrates to carbocyclic compounds. Usp.khim. 30 no.10:1197-1214 0 '61. (MIRA 14:9)

1. Stalinskoye otdeleniye Instituta organicheskoy khimii AN USSR
i Rostovskiy-na-Donu gosudarstvennyy universitet.
(Carbohydrates) (Cyclic compounds)

DOROFEYENKO, G.N.; ZHDANOV, Yu.A.

Carbon-substituted carbohydrates with heterocyclic aglucons. Part 2:
Reaction of 1, 2-naphthylenediamine with aldonic acids. Zhur.ob.khim.
30 no.10:3451-3454 0 '61. (MIRA 14:4)

1. Luganskiy sel'skokhozyaystvennyy institut i Rostovskiy-na-Donu
gosudarstvennyy universitet.
(Naphthalenediamine) (Aldonic acid)

DOROFYENKO, G.N

Catalytic acetylation of certain aromatic and heterocyclic compounds in the presence of perchloric acid. Zhur. ob. khim. 31 no.3:994-997 Mr '61. (MIRA 14:3)

1. Luganskiy sel'skokhozyaystvennyy institut.
(Acetylation) (Perchloric acid)

DOROFYENKO, G.N.; DULENKO, V.I.

Acylation of organic compounds with carboxylic acid chlorides in the presence of perchloric acid. Zhur.ob.khim. 31 no.9:3145 S '61. (MIRA 14:9)

1. Stalinskoye otdeleniye Instituta organicheskoy khimii AN Ukrainskoy SSR.
(Acids, Organic) (Perchloric acid)

ZHDANOV, Yuriy Andreyevich; DOROFEYENKO, Gennadiy Nikolayevich;
SHPANOV, V.V., red.; DOROKHINA, I.N., tekhn. red.

[Chemical transformations of the carbon skeleton structure of
carbohydrates] Khimicheskie prevrashcheniya uglerodnogo skeleta
uglevodov. Moskva, Izd-vo Akad. nauk SSSR, 1962. 210 p.

(MIRA 15:12)

(Carbohydrates) (Chemistry, Organic)

DOROFYENKO, G.N.; KARBAN, V.I.

p-Methoxyvalerophenone. Met. poluch. khim. reak. 1 prepar.
no.6:85-87 '62.

p-Ethoxybutyrophenone. Ibid.:87-89. (MIRA 17:5)

1. Institut organicheskoy khimii AN UkrSSR, Donetskoye
otdeleniye.

DOROFYENKO, G.N.; DULENKO, V.I.

Magnesium perchlorate (anhydrous), a new catalyst for acylation.
Zhur.VKHO 7 no.1:120 '62. (MIRA 15:3)

1. Donetskoye otdeleniye Instituta organicheskoy khimii AN USSR.
(Magnesium perchlorate) (Acylation)

DOROFYENKO, G.N.; POLISHCHUK, L.V.

Perchloric acid and its compounds as catalysts in organic synthesis. Part 3: Acetylation of certain aromatic hydrocarbons and ethers of monohydric and polyhydric phenols. Zhur.ob.khim. 32 no.2:364-367 F '62. (MIRA 15:2)

1. Donetskoye otdeleniye Instituta organicheskoy khimii AN USSR.

(Ethers)
(Hydrocarbons)
(Acetylation)

DGROFYEYENKO, G.N.; KRIVUM, S.V.

New method of synthesizing pyrylium salts. Zhur.ob.khim. 32
no.7:2386-2387 JI '62. (MIRA 15:7)

1. Donetskoye otdeleniye instituta organicheskoy khimii AN
Ukrainskoy SSR.
(Pyrylium compounds)