DIKIY, B.F., inzhener.

Electrical scheme for controlling a lamp or signal from two points. Energetik 1 no.2:21-22 Jl '53. (MLRA 6:8)
(Electric wiring)

DIKIY, B.F.

AUTHOR: Dikiy, B.F., Ivashchenko, B.P. 32-9-27/43

TITLE: A Photorefractometer for the Automation of Control Processes (Fotorefraktometr dlya avtomatizatsii protsessov kontrolya)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 9, pp.1124-1125 (USSR)

ABSTRACT: A refractometer, which can be mounted in a production apparatus and which can be used in order to obtain signals for the automation of control in the technical production of tomato pulp is constructed. In the case of the photorefractometer developed here the light does not pass from the solution to the prism, but, unlike what is the case with other refractometers, through the prism into the solution. The apparatus is then described. From the diagrams obtained it may be seen that, with a reduced angle of incidence of light down to a certain amount which depends on the concentration of tomatoes, the signal increases considerably. The maximum of the ratio of signal amounts produced in the case of different degrees of concentration of tomatoes, is attained at a certain angle of incidence of light. By using the diagrams the device is adjusted for a maximum degree of sensitivity for changes of tomato concentration within the limits of the given

32-9-27/43

A Photorefractometer for the Automation of Control Processes

domain. The device makes it possible to determine the percentile content of dry substances with an accuracy of ± 0.1% abs. There are 2 figures.

ASSOCIATION: Technological Institute of the Food and Refrigeration Industry of Odessa (Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti)

AVAILABLE: Library of Congress

Card 2/2

DIKIS, M.Ya.; MAL'SKIY, A.N.; SOKOLOV, M.Ya., doktor tekhnicheskikh nauk, retsenzent.

[Canning plant machinery] Tekhnologicheskoe oborudovanie konservnykh zavodov. Moskva, Pishchepromizdat, 1953. 540 p. (MLRA 7:8)
(Canning industry)

DIKIS, M. YA.

Dikis, M. Ya., "An Automatic Regulator for the Concentration of Tomato-Paste in the Final Vessel of a Vacuum-evaporation Installation," Traktaty odesskogo tekhnologicheskogo instituta pishchevoy i kholodil'noy promyshlennosti /Transactions of the Odessa Food and Refrigeration Technological Institute/, 1953, Volume V, Issue 2, Pages 151-164; bibliography, 7 items.

DIKIS, M.Ya., kandidat tekhnicheskikh nauk, dotsent; KOGAN, L.I., inzhe-
[redacted] redaktor; LEUTA, V.I., inzhener, redaktor; RUDENSKIY, Ya.V., tekhnicheskiy redaktor

[Automatic machines for hermetically sealing canned goods] Mashiny-avtomaty dlia germetizatsii konservnoi tary. Kiev, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1955 205 p. (MIRA 9:2)
(Canning and preserving--Apparatus and supplies)

DIKIS, Mikhail Yakovlevich -- awarded sci degree of Doc Tech Sci for the 10 May 57 defense of dissertation: "Technological equipment of canning factories and the basic problems in improving it" at the Council, Kiev Technolog Inst of Food Ind imeni Mikoyan; Prot No 11, 10 May 58. (BMVO, 10-58,20)

DIKIS, M.Ya.

Regulating the operation of continuous vacuum evaporators on the basis of the consumption of heating steam. Izv. vys. ucheb. zav.; pishch. tekh. no.3:132-135 '58. (MIRA 11:9)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti, Kafedra tekhnologicheskogo oborudovaniya pishchevykh proizvodstv.

(Evaporating applieances)

DIKIS, M.Ya.

Improving heat exchange in steam-heated fryers. Kons. i ov. prom. 13 no.7:16-18 Jl '58. (MIRA 11:6)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti.
(Food industry--Equipment and supplies)

DIKIS, M.Ya.

Nomogram for power calculations for seaming machines. Kons. i ov. prom. 13 no.10:19-21 O '58. (MIRA 11:10)

1.Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti.
(Container industry--Equipment and supplies)

DIKIS, M.Ya.

Continuous sterilizers with a automatic thermally actuated bellows sealing device for glass jars. Kons. i ov. prom. 13 no.12:17-19 D '58. (MIRA 11:12)

1.Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti.
(Canning industry--Equipment and supplies)

GERNET, M.M., doktor tekhn.nauk,prof.; DIKIS, M.Ya., doktor tekhn.nauk, prof.; LUK'YANOV, V.V., doktor tekhn.nauk,prof.[deceased]; POPOV, V.I., doktor tekhn.nauk,prof.; SOKOLOV, A.Ya.,doktor tekhn.nauk,prof.; SOKOLOV,V.I.,doktor tekhn.nauk,prof.; SURKOV,V.D.,doktor tekh.nauk,prof.; BARANOVSKIY, N.V., kand.tekhn.nauk,dots.; BROYDO, B.Ye., kand.tekhn. nauk, dots.; BUZYKIN, N.A., kand.tekhn.nauk, dots.; GOROSHENKO, M.K., kand.tekhn.nauk, dots.; GORTINSKIY, V.V., kand.tekhn.nauk, dots.; GREBENYUK, S.M., kand.tekhn.nauk, dots.; GUS'KOV, K.P., kand.tekhn. nauk, dots.; DEMIDOV, A.R., kand.tekhn.nauk, dots.; ZHISLIN, Ya.M., kand.tekhn.nauk, dots.; KARPIN, Ye.B., kand.tekhn.nauk, dots.; KOSITSYN, I.A., kand. tekhn.nauk, dots. [deceased]; GEYSHTOR, V.S., kand.tekhn.nauk, dots.; MARSHALKIN, G.A., kand.tekhn.nauk, dots.; MOLDAVSKIY, G.Ye., kand.tekhn.nauk, dots.; ODESSKIY, D.A., kand. tekhn.nauk, dots.; PELEYEV, A.I., kand.tekhn.nauk, dots.; RUB, D.M., kand.tekhn.nauk, dots.; SKOBLO, D.I., kand.tekhn.nauk, dots.; SHUVALOV, V.N., kand.tekhn.nauk, dots.; KHMEL'NITSKAYA, A.Z., red.; SOKOLOVA, I.A., tekhn. red.

[Principles of the design and construction of machinery and apparatus for the food industries] Osnovy rascheta i konstruirovaniia mashin i apparatov pishchevykh proizvodstv. Moskva, Pishchepromizdat, 1960. 741 p. (MIRA 14:12)

(Food industry—Equipment and supplies)

DIKIS, M.Ya.

More about the sterilizer of continuous action. Kons.i ov. prom. 16 no.2:13-14 F '61. (MIRA 14:4)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti.
(Food, Canned—Sterilization)

DIKIS, Mikhail Yakovlevich, prof.; MAL'SKIY, Aleksandr Nikolayevich, dots.; SOKOLOV, A.Ya., doktor tekhn. nauk, prof., retsenzent; BUZYKIN, N.A., kand. tekhn. nauk, dotsent, retsenzent; SKOBLO, D.I., kand. tekhn. nauk, dots., retsenzent; KHMEL'NITSKAYA, A.Z., red.; KISINA, Ye.I., tekhn. red.

[Machinery and equipment for canneries] Tekhnologicheskoe oborudovanie konservnykh zavodov. Izd.3., dop. i perer. Moskva, Pishchepromizdat, 1961. 539 p. (MIRA 15:1)
(Canning industry—Equipment and supplies)

DIKIS, M.Ya.; MOLDAVSKIY, G.Kh.

Urgent objectives of the tin can manufacture. Kons.i ov.prom. 16 no.5:19-22 My '61. (MIRA 14:5)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti.

(Tin cans)

DIKIS, M.Ya.; MOROZOV, N.V.; AMINOV, M.S.

Air as heat carrier for the sterilization of canned food in glass containers. Izv.vys.ucheb.zav.; pishch.tekh. no.4: 128-132 '62. (MIRA 15:11)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti, kafedra tekhnologicheskogo oborudovaniya pishchevykh proizvodstv.

(Heat--Transmission)
(Food, Canned--Sterilization)

DIKIS, M.Ya.; AMINOV, M.S.

Vacuum deep-frying of vegetables. Kons.i ov.prom. 17 no.5:12-15 My '62. (MIRA 15:5)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti.
(Canning and preserving)

DIKIS, Mikhail Yakovlevich; MAL'SKIY, Aleksandr Nikolayevich; RABINER, N.Ya., kand. tekhn. nauk, retsenzent; STEPANOV, N.V., inzh., retsenzent; KHMEL'NITSKAYA, A.Z., red.; SATAROVA, A.M., tekhn. red.

[Equipment of canning plants] Oborudovanie konservnykh zavodov. Izd.3., dop. i perer. Moskva, Pishchepromizdat, 1962. 468 p. (MIRA 16:4)

(Canning industry--Equipment and supplies)

DIKIS, M.Ya.

Basic requirements for machinery and apparatus of mechanised production lines in the canning industry. Kons. i ov.prom. 18 no.3:3-5 Mr '63. (MIRA 16:3)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti.

(Canning industry—Equipment and supplies)
(Assembly-line methods)

DIKIS, M.Ya.; ROMATOVSKAYA, T.L.

Calculating the cooling time of fried fish in a liquid cooling medium. Izv.vys.ucheb.zav.; pishch.tekh. no.5:83-86 '63. (MIRA 16:12)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti, kafedra tekhnologicheskogo oborudovaniya pishchevykh proizvodstv.

DIKIS, M.Ya.; GLADUSHNYAK, A.K.

Effect of the angle of inclination of the jet on the area of the washed-out soiled surface of glass containers. Izv. vys. ucheb. zav.; pishch. tekh. no.6:121-124 '63. (MIRA 17:3)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti, kafedra tekhnologicheskogo oborudovaniya pishchevykh proizvodstv.

DIKIS, M. Ya.; CHERNIGOV, A. N.

Contact heating of liquid food products by water vapor. Izv.vys. ucheb.zav.; pishch.tekh.no. 2:84-87 '64. (MIRA 17:5)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti, kafedra tekhnologicheskogo oborudovaniya pishchevykh proizvodstv.

PHASE I BOOK EXPLOITATION SOV/4518

Dikiy, Aleksandr Danilovich, Candidate of Technical Sciences, and Ivan Andreyevich Soldatov

Peredatchiki radiotekhnicheskikh sredstv (Radio Transmitters) Moscow, Voyenizdat, 1960. 367 p. No. of copies printed not given.

Ed.: V. L. Sterligov, Engineer, Major; Tech. Ed.: N. V. Sribnis.

PURPOSE: This is a textbook intended for students in higher military engineering schools and can also be used by those studying the theory of transmitting systems in schools of higher education.

COVERAGE: The textbook sets forth the fundamentals of the theory of transmitting systems, the principles of circuit design, and the elements of their computation, with special emphasis on radar systems. A. D. Dikiy wrote the introduction and Chapters I, VI, VII, VIII, IX, and XI; I. A. Soldatov wrote Chapters II, III, IV, V, and VII; Chapter X was written by I. Ye. Khvatovker,

Card 1/7

Candidate of Technical Sciences. No personalities are mentioned. There are 14 references, all Soviet (including 2 translations).

TABLE OF CONTENTS:

S/781/62/000/000/034/036

AUTHORS: Silenok-Bel'skiy, G. A., Dikiy, A. G., Solodovchenko, S. I. Vitsenko, V. I.

TITLE: Measurement of electron concnetration in a plasma at low frequencies

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, 165- 167.

TEXT: A method has been developed for measuring the concentration and collision frequency of electrons by determining the change in impedance of a solenoid into which the plasma is introduced. The electromagnetic field of the sounding signal was given a configuration such as to avoid electric polarization. Several schemes for density measurements were tried, and the best turned out to be the usual method of measuring the Q of a resonant circuit. The experiments were carried out at pressures 10^{-1} - 10^{-2} mm Hg, and the densities measured were in the range from 4×10^{9} to 5×10^{10} el/cm^3. There are three figures.

Card 1/1

S/781/62/000/000/035/036

AUTHORS: Silenok-Bel'skiy, G. A., Dikiy A. G., Solodovchenko, S. I.

TITLE: Plasma electron concentration measurement with a resonator

SOURCE: Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza; doklady I konferentsii po fizike plazmy i probleme upravlyayemykh termoyadernykh reaktsiy. Fiz.-tekh. inst. AN Ukr. SSR. Kiev, Izd-vo AN Ukr. SSR, 1962. 167-169

TEXT: A method is proposed for measuring plasma electron concentration by determining the change in the dispersion properties of a waveguide system in which the plasma is placed, since the phase velocity of wave propagation in a waveguide system filled with plasma depends not only on the geometry of the system, the boundary conditions, and the frequency, but also on the electron concentration as well as the magnetic field, the collision frequency, and the type of gas. The effect of the plasma on the phase velocity in a waveguide with a helix partly filled with plasma was investigated experimentally. The apparatus and experimental conditions are briefly described. The experiments were carried out without a magnetic field, and it is indicated that application of the field would

Card 1/2

Plasma electron concentration measurement ... S/781/62/000/000/035/036

extend the range of electron density for which the method is applicable. The quantities actually determined are the electron density and the collision frequency. There are three figures.

Card 2/2

ACC NR: AP7003614 SOURCE CODE: UR/0185/66/011/012/1341/1344

AUTHOR: Borovyk, Ye. S.— Borovik, Ye. S.; Dykyy, A. P.— Dikiy, A. P.; Mamaluy, Yu. O.—Mamaluy, Yu. A.

ORG: Khar'kov State University im. O.M. Gor'kiy (Kharkivs'kyy derzhuniversytet)

TITLE: Magnetostriction of ferroxplans

SOURCE: Ukrayins'kyy zhurnal, v. 11, no. 12, 1966, 1341-1344

TOPIC TAGS: magnetostriction, magnetic permeability, ferromagnetic material, cobalt containing alloy, nickel containing alloy

ABSTRACT: The magnetostriction of mixed ferroxplans of the type $Co_yNi_{z-y}W_{va}$ (where W_{va}-$BaO\cdot6Fe_2O_3$), and of some pure ferroxplans of the W type was measured. The measurements were made on polycrystalline samples with values of y = 0, 0.2, 0.4, 0.7, 1, 1.5, and 2. The ferroxplans investigated were in the form of solid solutions having different signs of the first anisotropy constant K_1. Investigation of the anisotropy energy and the magnetic permeability of such systems of mixed ferroxplans showed that, for given composition, a minimum of anisotropic energy and a maximum permeability exist. The value of the

Card 1/2

ACC NR: AP7003614

anisotropy energy is small because with the given concentration of Co ions in ferroxplan the first anisotropy constant changes its sign, i.e. $K_1 \sim 0$ for this composition. Measurements of magnetostriction showed that saturation magnetostriction of all investigated ferroxplans has a negative value. Orig. art. has: 3 figures and 1 formula.

SUB CODE: 20/ SUBM DATE: 31Mar66/ ORIG REF: 005/ OTH REF: 004

Card 2/2

DIKIY, B.F., kand.tekhn.nauk

Disconnecting and blocking device containing a mechanism for signaling the fault of an electric motor on continuous production lines. Energetik 9 no.5:27-29 My '61. (MIRA 14:5)

(Automatic control)
(Electric driving)
(Assembly-line methods)

DIKIY, B.F., kand.tekhn.nauk, dotsent; IVASHCHENKO, B.P., assistant; SEMENENKO, V.I., starshiy laborant

New submersible photorefractometer for the automatic control of evaporation. Trudy OTIPiKhP 9 no.2:143-148 '59. (MIRA 13:9)
(Refractometer) (Densitometers)

DIKIY, B.F. [Dykyi, B.F.]; LOMAKIN, V.F.

Conductophotometric transducer for wine flow control. Kharch.prom. no.
4:63 O-D '63. (MIRA 17:1)

DIKIY, B.F.; KHAYUTIN, Yu.D.

Continuous control of the concentration of homogenized tomato pulp. Izv. vys. ucheb. zav.; pishch. tekh. no.6: 136-138 '63. (MIRA 17:3)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy promyshlennosti, kafedra avtomatiki.

DIKIY, Boris Fedorovich; LOMAKIN, Vladimir Filippovich; DREVS, G.V., dots., retsenzent; ZAYCHIK, TS.R., inzh., retsenzent; YERMOKHINA, N.V., red.

[Automation of the processes in wine making] Avtomatizatsiia protsessov vinodeliia. Moskva, Pishchevaia promyshlennost', 1964. 365 p. (MIRA 17:9)

DIKIY, G.F.; BUTENKO, B.M.; IVASHKEVICH, Yu.K.; IVASHCHENKO, B.P.; LOMAKIN, V.F.

[Automation of production processes in the wine and brandy making factory in Tiraspol] Avtomatizatsiia proizvodstvennykh protsessov na Tiraspol'skom vinnokon'iachnom zavode. Moskva, TSentr. in-t nauchno-tekhn. informatsii pishchevoi promyshl., 1964. 32 p. (MIRA 17:11)

ACC NR: AP6034905 SOURCE CODE: UR/0382/66/000/002/0032/0038

AUTHOR: Dikiy, G. P.; Kostenko, P. P.; Selivanov, V. G.; Frolov, S. D.

ORG: none

TITLE: Conducting gas flow in an annular duct in the presence of an axial magnetic field

SOURCE: Magnitnaya gidrodinamika, no. 2, 1966, 32-38

TOPIC TAGS: axial magnetic field, gas flow, laminar flow, annular duct, magnetohydrodynamic generator

ABSTRACT: The authors attempt an analytical calculation of the influence of azimuth currents on the electrical efficiency of an MHD converter. Approximate values of the radial-velocity component and the gas temperature are simultaneously calculated and given. The paper examines the laminar flow of a conducting gas in an annular duct of an MHD converter in the presence of an axial magnetic field. The above-mentioned influence of azimuth currents on the efficiency of the generator was found. Orig. art. has: 8 formulas.

SUB CODE: 20/SUBM DATE: 09Jun65/ ORIG REF: 003/ OTH REF: 002/

Card 1/1 UDC: 533.95:538.4

42211
S/057/62/032/011/003/014
B104/B102

24.2120

AUTHORS: Dikiy, G. P., and Tarapov, I. Ye.

TITLE: Some self-similation problems of magnetohydrodynamics with axial symmetry

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 11, 1962, 1302-1312

TEXT: The nonstationary equations of magnetohydrodynamics for an incompressible viscous fluid of finite conductivity are given by Eq. (1) and (2) if axial symmetry is assumed and cylindrical coordinates are used:

$$\left.\begin{aligned}
&\frac{\partial H_r}{\partial t}+v_r\frac{\partial H_r}{\partial r}=H_r\frac{\partial v_r}{\partial r}+\nu_m\frac{\partial}{\partial r}\left(\frac{1}{r}\frac{\partial}{\partial r}(rH_r)\right),\\
&\frac{\partial H_\varphi}{\partial t}+v_r\frac{\partial H_\varphi}{\partial r}+\frac{v_\varphi H_r}{r}=H_r\frac{\partial v_\varphi}{\partial r}+\frac{H_\varphi v_r}{r}+\nu_m\frac{\partial}{\partial r}\left(\frac{1}{r}\frac{\partial}{\partial r}(rH_\varphi)\right),\\
&\frac{\partial H_z}{\partial t}+v_r\frac{\partial H_z}{\partial r}=H_r\frac{\partial v_z}{\partial r}+\nu_m\frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial H_z}{\partial r}\right);\quad \frac{1}{r}\frac{\partial}{\partial r}(rH_r)=0.
\end{aligned}\right\}\qquad(1)$$

Card 1/6

$$\left.\begin{aligned}
&\frac{\partial v_r}{\partial t}+v_r\frac{\partial v_r}{\partial r}-\frac{v_\varphi^2}{r}=-\frac{1}{\rho}\frac{\partial P_m}{\partial r}+\frac{1}{4\pi\rho}\left(H_r\frac{\partial H_r}{\partial r}-\frac{H_\varphi^2}{r}\right)+\\
&\qquad+\nu\frac{\partial}{\partial r}\left(\frac{1}{r}\frac{\partial}{\partial r}(rv_r)\right),\\
&\frac{\partial v_\varphi}{\partial t}+v_r\frac{\partial v_\varphi}{\partial r}+\frac{v_r v_\varphi}{r}=-\frac{1}{\rho r}\frac{\partial P_m}{\partial \varphi}+\frac{1}{4\pi\rho}\left(H_r\frac{\partial H_\varphi}{\partial r}+\frac{H_r H_\varphi}{r}\right)+\\
&\qquad+\nu\frac{\partial}{\partial r}\left(\frac{1}{r}\frac{\partial}{\partial r}(rv_\varphi)\right),\\
&\frac{\partial v_z}{\partial t}+v_r\frac{\partial v_z}{\partial r}=-\frac{1}{\rho}\frac{\partial P_m}{\partial z}+\frac{1}{4\pi\rho}H_r\frac{\partial H_z}{\partial r}+\nu\frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial v_z}{\partial r}\right),\\
&\frac{1}{r}\frac{\partial}{\partial r}(rv_r)=0;\quad P_m=p+\frac{H^2}{8\pi},
\end{aligned}\right\} \qquad (2)$$

(L. D. Landau and Ye. M. Lifshits, Elektrodinamika sploshnykh sred - Electrodynamics of continuous media, GITTL, M., 1957). From these equations follows

$$\left. \begin{aligned} P_m &= P_1(t, r) + P_2(t) \cdot z, \\ v_r &= \frac{Q(t)}{2\pi}; \quad H_r = \frac{\Phi(t)}{2\pi} \frac{1}{r}, \end{aligned} \right\} \quad (3),$$

where Q(t) is the quantity of fluid passing through the cylindrical surface, and $\Phi(t)$ is the magnetic flux. $\Phi(t)$ is constant and Q(t) is assumed to be constant. $P_2(t)$ is assumed known and $P_1(t,r)$ is obtained by integrating the first equation of (2). The problem is thus reduced to the determination of v_φ, v_z, H_φ, and H_z from the system

$$\begin{aligned} &\frac{\partial H_\varphi}{\partial t} + \frac{Q}{2\pi r}\frac{\partial H_\varphi}{\partial r} + \frac{\Phi}{2\pi r^2} v_\varphi = \frac{\Phi}{2\pi r}\frac{\partial v_\varphi}{\partial r} + \frac{Q}{2\pi r^2} H_\varphi + \nu_m \frac{\partial}{\partial r}\left(\frac{1}{r}\frac{\partial}{\partial r}(rH_\varphi)\right). \\ &\frac{\partial v_\varphi}{\partial t} + \frac{Q}{2\pi r}\left(\frac{\partial v_\varphi}{\partial r} + \frac{v_\varphi}{r}\right) = \frac{\Phi}{8\pi^2 \rho r}\left(\frac{\partial H_\varphi}{\partial r} + \frac{H_\varphi}{r}\right) + \nu \frac{\partial}{\partial r}\left(\frac{1}{r}\frac{\partial}{\partial r}(r v_\varphi)\right), \\ &\frac{\partial H_z}{\partial t} + \frac{Q}{2\pi r}\frac{\partial H_z}{\partial r} = \frac{\Phi}{2\pi r}\frac{\partial v_z}{\partial r} + \nu_m \frac{1}{r}\frac{\partial}{\partial r}\left(r \frac{\partial H_z}{\partial r}\right), \\ &\frac{\partial v_z}{\partial t} + \frac{Q}{2\pi r}\frac{\partial v_z}{\partial r} = -\frac{P_2(t)}{\rho} + \frac{\Phi}{8\pi^2 \rho r}\frac{\partial H_z}{\partial r} + \nu \frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial v_z}{\partial r}\right). \end{aligned} \quad (4).$$

The solution of (4) are sought in the form

$$\left.\begin{array}{ll} H_\varphi = H_{\varphi 0} r^\alpha g(\zeta), & H_z = H_{z0} r^\beta h(\zeta), \\ v_\varphi = v_{\varphi 0} r^\alpha f(\zeta), & v_z = v_{z0} r^\beta \psi(\zeta), \\ & P_2(t) = P_{20} \cdot t^{\beta - 4}. \end{array}\right\} \quad (5)$$

where $H_{\varphi o}$, H_{zo}, $v_{\varphi o}$, v_{zo}, P_{2o} and β are constants and the dimensionless functions g, h, f, and ψ are functions of the dimensionless variable $\zeta = r^2/4\nu t$. Assuming the form (5) the system:

$$-4\zeta^2 g' + \frac{Q}{2\pi\nu}[(\alpha-1)g + 2\zeta g'] = \frac{\Phi v_{\varphi 0}}{2\pi\nu H_{\varphi 0}}[(\alpha-1)f + 2\zeta f'] + \frac{\nu_m}{\nu}[(\alpha^2-1)g + 4(\alpha+1)\zeta g' + 4\zeta^2 g''],$$

$$-4\zeta^2 f' + \frac{Q}{2\pi\nu}[(\alpha+1)f + 2\zeta f'] = \frac{\Phi H_{\varphi 0}}{8\pi^2 \rho\nu v_{\varphi 0}}[(\alpha+1)g + 2\zeta g'] + (\alpha^2-1)f + 4(\alpha+1)\zeta f' + 4\zeta^2 f'', \quad (7)$$

$$-4\zeta^2 h' + \frac{Q}{2\pi\nu}[\beta h + 2\zeta h'] = \frac{\Phi v_{z0}}{2\pi\nu H_{z0}}[\beta\psi + 2\zeta\psi'] + \frac{\nu_m}{\nu}[\beta^2 h + 4(\beta+1)\zeta h' + 4\zeta^2 h''],$$

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000410330009-1"

$$-4\zeta^2\psi' + \frac{Q}{2\pi\nu}[\beta\psi + 2\zeta\psi'] = -\frac{P_{20}\zeta^{4-2\gamma}}{\nu\rho v_{z0}(4\nu)^{2\gamma-4}} + \frac{\Phi H_{z0}}{8\pi^2\rho\nu v_{z0}}[\beta h + 2\zeta h'] + \beta^2\psi + 4(\beta+1)\zeta\psi' + 4\zeta^2\psi''.$$

is obtained which cannot be solved in general. For the following special cases (7) is solved: (1) In an investigation of the vortex sources in the usual hydrodynamics (H = 0) it is shown that an initial vortex source of the form $v_r = Q/2\pi r$, $v = \gamma_0/2\pi r$, does not change its configuration and that sources or sinks alter the diffusion velocity of the vortex in the fluid. (2) The diffusion of the vortex of the magnetic field: The problem leads to the solution of the first equation of (7) with $\alpha = -1 + Q/2$. (3) The damping of a magnetic vortex field in a rotating fluid in the presence of a radial magnetic field: The functions $g(\xi)$ and $f(\xi)$ are determined from the first two equations of the system (7). (4) The damping of the axial magnetic field in the presence of a sink: H_z is determined as a function of time from the function $h(\xi)$ which satisfies the third equation of the system (7) with $\beta = Q/2$. (5) The damping of the axial magnetic field and the axial motion of the fluid in

Some self-similation problems ... S/057/62/032/011/003/014
B104/B102

the presence of a constant radial field: The solution of the nonstationary problem has the form:

$$H_z(t, r) = \frac{\Phi}{2\pi\nu_m} C r^{-\lambda} h(\zeta),$$
$$v_z(t, r) = \lambda C r^{-\lambda} \psi(\zeta).$$

where $h(\zeta)$ and $\psi(\zeta)$ satisfy the last two equations of (7) with $\beta = -\lambda$. There are 5 figures.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A. M. Gor'kogo (Khar'kov State University imeni A. M. Gor'kiy)

PRESENTED: June 26, 1961 (initially)

SUBMITTED: December 15, 1961 (after revision)

S/057/62/032/011/004/014
B104/B102

AUTHORS: Dikiy, G. P., and Tarapov, I. Ye.

TITLE: Some stationary problems of magnetohydrodynamics with axial symmetry

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 11, 1962, 1333-1341

TEXT: The stationary motion of an incompressible viscous fluid with finite conductivity is considered assuming that $\vec{v}$ and $\vec{H}$ are independent of the coordinates φ and z. In this case the general magnetohydrodynamics in cylindrical coordinates lead to:

$$v_r \frac{dH_r}{dr} = H_r \frac{dv_r}{dr} + \nu_m \frac{dr}{dr}\left(\frac{1}{r}\frac{d}{dr}(rH_r)\right);$$
$$v_r \frac{dH_\varphi}{dr} + \frac{v_\varphi H_r}{r} = H_r \frac{dv_\varphi}{dr} + \frac{H_\varphi v_r}{r} + \nu_m \frac{d}{dr}\left(\frac{1}{r}\frac{d}{dr}(rH_\varphi)\right); \quad (1)$$
$$v_r \frac{dH_z}{dr} = H_r \frac{dv_z}{dr} + \nu_m \frac{1}{r}\frac{d}{dr}\left(r\frac{dH_z}{dr}\right);$$
$$\frac{1}{r}\frac{d}{dr}(rH_r) = 0.$$

Card 1/6

Some stationary problems of ... S/057/62/032/011/004/014
B104/B102

$$\begin{aligned}&\frac{dv_r}{dr}-\frac{v_\varphi^2}{r}=-\frac{1}{\rho}\frac{\partial P_m}{dr}+\frac{1}{4\pi\rho}\left(H_r\frac{dH_r}{dr}-\frac{H_\varphi^2}{r}\right)+\nu\frac{d}{dr}\left(\frac{1}{r}\frac{d}{dr}(rv_r)\right);\\&v_r\frac{dv_\varphi}{dr}+\frac{v_rv_\varphi}{r}=\frac{1}{4\pi\rho}\left(H_r\frac{dH_\varphi}{dr}+\frac{H_rH_\varphi}{r}\right)+\nu\frac{d}{dr}\left(\frac{1}{r}\frac{d}{dr}(rv_\varphi)\right);\\&v_r\frac{dv_z}{dr}=-\frac{1}{\rho}\frac{\partial P_m}{\partial z}+\frac{1}{4\pi\rho}H_r\frac{dH_z}{dr}+\nu\frac{1}{r}\frac{d}{dr}\left(r\frac{dv_z}{dr}\right);\\&\frac{1}{r}\frac{d}{dr}(rv_r)=0;\quad P_m=p+\frac{H^2}{8\pi}.\end{aligned} \qquad (2)$$

(L. D. Landau and Ye. M. Lifshits, Elektrodinamika sploshnykh sred, Electrodynamics of continuous media, GITTL, M., 1957). From these equations and the assumed axial symmetry it follows that

$$\left.\begin{aligned}&P_m=P_1(r)+P_2\cdot z;\\&v_r=\frac{Q}{2\pi}\frac{1}{r};\quad H_r=\frac{\Phi}{2\pi}\frac{1}{r},\end{aligned}\right\} \qquad (3),$$

Card 2/6

where Q is the quantity of liquid flowing through the cylindrical surface and Φ is the magnetic flux. The constant gradient of pressure P_m along the axis of symmetry is assumed to be known, $P_\uparrow(r)$ is obtained by the integration of the first equation of (2). Thus the problem is reduced to determining v_φ, v_z, H_ψ, and H_z from the system

$$\begin{aligned}
&\frac{d}{dr}\left(\frac{1}{r}\frac{d}{dr}(rH_\varphi)\right)-\frac{Q}{2\pi\nu_m}\frac{d}{dr}\left(\frac{H_\varphi}{r}\right)+\frac{\Phi}{2\pi\nu_m}\frac{d}{dr}\left(\frac{v_\varphi}{r}\right)=0;\\
&\frac{d}{dr}\left(\frac{1}{r}\frac{d}{dr}(rv_\varphi)\right)-\frac{Q}{2\pi\nu}\frac{1}{r^2}\frac{d}{dr}(rv_\varphi)+\frac{\Phi}{8\pi^2\rho\nu}\frac{1}{r^2}\frac{d}{dr}(rH_\varphi)=0;\\
&\frac{d}{ar}\left(r\frac{dH_z}{dr}\right)-\frac{Q}{2\pi\nu_m}\frac{dH_z}{dr}+\frac{\Phi}{2\pi\nu_m}\frac{dv_z}{dr}=0;\\
&\frac{d}{dr}\left(r\frac{dv_z}{dr}\right)-\frac{Q}{2\pi\nu}\frac{dv_z}{ar}+\frac{\Phi}{2\pi^2\rho\nu}\frac{dH_z}{dr}=\frac{P_2}{\rho\nu}\cdot r.
\end{aligned} \qquad (4)$$

whose general solution is:

Card 3/6

$$\left.\begin{aligned}
H_\varphi &= \frac{\Phi}{2\pi\nu_m}\left(C_1 r^{\lambda_1} + C_2 r^{\lambda_2}\right) + 4\pi\rho Q C_3 r + \Phi C_4 \frac{1}{r};\\
v_\varphi &= \left(\frac{Q}{2\pi\nu_m} - 1 - \lambda_1\right) C_1 r^{\lambda_1} + \left(\frac{Q}{2\pi\nu_m} - 1 - \lambda_2\right) C_2 r^{\lambda_2} + \Phi C_3 r + Q C_4 \frac{1}{r};\\
H_z &= \frac{\Phi}{2\pi\nu_m}\left(C_5 r^{\lambda_3} + C_6 r^{\lambda_4}\right) + C_7 - \frac{4\pi^2\Phi P_z}{4\pi\rho\,(4\pi\nu - Q)\,(4\pi\nu_m - Q) - \Phi^2} r^2;\\
v_z &= \left(\frac{Q}{2\pi\nu_m} - \lambda_3\right) C_5 r^{\lambda_3} + \left(\frac{Q}{2\pi\nu_m} - \lambda_4\right) C_6 r^{\lambda_4} + C_8 +\\
&+ \frac{4\pi^2\,(4\pi\nu_m - Q)\,P_z}{4\pi\rho\,(4\pi\nu - Q)\,(4\pi\nu_m - Q) - \Phi^2} r^2,
\end{aligned}\right\} \quad (5)$$

$$\left.\begin{aligned}
\lambda_{1,2} &= \frac{Q}{4\pi}\left(\frac{1}{\nu} + \frac{1}{\nu_m}\right) \pm \sqrt{\left[1 + \frac{Q}{4\pi}\left(\frac{1}{\nu} + \frac{1}{\nu_m}\right)\right]^2 + \frac{\Phi^2}{16\pi^3\rho\nu\nu_m}},\\
\lambda_{3,4} &= \frac{Q}{4\pi}\left(\frac{1}{\nu} + \frac{1}{\nu_m}\right) \pm \sqrt{\left[\frac{Q}{4\pi}\left(\frac{1}{\nu} - \frac{1}{\nu_m}\right)\right]^2 + \frac{\Phi^2}{16\pi^3\rho\nu\nu_m}}.
\end{aligned}\right\} \quad (6).$$

The following special cases are discussed: (1) Stationary vortex sources

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000410330009-1"

$$v_\varphi = C_1\frac{1}{r} + C_2 r^{1+\frac{Q}{2\pi\nu}}; \quad v_r = \frac{Q}{2\pi r}.$$

in the usual hydrodynamics (H = 0); (2) magnetic vortex fluid and hydrodynamic sources

$$H_\varphi = C_1 r + C_2 r^{-1+\frac{Q}{2\pi\nu_m}}, \qquad (7);$$

(3) hydrodynamic vortex in a radial magnetic field

$$H_\varphi = \frac{\Phi}{2\pi\nu_m}(C_1 r^\lambda + C_2 r^{-\lambda}) + C_4\frac{1}{r}; \quad H_r = \frac{\Phi}{2\pi r};$$

$$v_\varphi = -(1+\lambda)C_1 r^\lambda + (\lambda-1)C_2 r^{-\lambda} + C_3\cdot r; \quad \left(\lambda = \sqrt{1+\frac{\Phi^2}{16\pi^3\rho\nu\nu_m}}\right). \qquad (9);$$

(4) the motion of the fluid along the z axis in a radial-axial magnetic field

$$\left.\begin{aligned} &H_r=\frac{\Phi}{2\pi r};\quad v_r=\frac{Q}{2\pi r};\\ &H_s=\frac{\Phi}{2\pi\nu_m}\left(C_5r^{\lambda_3}+C_6r^{\lambda_4}\right)+C_7-\frac{4\pi^2\Phi P_2}{4\pi\rho\,(4\pi\nu-Q)\,(4\pi\nu_m-Q)-\Phi^2}r^2;\\ &v_s=\left(\frac{Q}{2\pi\nu_m}-\lambda_3\right)C_5r^{\lambda_3}+\left(\frac{Q}{2\pi\nu_m}-\lambda_4\right)C_6r^{\lambda_4}+C_8+\\ &+\frac{4\pi^2\,(4\pi\nu_m-Q)\,P_2}{4\pi\rho\,(4\pi\nu-Q)\,(4\pi\nu_m-Q)-\Phi^2}r^2, \end{aligned}\right\} \quad (5a).$$

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A. M. Gor'kogo (Khar'kov State University imeni A. M. Gor'kiy)

SUBMITTED: June 26, 1961 (initially)
December 15, 1961 (after revision)

DIKIY, G.P.; TARAPOV, I.Ye.

Some automodel problems in magnetohydrodynamics, given axial symmetry. Zhur. tekh. fiz. 32 no.11:1302-1312 N '62. (MIRA 15:11)

1. Khar'kovskiy gosudarstvennyy universitet imeni A.M.Gor'kogo. (Magnetohydrodynamics)

DIKIY, G.P.; TARAPOV, I.Ye.

Some stationary problems in magnetohydrodynamics, given axial symmetry. Zhur. tekh. fiz. 32 no.11:1333-1341 N '62.
(MIRA 15:11)

1. Khar'kovskiy gosudarstvennyy universitet imeni A.M.Gor'kogo.
(Magnetohydrodynamics)

DIKIY, G.P.

Sources of spherical eddies in magnetohydrodynamics. Zhur. tekh. fiz. 33 no.11:1285-1289 N '63. (MIRA 16:12)

1. Khar'kovskiy aviatsionnyy institut.

DIKIY, I. F.

42696. DIKIY. I. F. Razryv anevrizmy Selezenochnoy Arterii i Selezenki Pri Vos' Mimesyachnoy Deremennosti. Vracheb, Delo, 1948, No 11, STB. 1015-16.

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

DIKIY, I. F.

DIKIY, I. F. "Petrification of the fetus in abdominal six-month pregnancy", Vracheb. delo, 1948, No. 12, paragraphs 1105-08.

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 10, 1949).

DIKIY, L. A. Mar/Apr 1953

USSR/Mathematics - Eigenvalue Sum

"Concernering a Certain Gel'fand-Levitan Formula," L. A. Dikiy

Usp. Mat. Nauk, Vol 8, No 2 (55), pp 119-123

Discusses the significance of the theorem of I. M. Gel'fand and B. M. Levitan ("A Simple Identity for Eigencalues of a Second-Order Differential Operator," DAN SSSR, Vol 88, No 4, 1953); namely, the following theorem: if λ_k are eigenvalues of the operator $-\frac{d^2}{dx^2} + p(x)$ on the interval (o,π) with zero boundary conditions, where $\int_0^\pi p(x)dx = 0$, then the following subject formula holds $\sum_{k=1}^{\infty} (k - \lambda_k) = \frac{1}{4} (p(0)+p(\pi))$. "Expansion in Eigenfunctions," (Razlozheniye po Sobstvennym Funkstiyam), B. M. Levitan, cited. State Tech Pres, M-L, 1950.

Submitted 26 Dec 1952.

DIKIY, L. A.

DIKIY, L. A.: "The zeta-function of the Sturm-Louisville operator and its application to spectrum investigation". Moscow, 1955 Moscow State U imeni M. V. Lomonosov. (Dissertation for the Degree of Candidate of PHYSICOMATHEMATICAL SCIENCES)

SO: Knizhnaya Letopis' No 51, 10 December 1955

DIKIY, L.A.

SUBJECT USSR/MATHEMATICS/Differential equations CARD 1/3 PG -108
AUTHOR DIKIJ L.A.
TITLE Zeta functions of an ordinary differential equation on a finite interval.
PERIODICAL Izvestija Akad. Nauk 19, 187-200 (1955) reviewed 6/1956

The author considers the zeta function $Z(s) = \sum_{n=1}^{\infty} \lambda_n^{-s}$, where λ_n are the eigenvalues of the differential operator

$$Au = -\frac{d^2u}{dx^2} + p(x)u \qquad u(0) = u(\pi) = 0.$$

If the function $p(x)$ with all its derivatives vanishes at the ends of the interval $[0,\pi]$, then $Z(s)$ can be continued on the whole complex s-plane. It has only simple poles in the points $s = \frac{1}{2}, -\frac{1}{2}, -\frac{3}{2}, -\frac{5}{2}, \ldots$. The residue in $\frac{1}{2}$ is $\frac{1}{2}$, but in $-k+\frac{1}{2}$ it is $\frac{1}{2\pi}\int_0^{\pi} A_{2k}(k-\frac{1}{2},x)\,dx$. There the functions A_e are defined as follows:

$$A_e(s,x) = \sum_{m=0}^{l} B_{l,m}(x) \binom{s}{\frac{l+m}{2}}, \qquad \binom{s}{k} = \frac{s(s-1)\ldots(s-k+1)}{k!}$$

and the $B_{l,m}(x)$ are given by the recurrence formulas:

$$B_{o,o}(x) \equiv 1, \quad B_{l,m}(x) \equiv 0 \quad \text{for } m > l$$

$$B_{l+2,m}(x) = p(x)B_{l,m}(x) - B''_{l,m}(x) + 2iB'_{l+1,m-1}(x).$$

In the genral case ($p(x)$ does not vanish as above) the situation of the poles remains the same, for the residues a sum in the A_l and their derivatives is given. If

$$\lambda_n = n^2 + c_o + \frac{c_2}{n^2} + \frac{c_4}{n^4} + \dots$$

is an asymptotic decomposition of λ (existence is not proved), then

$$Z(s) = \zeta(2s) - sc_o \zeta(2s+2) + \dots,$$

where ζ is the Riemannian ζ-function. A combination of the obtained expressions for residues and this development leads to a recurrent system of equations for the determination of the c_i, e.g.

$$c_o = \frac{1}{\pi} \int_0^{\pi} p(x)\,dx$$

$$c_2 = -\left(\frac{1}{\pi} \int^{\pi} p(x)\,dx\right)^2 + \frac{1}{4\pi} \int^{\pi} p^2(x)\,dx - \frac{p'(\pi)-p'(0)}{12\pi}.$$

Izvestija Akad. Nauk 19, 187-200 (1955) CARD 3/3 PG - 108

After the continuation of $Z(s)$ on the whole plane, $Z(-1), Z(-2), Z(-3)$ are determined and formally denoted as the sums $\sum \lambda_n$, $\sum \lambda_n^2$, $\sum \lambda_n^3$ ..... In the special case where $p(x)$ with all derivatives vanishes at the ends of $[0, \pi]$, we have $\sum \lambda_n^k = 0$. In the general case holds a long formula (series in A_1 and derivatives). $\sum \lambda_n^k$ or $Z(-k)$ can be denoted as the sum of the numbers λ_n^k (except of those terms of the development of λ_n^k which disturb the convergence). From the sum there must be subtracted the half of the free term of the asymptotic development.
These results for $Z(s)$ are extended to the functions

$$Z(s;x,y) = \sum_{n=1}^{\infty} \lambda_n^{-s} \varphi_n(x) \varphi_n(y),$$

where $\varphi_n(x)$ are normalized eigenfunctions of the operator.

DIKIY, L.A.

2

1-F/W

Dikii, L. A. On the asymptotics and certain identities for the spectral function of a Sturm-Liouville operator. Dokl. Akad. Nauk SSSR (N.S.) 104 (1955), 687–690. (Russian)

The boundary-value problem $-u''+p(x)u=\lambda u$, $u'(0)=0$ on $0\leq x<\infty$ is considered, where it is assumed that p is infinitely differentiable, the limit-point case prevails at infinity, and the spectrum is positive. Let $\theta=\theta(x, y; t)$ be the spectral function for the problem, and let M be defined by $Mf(x)=x^{-1}\int_x^{2x} f(t)dt$. Then there exist numbers r_n such that for $x, y\neq 0$,

$$M^{2k+2}[\theta(x, y; t-1)-\sum_{n=0}^{k} r_n t^{-n+1}]=O(t^{-k-1+\epsilon}),$$

as $t\to\infty$. A second result is proved, which states that

$$\lim_{T\to\infty}\int_0^T\left(1-\frac{t}{T}\right)^{2k+1}t^{k-1}[\theta(x, y; t-1)-\sum_{n=0}^{k} r_n t^{-n+1}]dt=0$$

for $x, y\neq 0$.

E. A. Coddington (Copenhagen).

DIKIY L.A.

AUTHOR: DIKIY L.A. 20-1-2/44

TITLE: A New Approximation Method for the Calculation of the Eigenvalues of the Sturm-Liouville's Problem (Novyy sposob priblizhennogo vychisleniya sobstvennykh chisel zadachi Shturma-Liuvillya)

PERIODICAL: Doklady Akad. Nauk SSSR, 1957, Vol.116, Nr.1, pp.12-14 (USSR)

ABSTRACT: For the calculation of the eigenvalues of the Sturm-Liouville's problem

$$-u'' + p(x)u = \lambda u; \qquad u(0) = u(\pi) = 0$$

the author uses certain identities given in an earlier paper [Ref.4] which combine the sums of positive powers of the eigenvalues with the function $p(x)$, e.g.

$$\sum_{n=1}^{\infty}(\lambda_n^2 - n^4 - 2c_2) = c_2 - \frac{p^2(0) + p^2(\pi)}{5} + \frac{p''(0) + p''(\pi)}{8},$$

where $c_2 = \frac{1}{4\pi}\int_0^{\pi} p^2(x)dx$. Here $p(x)$ is replaced by a trigonometric

Card 1/2 sum: $p(x) = \sum_{n=1}^{N} a_n \cos n x$ and, because of the divergence, the

A New Approximation Method for the Calculation of the Eigenvalues of the Sturm-Liouville's Problem 20-1-2/44

appearing series are regularized by subtraction. For the determination of the third approximation the author obtains the algebraic system: $\lambda_1 + \lambda_2 + \lambda_3 \approx A$; $\lambda_1^2 + \lambda_2^2 + \lambda_3^2 \approx B$; $\lambda_1^3 + \lambda_2^3 + \lambda_3^3 \approx C$, where A,B,C are constants depending on $p(0)$, $p(\pi)$, $p''(0)$, $p''(\pi)$, $p^{IV}(0)$, $p^{IV}(\pi)$ and on the integrals of the function p and their derivatives.

ASSOCIATION: Institute of Atmospheric Physics, Acad.Sc. USSR (Institut fiziki atmosfery AN SSSR)

PRESENTED BY: A. A. Dorodnitsyn, Academician, April 8, 1957.

SUBMITTED: Dec. 21, 1956

AVAILABLE: Library of Congress

Card 2/2

AUTHOR: Dikiy, L.A. SOV/42-13-3-2/41

TITLE: Formulas ~~for traces~~ of the Differential Operators of Sturm-Liouville (Formuly sledov/differentsial'nykh operatorov Shturma-Liuvillya)

PERIODICAL: Uspekhi Matematicheskikh Nauk, 1958, Vol 13, Nr 3, pp 111-143 (USSR)

ABSTRACT: Gel'fand and Levitan recently discovered a new group of problems which are somewhat different, and more algebraic in character. The Sturm-Liouville self-adjoint problem may be stated thus:

$$-u'' + p(x)u = \lambda u, \qquad u(0) = u(\pi) = 0.$$

In the mean time the author, Gel'fand and Dorodnitsyn have published several papers in this direction. The present paper gives a summary of the results. Shortly sketched the following problem is treated: Defining the traces of the differential operators

(1) $$\sum \lambda_n = Sp\ (-\frac{d^2}{dx^2} + p(x))$$

(2) $$\sum \lambda_n^2 = Sp(-\frac{d^2}{dx^2} + p(x))^2$$

etc, then these expressions at first are senseless since at the left hand side there are divergent series. Now the general methods of regularization (§ 2) are used, especially an elementary method of Gel'fand [Ref 2] is described (§ 3-4). § 5 contains some

Card 1/2

generalizations. In § 6 the obtained trace formulas are used in order to calculate the asymptotics of the eigenvalues and the first eigenvalues. The contents of § 7 is new. Here the trace formulas are combined with the theory of perturbation. In (1) the differential operator is comprehended as an operator of the highest derivative which is superposed by the "disturbance operator" (operator with the remaining lower derivatives). Then the author obtains approximate values for eigennumbers with the aid of methods of the theory of perturbation. It is asserted that the trace formulas are equivalent to the statement that the mean deviation of the approximate vales for the eigennumbers from the real values equals zero. The author conjectures that this fact (which is proved in the present paper for differential operators) is valid more general.
There are 21 references, 12 of which are Soviet, 5 American, 1 Indian, 1 Hungarian, 1 German and 1 French.

3.9000

67051

AUTHOR: Dikiy, L. A. SOV/49-59-8-11/27

TITLE: On Acoustic and Gravitational Vibrations in the Atmosphere

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 8, pp 1186-1194 (USSR)

ABSTRACT: The waving motions in the polytropic atmosphere were investigated by the author. The motions were classified into two different types: acoustic and gravitational, similar to those observed in the isothermic. The general formula, Eq (1), is considered for the two-dimensional waving motion along the horizontal axis Ox. This formula can be presented in a simplified form as shown in the transformation Eqs (2) to (4). In the case of a polytropic atmosphere, where $\bar{T} = T_0 - \gamma z$, the formulae (10) to (12) can be applied. These become Eqs (10a) to (12a) in the case of $\gamma \neq 0$. In order to find the solution, the function

$$M(\lambda) = \frac{\varphi'(0,\lambda)}{\varphi(0,\lambda)}$$

can be introduced. Fig 1 shows that both functions, $M(\lambda)$ and $N(\lambda)$ have two joined intersection points. It

Card 1/2

67051

SOV/49-59-8-11/27

On Acoustic and Gravitational Vibrations in the Atmosphere

can be shown that the frequency ω^2 related to the upper point can be considered as acoustic (ω^2_{ak}) and the one corresponding to the lower point as a gravitational ($\omega^2_{\Gamma p}$) frequency of vibration. In order to define the physical characteristics of both frequencies, the formulae

$$\omega^2_{ak} > k\sqrt{(\gamma_a - \gamma)\, g\varkappa R} \quad \text{and} \quad \omega^2_{\Gamma p} < k\sqrt{(\gamma_a - \gamma)\, g\varkappa R},$$

the functions $U(\xi)$ (Fig 2) and $\varphi(\xi, \lambda)$ (Fig 3) were analysed. Thus, it is shown that in the isothermic atmosphere all the gravitational frequencies for any k are smaller than all the acoustic ones and a vibrationless interval can be distinguished. In the polytropic atmosphere there is no such interval. There are 3 figures and 4 Soviet references.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki atmosfery (Institute of Physics of the Atmosphere, Ac.Sc., USSR)

SUBMITTED: October 18, 1958

Card 2/2

DIKIY, L. A. (Moscow)

"On the Stability of the Plane Parallel Flow of a Nonhomogeneous Fluid."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

16.3400

77804
SOV/42-15-1-11/27

AUTHOR: Dikiy, L. A.

TITLE: On Boundary Conditions Depending on Eigenvalue

PERIODICAL: Uspekhi matematicheskikh nauk, 1960, Vol 15, Nr 1, pp 195-198 (USSR)

ABSTRACT: The author considers a boundary value problem where the eigenvalue appears both in the equation and in the boundary condition. The problem is:

$$-u'' + U(x)u = \lambda u; \; u'(0) - N(\lambda)\, u(0) = u(a) = 0 \quad (1)$$

where U(x) is a continuous function on the interval $[0, a]$ and $N(\lambda)$ is a given function of the eigenvalue λ. Let $\varphi(x, \lambda)$ be a solution of the equation satisfying at the right end the condition $\varphi(a, \lambda) = 0$. Let

Card 1/4

$$M(\lambda) = \frac{\varphi'(0,\lambda)}{\varphi(0,\lambda)}$$

(' is differentiation with respect to x). This function is single valued for all λ except those for which the denominator vanishes. These are the eigenvalues of the problem with boundary conditions $u(0) = u(a) = 0$. Each one is larger than U_{min}. The λ for which $M = 0$ are eigenvalues of the problem with conditions $u'(0) = u(a) = 0$. They are also larger then U_{min}. Those λ for which $M = N$ are the eigenvalues of problem (1). Now $\frac{d}{d\lambda} M(\lambda) > 0$ and for large λ:

$$\varphi(x,\lambda) \sim \sin \lambda^{1/2} (x - a), \quad M(\lambda) \sim - \lambda^{1/2} \cot \lambda^{1/2} a$$

as $\lambda \to \infty$, and $M(\lambda) \sim -(-\lambda)^{1/2} \coth(-\lambda)^{1/2} a$ as $\lambda \to -\infty$.

On Boundary Conditions Depending on Eigenvalue

77804
SOV/42-15-1-11/27

The author then proves a theorem on the completeness of the system $\{\varphi\}$. Theorem 1: If from every branch of the curve $M(\lambda)$ one point is taken, and $\{\lambda_i^*\}$ is the set of abscissas of these points, then the system of functions $\varphi(x, \lambda_i^*)$ is complete in the space $\mathcal{L}^2(0,a)$. Theorem 2 (unproven): If the function $N(\lambda)$ is continuous and

$$\lim_{\lambda \to -\infty} \frac{N(\lambda)}{(-\lambda)^{1/2}} > -1,$$ then the system of eigen

functions of problem (1) is complete. Theorem 1 is somewhat generalizable, i.e., a finite set of λ_i^* can be replaced by arbitrarily distributed points as long as after some i the i-th point belongs to the i-th branch of $M(\lambda)$. If $N(\lambda)$ is analytic continuable into the complex plane, then there may be also complex

Card 3/4

On Boundary Conditions Depending on Eigenvalue

77804
SOV/42-15-1-11/27

eigenvalues. There is 1 figure.

SUBMITTED: September 2, 1958

Card 4/4

16.7600 10.2000

80244

S/040/60/024/02/07/032

AUTHOR: Dikiy, L. A. (Moscow)

TITLE: On the Stability of Plane Parallel Flows of an Inhomogeneous Fluid

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol. 24, No. 2, pp. 249-257

TEXT: In the infinite half space the author considers a two-dimensional horizontal flow, the velocity V of which increases linearly with the height, while the density ρ_0 decreases exponentially: V(z) = k(z), ρ_0 = const $\cdot$ $e^{-\beta z}$. This flow was investigated by the wave method of Taylor (Ref.5) who stated that, if the Richardson number is $R = \frac{g\beta}{k^2} > \frac{1}{4}$, there occur neutral waves, while for $R < \frac{1}{4}$ there are no waves at all. From this it was concluded in (Ref.6,7) that the flow is stable only for $R > \frac{1}{4}$. The author shows that stability holds for all $R > 0$. Here a motion is called stable if an arbitrary initial perturbation remains bounded in a finite region under increasing time. At first the considered problem is formulated as a linearized Cauchy problem; this is solved with the aid of the Laplace

X

Card 1/2

80244

S/040/60/024/02/07/032

On the Stability of Plane Parallel Flows of an Inhomogeneous Fluid

transformation, where the solution contains a certain function which must be determined from a Volterra integral equation of first order. The investigation of this integral equation leads to the above-mentioned statement of stability.
M. V. Keldysh is mentioned in the paper.
There are 2 figures, and 8 references: 1 Soviet, 2 American, 3 German, 1 English and 1 Norwegian.

SUBMITTED: September 25, 1959

Card 2/2

S/038/60/024/006/004/004
C111/C333

AUTHOR: Dikiy, L.A.

TITLE: On the Zeros of the Whittaker Function and the Macdonald Function With Complex Index

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1960, Vol. 24, No. 6, pp. 943-954

TEXT: The Whittaker function $W_{\lambda,\mu}(z)$ is defined as solution of the differential equation

$$(1) \qquad W'' + \left(-\frac{1}{4} + \frac{\lambda}{z} + \frac{\frac{1}{4} - \mu^2}{z^2}\right) W = 0 ,$$

which shows the asymptotic behavior

$$(2) \qquad W_{\lambda,\mu}(z) \sim e^{-\frac{z}{2}} z^{\lambda}$$

for $|z| \to \infty$, $|\arg z| < \frac{3}{2}\pi - \varepsilon$.

For $\lambda = 0$ it is expressed by the cylindric Macdonald function

Card 1/3

S/038/60/024/006/004/004
C111/C333

On the Zeros of the Whittaker Function and the Macdonald Function With Complex Index

(3) $$W_{0,\mu}(z) = \sqrt{\frac{z}{\pi}}\, K_{\mu}\left(\frac{z}{2}\right)$$

The author proves :

Theorem 1 : If λ and μ are real, $\lambda \leq 0$ and $|\mu| < \frac{3}{2}$, then $W_{\lambda,\mu}(z)$ possesses no zeros in the sector $|\arg z| \leq \pi$.

Theorem 2 : If $\lambda \leq 0$, μ complex and $|\mathrm{Re}\,\mu| \leq 1$, $\mathrm{Im}\,\mu^2 < 0$, then $W_{\lambda,\mu}(z)$ possesses no zeros in the sector $-\pi \leq \arg z \leq 0$.

Corollary : If μ satisfies the conditions of theorem 2, then the statement of the theorem holds for the function $K_{\mu}(z)$.

Theorem 3 : If λ is real, μ purely imaginary, then $W_{\lambda,\mu}(z)$ possesses a denumerable set of positive zeros in the sector $|\arg z| \leq \pi$ and possesses no further zeros.

Corollary : $K_{\mu}(z)$ possesses no zeros in $0 < |\arg z| \leq \pi$ for a purely imaginary μ.

Theorem 4 : For $\lambda \geq 0$, $0 < \mu < \frac{1}{2}$, $W_{\lambda,\mu}(z)$ possesses zeros only on

Card 2/3

S/038/60/024/006/004/004
C/111/C333

On the Zeros of the Whittaker Function and the Macdonald Function With Complex Index

arg z = 0 in the sector $|\arg z| \leqslant \pi$; their number is equal to the nearest integer to $\lambda - \mu$ (if $\lambda - \mu - \frac{1}{2}$ is integer, then the number of zeros is equal to $\lambda - \mu - \frac{1}{2}$).

There are 3 figures, and 8 references : 2 Soviet, 2 English, 2 American, 1 German and 1 Japanese.

PRESENTED: by A.A. Dorodnitsyn, Academician

SUBMITTED: March 23, 1959

Card 3/3

DIKIY, L.A.

Decrease in the accuracy of numerical pressure field forecasts resulting from fictitious border conditions. Trudy TSIP no.106:37-44 '60. (MIRA 13:12)

(Atmospheric pressure)

86823

S/020/60/135/005/008/043
B019/B067

10.2000

AUTHOR: Dikiy, L. A.

TITLE: Steadiness of Plane-parallel Flows of an Ideal Fluid

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 5, pp. 1068-1071

TEXT: This report was delivered at the First All-Union Conference on Theoretical and Applied Mechanics in Moscow, in January, 1960. When studying the steadiness of a flow, Cauchy's problem is usually solved by a superposition of particular solutions representing plane-propagating waves. The flow is regarded as unsteady if the solution contains wave functions with infinite increase of their amplitude, otherwise the flow is steady. However, not every solution of the equation of motion may be separated into plane waves; the equation of motion may even have no wave solution at all. In this case, the absence of wave solutions with increasing amplitude does not obviously warrant the steadiness of flow. The author proceeds from a time-dependent equation of motion for the flow function from which he obtains the Sommerfeld equation by separating the

Card 1/2

86823

Steadiness of Plane-parallel Flows of an Ideal Fluid

S/020/60/135/005/008/045
B019/B067

variables. In an exact examination it is shown that the unsteady character of a flow is exclusively caused by unsteady wave solutions. K.V.Brushlinskiy is mentioned. There are 3 references: 2 Soviet and 1 US.

ASSOCIATION: Institut fiziki atmosfery Akademii nauk SSSR (Institute of Physics of the Atmosphere of the Academy of Sciences USSR)

PRESENTED: August 31, 1960, by A. N. Kolmogorov, Academician

SUBMITTED: August 20, 1960

Card 2/2

DIKIY, L.A.

Natural oscillations of the baroclinic atmosphere over a spherical earth. Izv.AN SSSR.Ser.geofiz. no.5:756-765 My '61.
(MIRA 14:4)

1. Akademiya nauk SSSR, Institut fiziki atmosfery.
(Atmosphere)

DIKIY, L.A.

Influence function in small perturbations of a baroclinic isothermally stratified atmosphere. Dokl. AN SSSR 143. no.1:97-100 Mr '62. (MIRA 15:2)

1. Institut fiziki atmosfery AN SSSR. Predstavleno akademikom A.A.Dorodnitsynym.

(Atmosphere)

ACCESSION NR: AP4038992 S/0050/64/000/005/0039/0044

AUTHORS: Dikiy, L. A. (Candidate of physico-mathematical sciences); Koronatova, T. D.

TITLE: Stability of solutions of equations for displacement of a vortex relative to disturbance of the initial and boundary conditions

SOURCE: Meteorologiya i gidrologiya, no. 5, 1964, 39-44

TOPIC TAGS: weather forecasting, boundary condition, pressure field, error propagation, numerical method

ABSTRACT: A significant source of error when predicting the pressure field by numerical methods is the use of fictive boundary conditions. These errors increase in proportion to the length of forecasting period. The authors seek to show on the basis of a simplified model how rapidly such errors spread from the boundary into the region of prediction, and they also attempt to indicate the length of forecast reasonably possible from the boundary conditions. The rate at which error spreads from the boundary has been computed by using fictive boundary values, on the one hand, and by using actually known boundary conditions on the other. It is found that for the 24-hour period of forecasting errors do not appear to move far inward from the boundary, but for the 48-hour period the difference between the two methods

ACCESSION NR: AP4038992

of determination is large. In considering the stability of any solution relative to small distrubances of the initial data, the authors arbitrarily add a field of random errors to the initial field. In one calculation they select random errors, in another correlative. Variants involve doubling the error, averaging it, and similar modifications. The results are tabulated and show a remarkable lack of deviation in 48-hour records as compared with 24-hour records. This becomes understandable, however, when it is recalled that only the initial data have been disturbed, not the boundary data; and, during long-range forecasting, the solution "moves in" from the boundary. These results are then a confirmation of the strong effect of boundary conditions for 48-hour forecasting. For this reason, the results for 48-hour periods cannot be considered representative. Orig. art. has: 1 figure, 3 tables, and 3 formulas.

ASSOCIATION: Institut fiziki atmosfery* AN SSSR (Institute of Physics of the Atmosphere, AN SSSR)

SUBMITTED: 00 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: ES, DP NO REF SOV: 003 OTHER: 000

Card 2/2

ACCESSION NR: AP4027601 S/0040/64/028/002/0389/0392

AUTHOR: Dikiy, L. A. (Moscow)

TITLE: Stability of plane-parallel Couette flow

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 2, 1964, 389-392

TOPIC TAGS: flow stability, plane-parallel flow, Couette flow, viscous incompressible fluid, eigenvalue, Reynolds number, asymptotic limiting case, pure imaginary eigenvalue

ABSTRACT: The problem of stability of plane-parallel flow of viscous incompressible fluid reduces to the solution of the Orr-Sommerfeld equation. The author studies a simple example where the flow velocity linearly depends on the transverse coordinate, i.e., the case of plane-parallel Couette flow. Mathematically, the problem reduces to determination of the sign of the imaginary part of the eigenvalues c of the boundary value problem

$$(z - c)(\varphi'' - \alpha^2\varphi) = \frac{1}{i\alpha R}(\varphi^{IV} - 2\alpha^2\varphi'' + \alpha^4\varphi) \qquad (1)$$

$$\varphi(-1) = \varphi'(-1) = \varphi(1) = \varphi'(1) = 0$$

Card 1/2

ACCESSION NR: AP4027601

where k, α, R are real positive parameters. If the imaginary parts of all the eigenvalues c turn out to be negative, then the flow is stable. The author proves that all pure imaginary eigenvalues c lie in the lower half-plane. For small values of the Reynolds number all the eigenvalues are pure imaginary. As R_1 (Reynolds number) grows, the eigenvalues in turn converge toward the imaginary axis, first combining pairwise, and then converting into pairs of points situated symmetrically with respect to the imaginary axis. Orig. art. has: 6 formulas.

ASSOCIATION: none

SUBMITTED: 19Dec63 DATE ACQ: 28Apr64 ENCL: 00

SUB CODE: MM NO REF SOV: 001 OTHER: 005

Card 2/2

DIKIY, L.A.

The earth's atmosphere as an oscillatory system. Izv. AN SSSR. Fiz. atm. i okeana 1 no.5:469-489 My '65. (MIRA 18:8)

1. Institut fiziki atmosfery AN SSSR.

L 5639-65 EWT(1) AFETR/AFMD(t)/AFWL/SSD/ESD(t) GW

ACCESSION NR: AP4042793 S/0020/64/157/003/0580/0582

43
42

AUTHORS: Dikiy, L.A.

TITLE: Frequencies of free oscillations of the earth atmosphere 12

SOURCE: AN SSSR. Doklady*, v. 157, no. 3, 1964, 580-582

TOPIC TAGS: earth atmosphere, free oscillation, physics, atmosphere, geophysics

ABSTRACT: The author has calculat[illegible] the frequencies of free oscillations of the atmosphere of the [illegible] earth under the realistic condition of temperature [illegible] taken from the so-called standard atmosphere C[illegible]A 1961 ([illegible] International Reference Atmosphere, 1961 Report, A[illegible] 1[illegible]). The calculation is based on the usual hydrodynamic equ[illegible] linearized with respect to the state of rest, the time relations being assumed to be periodical. The Coriolis acceleration is neglected. The equation system in spherical coordinates is reduced to one equation for the three dimensional divergence. By separation of variables, two equations are obtained, the separation constant being the dynamical equivalent

Card 1/2

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000410330009-1"

L 6639-65
ACCESSION NR: AP4042793

height of the atmosphere. A discrete spectrum of oscillations is obtained consisting of acoustical and gravitational groups. Orig. art. has: 3 figures

ASSOCIATION: Institut fiziki atmosfery, Akademii nauk SSSR (Institute of Atmospheric Physics, Academy of Sciences, SSSR)

SUBMITTED: 02Mar64 ENCL: 00

SUB CODE: ES NR REF SOV: 002 OTHER: 003

Card 2/2

DIKIY, L.A.

Nonlinear theory of the stability of zonal flows. Izv. AN SSSR. Fiz. atm. i okeana 1 no.11:1117-1122 N '65.

(MIRA 18:12)

1. Institut fiziki atmosfery AN SSSR. Submitted June 10, 1965.

L 32956-66 EWT(1) GW

ACC NR: AP6011365 SOURCE CODE: UR/0362/66/002/003/0225/0235

AUTHOR: Golitsyn, G. S. (Candidate of physico-mathematical sciences); Dikiy, L. A.

ORG: Academy of Sciences SSSR, Institute of Physics of the Atmosphere (Akademii nauk SSSR, Institut fiziki atmosferi)

TITLE: Atmospheric oscillations of planets as a function of their rotational velocities

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 3, 1966, 225-235

TOPIC TAGS: planetary atmosphere, atmospheric movement, ocean tide

ABSTRACT: Slow oscillations in the atmosphere of rotating planets are studied and numerical values computed for the atmospheres of the Earth and Jupiter. These oscillations are frequently called Rossby waves and are due to the gyroscopic rigidity of the rotating atmosphere. The Laplace tide equation for the oscillations of a homogeneous ocean on a sphere is used as the basis of the theoretical treatment. A series of eigenfunctions of this equation are computed for a range of values of a dimensionless parameter γ, which is defined as the square of the ratio of twice the linear velocity of rotation at the equator to the velocity of sound. The planets of the solar system are broken up into three groups on the basis of their γ-value. The eigenperiods are calculated for the values of γ that correspond to the slow oscillation

UDC: 551.511.32

Card 1/2

L 32956-66

ACC NR: AP6011365 2

modes of Jupiter and the Earth. The asymptotic theories of S. S. Hough and L. A. Dikiy gave results that are in substantial agreement with the present paper. The authors thank A. S. Monin and A. M. Obukhov for their help. Orig. art. has: 16 formulas, 5 figures, and 2 tables. [14]

SUB CODE: 03/ SUBM DATE: 14Oct65/ ORIG REF: 008/ OTH REF: 005/

ATD PRESS: 5027

Card 2/2

YURZHENKO, T.I.; DIKIY, M.A.

Autoxidation of alkyl and halo derivatives of 1, 1-diphenylethane and isopropylbenzene. Dokl.AN SSSR 137 no.5:1137-1140 Ap '61.
(MIRA 14:4)

1. L'vovskiy politekhnicheskiy institut. Predstavleno akademikom V.N.Kondrat'yevym.
(Ethane) (Cumene)

DIKIY, M.A.; YURZHENKO, T.I.

Synthesis of 9-methylfluorene hydroperoxide and study of its thermal decomposition. Dop. AN URSR no.3:390-393 '62.
(MIRA 15:5)

1. L'vovskiy politekhnicheskiy institut. Predstavleno akademikom AN USSR A.I.Kiprianovym.
(Fluorene)

DIKIY, M.A.; YURZHENKO, T.I.

Synthesis of the hydroperoxides of halo derivatives of isopropylbenzene and the study of their thermal decomposition rate. Dokl. LPI 5 no. 1/2:15-19 '63. (MIRA 17:6)

DIKIY, M.A.; YURZHENKO, T.I.

Synthesis of hydroperoxides of halo derivatives of isopropylbenzene and the rate of its thermal decomposition in α-methylstyrene. Zhur. ob.khim. 33 no.4:1360-1363 Ap '63. (MIRA 16:5)

1. L'vovskiy politekhnicheskiy institut.
(Cumene) (Hydroperoxide)

DIKIY, N.

DIKIY, N., arkhitektor.

Means of lowering construction costs of state farms on virgin lands.
Sel'. stroi. 12 no.10:18-19 O '57. (MIRA 10:11)
(Construction industry--Costs)

L 10684-67 EWT(m) WE

ACC NR: AP6029806 (N) SOURCE CODE: UR/0229/66/000/007/0026/0028

AUTHOR: Dikiy, N. A.

ORG: none

TITLE: Purification of fuel in marine systems

SOURCE: Sudostroyeniye, no. 7, 1966, 26-28

TOPIC TAGS: diesel fuel, filter, industrial separator, fuel refining, fuel contamination / ST500-2 separator, TF-2M filter

ABSTRACT: The purification of fuels used in marine systems by a hydrophobic separator ST500-2 in combination with the filter TF-2M was studied. The study supplements the results of L. A. Yemel'yanov (Fil'tratsiya dizel'nogo topliva. Mashgiz 1962). A schematic of the experimental installation is presented. The experimental results are shown in graphs and tables (see Fig. 1). It was found that the use of separator ST500-2 insures complete separation of water from the fuel for an initial water concentration of ~ 0.16% and a flow rate of 500 liter/min. It is concluded that the combined use of separator ST500-2 and filter TF-2M in diesel fuel purification yields a product of satisfactory purity for use in marine systems.

UDC: 621.431.74:621.438

Card 1/2

L 10684-67
ACC NR: AP6029806

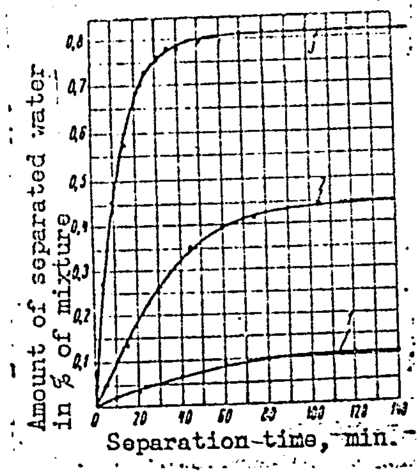

Fig. 1. Dependence of water removal from diesel fuel on the initial water concentration in the fuel. 1 - 0.3%; 2 - 0.7%; 3 - 1.0%

Orig. art. has: 2 tables and 3 graphs.

SUB CODE: 21/, 13/ SUBM DATE: none/ ORIG REF: 003

Card 2/2

3

Experiments on continuous cooking of starchy raw materials [for alcohol production] in equipment using spray nozzles. I. P. Degm[illegible], V. S. Yanovskii, and [illegible] F. [illegible] [illegible] Plant Murotsk[illegible] *Spirtovaya Prom.* 22, No. 8, [illegible] [illegible].—Two figures are presented of the atom[illegible]ing equipment used, and an analysis is presented of the w[illegible]rt obtained in the pilot plant using this equipment. Werner Jacobsen

DIKIY, N. R.

DIKIY, N. R.: "Planning and building grain sovkhozes (experience in building and designing grain sovkhozes in northern Kazakhstan and the northern Caucasus)." Academy of Construction and Architecture USSR. Moscow, 1956. (Dissertation for the Degree of Candidate in Architectural Science.)

Knizhnaya letopis', No. 30, 1956. Moscow.

DIKIY, N.R., arkhitektor.

[redacted]

Lowering construction costs on new state grain farms. Nauka i pered. op.v sel'khoz. 7 no.7:84-86 Jl '57. (MLRA 10:8)
(Farm buildings) (Construction industry--Costs)