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ALEKSAMPEOV, 1.A., doktor tekhm. nauk [deceased]; GOUPROV, M.M.;
MELESHRO, A.M.; TKALICH, K.M.

Ways of decreasing the crescent shape of strip icu the manufacture of helically welded pipe. Met. i gornorud. prom. no.2:16-47 Jludg (MERA 18:7)

162.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

MELESHKO, A.M.; TKALICH, K.N.; YUKHROVSKIY, Yu.M.

Studying the forward flow on continuous sheet rolling mills.

Met. 1 gornorud. prom. no.4143-45 Jl-Ag 165. (MIRA 18:10)

IORDANISHVILI, Ye.K.; TKALICH, L.C.

Semiconductor thermostat for self-oscillators. Zhur.tekh.fiz.
27 no.6:1215-1220 Je '57. (MLRA 10:8)

1.Institut poluprovodnikov Akademii nauk SSSR, Leningrad.
(Thermostat) (Oscillators, Crystal)

TRALICH, L. G.

57-6-10/36

AUTHOR TITLE

ABSTRACT

IORDANI SHVILI, Ye.K., TKALICH, L.G.

Semiconducting Thermostat for Autogenerators (Poluprovodnikovyy termostat dlya avtogeneratorov. Russian)

Zhurnal Tekhn. Fiz. 1957, Vol 27, Nr 6, pp 1215 - 1220 (U.S.S.R.)

PERIODICAL

An apparatus for the keeping constant of the temperature of autogenerators as well as the construction of a thermostat by means of semiconductor-thermo-elements are described. The results of the investigations which had been carried out by the Institute for Semiconductors together with the Faculty for Radio Engineering of the Mozhayskiy-Academy are given. 1.) A thermostat with a battery which consumes 3 - 4 W of electric energy can keep constant 100 cc at 20 - 30 ° C and within a temperature energy can keep constant 100 cc at 20 - 30 ° C and within a temperature fluctuation of from +60 to -60 ° C. 2.) The distribution of the quartz--autogenerator scheme, collected in a point- or plane triode, does not essentially increase the heat stress of the battery in a thermo-stablizing space. 3.) The blowing at the surface of the thermostat as well as of the radio-technical block is essential as the temperature within the block can be higher than 80 °C if the outer temperatures are 55 - 60 °C. 4.) In the case of work at low temperature conditions (-60°) an automatic switching off of the blowing, a regulation of the feeding current of the battery and an increase of the heat isolation of the thermostat must be provided. 5.) The heat-balance, i.e. the temperature demanded

(+35°C) is attained in the thermostat within 20 - 40 minutes. 6.) The

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Semiconducting Thermostat for Autogenerators

57-6-10/36

scheme within the thermostat must be composed of parts which are moisture-resistant to a high degree. 7.) The inertia of the thermostat is different in the case of heating and in the case of cooling. It mainly depends on the temperature-fluctuation-amplitude as well as on the relation between the capacity of the battery and the heat stress. (With 5 illustrations and 5 Slavic references).

ASSOCIATION

Institute for Semiconductors of the Academy of Science of the U.S.S.R. (Institut Poluprovodnikov AN SSSR, Leningrad)

PRESENTED BY SUBMITTED

29.12.1956

AVAILABLE

Library of Congress

Card 2/2

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

- 1. TKALICH, N. M.
- 2. USSR (6CO)
- 4. Shchekino District Coal
- Report on the prospecting survey for coal in the North Shchekino section of the Shchekino District in the Tula Province. (Abstract) Izv. Glav. upr. geol. fon. no. 3, 1947.

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

- 1. TKATICH, M. M.
- 2. USSR (600)
- 4. Coal Shchekino District
- 7. Report on the prospecting survey for coal in the North Shchekino section of the Shchekino District in the Tula Province. (Abstract.) Izv. Glav. upr. geol. fon. no. 3, 1947.

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

SHANTER, Yu.A.; TKALICH, N.Ye.

Ultrasonic control of cast parts. Zav.lab. 25 no.7:884 159.

1. Luganskiy teplovozostroitel'nyy zavod im. Oktyabr'skoy revolyutsii.
(Founding-Testing) (Ultrasonic testing)

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SHANTER, Yu.A.; TKALICH, N.Ye.

Ultrasonic inspection of weld seams. Zav.lab 25 no.7:818-821
'59.

1. Luganskiy teplovozostroitel'nyy zavod im. Oktyabr'skoy ravolyutaii.

(Welding-Testing)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

28 (5) AUTHORS:

Shanter, Yu. A., Tkalich, N. Ye.

sov/32-25-7-18/50

TITLE:

Ultrasonic Control of Welding Seams (Ulitrazvukovoy kontroli

svarnykh shvov)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 7, pp 818 - 82;

(USSR)

ABSTRACT:

The quality control of welding seams by means of ultrasonics and prismatic feeler gauges (FG) of the system TsNIITMASh can take place according to two schemes - with a direct ray and a reflected ray. The distance of the front surface of the (FG) from the middle of the welding seam, under consideration of the different rates of propagation of the longitudinal and transversal ultrasonic waves, is determined by means of an equation. Other equations serve for the determination of the position of the defect for the direct and the reflected sound ray. In the present case corresponding nomographs were drawn by means of equations, for (FG) with angles of 50 and 40° (Fig 2), and thus a considerable simplification of the computation was achieved. The work with such nomographs is illustrated by the example of the definition of the quality of a welding seam with a motal thickness of 10 mm. An appliance was designed for the exact

Card 1/2

Ultrasonic Control of Welding Seams

sov/32-25-7-18/50

displacement limit of the (FG) (Ref 1). A description of the working technique is given for the detection of cracks. Welding seams of bridge cranes, welded by hand, were tested according to the described method. Special samples of welding seams were produced with the standard types of defects (pores, cracks, slag enclosures etc) and the connection was examined between the shape of the echo signal on the screen of the crack detector and the kind of the defect. The investigations were carried out by means of the crack detector UZD-7N with frequencies of 2.5 megacycles. It was found that a provisional estimation can be made with regard to the kind of defect in the welding seam (Fig 4). There are 4 figures and 2 Soviet references.

ASSOCIATION:

Luganskiy teplovozostroitel'nyy zavod im. Oktyabr'skoy revolyutsii (Lygnnk Works for Locomotive Construction imeni Oktyabr'skaya revolyutsiya)

Card 2/2

28(5)

SOY/32-25-7-39/50

AUTHORS:

Shanter, Yu. A., Tkalich, N. Ye.

TITLE:

Attempt at Ultrasonic Control of Castings (Opyt ul'trazvuko-

vogo kontrolya litykh detaley)

PERIODICAL:

Zavodskaya laboratoriya, 1959, Vol 25, Nr 7, p 884 (USSR)

ABSTRACT:

The sensitivity of ultrasonic control was examined by controlling forgings and castings. The examinations were carried out with the apparatus UZD-7N and a feeler gauge at frequencies of 2.5 megacycles. The sensitivity curves obtained are given (Fig). In examining castings of large dimensions it was difficult to obtain the surface purity required ($\nabla \nabla 6, \nabla \nabla \nabla 7$). In these cases the roughly treated surface ($\nabla 2, \nabla 3$) of such castings was filled and it was found that thus a sufficiently sensitive control could be carried out. Upon increasing the thickness of the filler layer, however, the sensitivity of control decreases. Cast ccg wheels of steel 45KhNT and cast die castings of steel 5KhNV were ultrasonically controlled by the method

described. There is 1 figure.

Card 1/2

Attempt at Ultrasonic Control of Castings

SOV/32-25-7-39/50

ASSOCIATION: Luganskiy teplovozostroitel nyy zavod im. Oktyabr skoy revolyutsii (Lugansk Locomotive Construction Factory imeni Oktyabr skaya revolyutsiya)

Card 2/2

DOLIDZE, G.V., kand.biolog.nauk; VOLKOVA, L.P., starshiy nauchnyy sotrudnik; NESTERENKO, N.I., kand.biolog.nauk; TKALICH, P.P.

From practices in the use of poisonous chemicals. Zashch. rast. ot vred. i bol. 8 no.9:20-21 S '63. (MIRA 16:10)

1. Institut sadovodstva, vinogradarstva i vinodeliya Gruzinskoy SSR (for Dolidze). 2. Pskovskaya sel'skokhozyaystvennaya opytnaya stantsiya (for Volkova). 3. Laboratoriya toksikologii Vsesoyuznogo nauchno-issledovatel'skogo instituta sakharnoy svekly, Kiyev (for Nesterenko).

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

TKALICH, P.P., mladshiy nauchnyy sotrudnik

Biological mathod for controlling the borer Pyrausta nubilalis Zashch. rast. ot vred. i bol. 6 no.8:24-25 Ag '61. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lubyanykh kul'tur, g. Glukhov, Sumskoy obl.

(Hemp-Diseases and pests)

(Pyralid moths-Biological control)

(Trichogramma)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

- 1. TKALICH, S. M.
- 2. USSR (600)
- 4. Geological Research
- 7. Botanical methods in geological exploration. Bot. zhur. 37 no. 5, 1952

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

- 1. TKALICH, S. M.
- 2. USSR 600
- B. Prospecting
- 7. Contents of iron in plants as a prospecting criterion, Priroda, 42, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

TKALICH, Serafim Mironovich; KRASNIKOV, V.I., red.; VERSTAK, G.V., red.izd-va; BYKOVA, V.V., tekhn.red.

[Practical guide on the biogeochemical method of prospecting for ore deposits] Prakticheskoe rukovodstvo po biogeo-khimicheskomu metodu poskov rudnykh mestorozhdenii. Moskva. Gos. nauchno-tekhnizd-vo lit-ry po geol. i okhrane nedr. 1959. 50 p. (MIRA 12:8) (Geochemical prospecting) (Indicators (Biology))

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

ANTIPOV, G.I.; IVASHCHENKO, M.A. [deceased]; KORABEL'NIKOVA, V.V.;
KOSYGIN, M.K., dotsent; KUZHETSOV, G.A., dotsent; PEKARIN,
P.M.; ROSLYAKOV, G.V., dotsent; STRAKHOV, L.G.; CHERNYSHEV,
G.B., red.; TKALICH, S.M., red.; MUKHIN, S.S., red.izd-va;
GUROVA, O.A., tekhn, red.

[Angara-Ilim iron ore deposits of trap formation in the southern Siberian Platform] Angaro-Ilimskie zhelezorudnye mestorozhdeniis trappovoi formatsii iuzhnoi chasti Sibirskoi platformy. Moskva. Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr. 1960. 375 p. (MIRA 13:10)

1. Russia (1923- U.S.S.R.) Ministerstvo geologii i okhrany nedr.
2. Geologi Irkutskogo geologicheskogo upravleniya (for Antipov.
Ivashchenko, Korabel'nikova, Pekarin, Strakhov). 3. Irkutskiy
gornometallurgicheskiy institut (for Kosygin, Roslyakov). 4. Irkutskiy gosudarstvennyy universitet (for Kuznetsov). 5. Glavnyy
inzh. Irkutskogo geologicheskogo upravleniya (for Tkalich).

(Angara-Ilim region--Iron ores)

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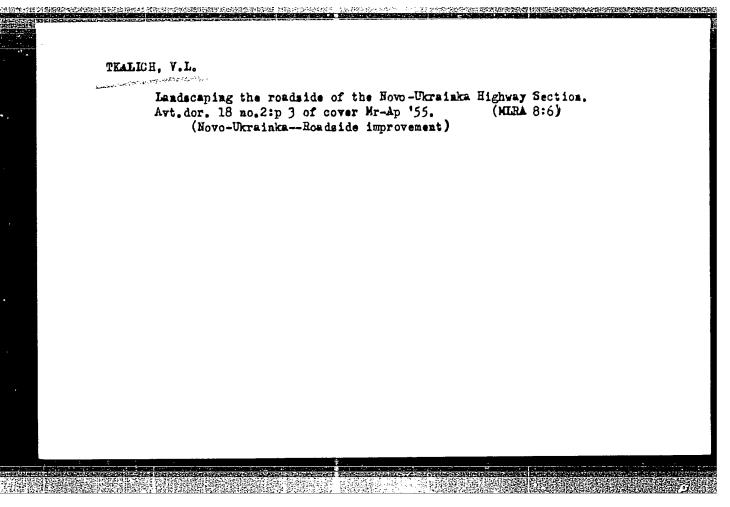
BYKADOROV, V.S., red. toma; PEKARETS, P.A., red. toma; RADCHENKO, G.P., red. toma; RYADOKON', N.F., red. toma; TYALICH, S.M., red. toma; IZRAILEVA, G.A., ved. red.

[Geology of coal and oil shale deposits in the U.S.S.R.] Geologiia mestorozhdenii uglia i goriuchikh slantsev SSSR. Vol.8. 1964. 790 p. (MIRA 17:12)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy geologioleskiy komitet.

Studies of karst carried out by the Southern Ural Geological
Administration; theses. Nov.kar.i spel. no.2:65-66 '61.
(MIRA 15:9)

(Ufa Valley—Karst)
(Belaya Valley (Bashkiria)—Karst)



ACC NR: AR7000838

SOURCE CODE: UR/0058/66/000/009/G001/G001

AUTHOR: Saltanov, M. V.; Tkalich, V. S.

TITLE: Nonstationary problem in magnetic gas dynamics

SOURCE: Ref. zh. Fizika, Abs. 9G1

REF SOURCE: Visnyk Kyyivs'k. un-tu. Ser. fiz. ta khim., no. 6, 1966, 75-77

TOPIC TAGS: gas dynamics, linear equation, nonstationary problem, magnetic gas dynamics, relativistic problem, three dimensional problem, symmetry integral, steady state motion, Riemann wave, nonsteady flow, cyclic coordinate, hydrodynamics

ABSTRACT: The relativistic nonstationary problem of gas dynamics and magnetic gas dynamics is analyzed in the three-dimensional form for a case of two cyclic coordinates. A complete set of symmetry integrals is obtained. These are then used to derive an equation identical, except for the notations, to Rudnev's form of Sedov's equation in the theory of plane steady-state motions. Conditions are obtained in which the problem is reduced to the solution of a linear equation.

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UDC: 538.4

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Riemann waves are analyzed. An auxiliary function is introduced which satisfies the linear equation, and by means of which all the physical parameters are expressed in their final form. [Translation of abstract] [SP]				
SUB CODE:	20/			
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Cord 2/2	•		•	

TKALICH, Ye.F.; TKALICH, V.S.

Steady states of a high-temperature plasma. A plasma column in a longitudinal magnetic field. Zhur. tekh.

fiz. 32 no.12:1418-1427 D '62. (MIRA 16:2)

(Plasma (Ionized gaseb))

(Magnetae fields)

5/179/61/000/002/012/017 E081/E141

Tkalich, V.S., and Tkalich, Ye.F. (Sukhumi) **AUTHORS:**

The correspondence between stationary flow in TITLE:

hydrodynamics and magneto-hydrodynamics

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh

nauk, Mekhanika i mashinostroyeniye, 1961, No.2,

pp. 115-116

The paper is a continuation of previous work by V.S. Tkalich (Ref.4: Sbornik voprosu magnitnoy gidrodinamiki i dinamiki plazmy, Riga, 1959, p. 191; Ref.5: the present journal, 1960, No.1). The system of vector equations for the ideal magneto-hydrodynamics of an incompressible fluid are quoted from H. Alfvén (Cosmic Electrodynamics, IL, 1952). If the electric field vanishes, then in the stationary state ($\frac{\partial}{\partial t} = 0$) the equations reduce to :

$$\operatorname{div} H = 0, \qquad \operatorname{div} V = 0, \qquad V = \varphi H$$

$$\nabla w = V \times \operatorname{rot} V - \frac{1}{4\pi\rho} H \times \operatorname{rot} H, \qquad w = \frac{1}{2} V^2 + \frac{P}{\rho} + F \qquad (1)$$

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CIA-RDP86-00513R001755930002-9" APPROVED FOR RELEASE: 07/16/2001

The correspondence between \$/179/61/000/002/012/017

where $\phi = \phi(r)$ is a function of the coordinates. (Abstractor's note: ϕ is the only quantity in Eq.(1) defined in the paper). If $4\pi\phi^2 \neq 1$ the equations reduce to the simpler form (Eq.3) by introducing:

$$s \equiv sign (4\pi\rho\phi^3 - 1), \qquad \xi \equiv \pm \sqrt{s\left(\phi^3 - \frac{1}{4\pi\rho}\right)}, \quad U \equiv \xi H$$
 (2)

$$\nabla (sw) = \mathbf{U} \times \text{rot } \mathbf{U}, \quad \text{div } \mathbf{U} = 0, \quad (\mathbf{U} \nabla) \, \boldsymbol{\xi} = 0 \tag{3}$$

The first two equations in (3) coincide with the system of equations of stationary hydrodynamics, except that differing symbols are used. The solutions of these equations enable comparisons to be made of the kinetic and magnetic energies of the field and the solutions are compared with those obtained earlier by other workers. Acknowledgements are expressed to N.V.Saltanov for his participation in the discussions. There are 6 Soviet references.

SUBMITTED: October 11, 1960

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

。 1985年 - 1985年 -

TKALICH, V.S. (Sukhumi); TKALICH, Ye.F. (Sukhumi)

Conformity between stationary motions in hydrodynamics and magnetohydrodynamics. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i maskinostr. no.2:115-116

Mr-Ap '61.

(Hydrodynamics) (Magnetohydrodynamics)

(MIRA 14:4)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

TKALICH, V.S. (Sukhumi); TKALICH, Ye.F. (Sukhumi)

Normitationary spiral newments in multicomponent magnetohydrodynamics.

PMTF no.6:2.16 N.D. '61. (MIRA 14:12)

(Magnetohydrodynamics)

TKALICH, Ye.F.; TKALICH, V.S.

Steady states of a high-temperature plasma. A plasma column in a longitudinal magnetic field. Zhur. tekh. fiz. 32 no.12:1418-1427 D '62. (MTRA 16:2) (Plasma (Ionized gaseb)) (Magnetic fields)

31627 \$/207/61/000/006/002/025 A001/A101

26.1410

AUTHORS:

Tkalich, V.S., Tkalich, Ye.F. (Sukhumi)

TITLE:

On non-steady screw motions in multi-component magnetic hydrodynamics

PERIODICAL: Zhi

Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 6, 1961, 8 - 16

TEXT: The purpose of this work was investigation of non-steady screw motions in multi-component magnetic hydrodynamics. The authors introduce in the analysis the analogs of electromagnetic potentials (φ , rotB) and total momentum (P_k) of the unit of mass of k-type ions. A definition of "screw" motions is given as motions satisfying the condition:

 $rot P_{k} = a_{k} (P_{k} - \frac{u_{k}}{cm_{k}} rot B)$ (1.4)

The present work is restricted to studying "homogeneous" screw motions in which $a_k = a_k(t)$ i.e., quantities are independent of space coordinates. Then the system of equations given is linear with respect to the functions sought for, which

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On non-steady screw motions ...

are magnetic and electric fields and velocities V_k . Solving the system the authors express magnetic field in terms of a single vector F depending on coordinates and time and electric field in terms of the gradient of an arbitrary harmonic function γ_0 . If $a_k \neq 0$, momenta P_k and velocities V_k are expressed in terms of vector F. If $a_k = 0$, momentum P_k is a gradient, and such motions represent a generalization of potential motions in conventional hydrodynamics. Using harmonic-conjugated functions the authors solve the system of equations for the case of potential motions and find the vector fields of quantities E, H and V_k . The next case considered is steady motions; in case of the absence of any magnetic field, the equation of motion in the steady case is reduced to Bernoulli's equation. In the case of traveling waves, energy W_k depends on magnetic field H_0 and derivatives of function F. Several extreme cases of function F presenting a special interest are analyzed. One or another form of this function is selected depending on the mutual orientation of the magnetic field vector and direction of propagation of traveling waves. For the case of waves traveling along the magnetic field H_0 , which is applicable to plasma waveguides in which magnetic field is oriented along the waveguide axis, the form of F-function looks as follows:

 $F = F(q_1, q_2, \gamma_3 x_3 + \omega t)$ (5.1)

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31627 8/207/61/000/006/002/025 A001/A101

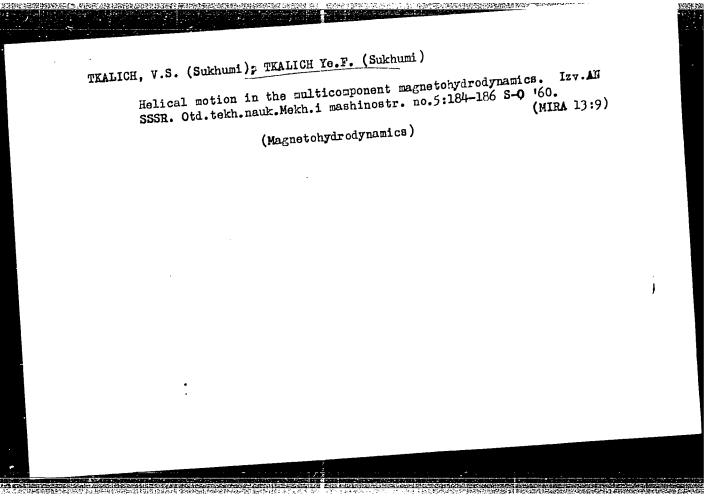
On non-steady screw motions ...

As an example the authors consider propagation of axial-symmetrical waves in a cylindrical waveguide. Introducing dimensionless quantities for frequency, density and phase velocity the authors derive a dispersion equation and find the conditions under which its solution is a real quantity. There are 17 references, 16 of which are Soviet-bloc.

SUBMITTED: February 16, 1961

*>**

Card 3/3



IVANOV, Boris Nikolayevich; TKALIN, Ivan Mikhaylovich; SOLMTSEV, Vyacheslav Aleksandrovich; SHTRUM, Viktor L'vovich; SHNAYDZR, Roman Izrayle-vich; MAYANSKIY, Tosif Isaakovich; BORISOVA, Volya Petrovna; ARUFTU-NOV, V.O., retsenzent; BLEKHSHTEYH, L.I., red.; SOBOLEVA, Ye.M., tekhn.red.

[Technology of the manufacture of electric instruments] Tekhnologiia elektropriborostroeniia. Moskva, Gos.enorg.izd-vo, 1959.

(MIRA 13:4)

(Electric apparatus and appliances)

TKALIN, Ivan Mikhaylovich; SHTRUM, Viktor L'vovich; MAYOROV, S.A., kamd: tekhn. nauk, retsenzent; BLEKHSHTEYN, L.I., inzh., red.; SOBOLEVA, Ye.M., tekhn. red.

[Automation and mechanization in the manufacture of electrical instruments] Mekhanizatsiia i avtomatizatsiia v elektropriborostroenii. Moskva, Gosenergoizdat, 1962. 331 p.

(Electric instruments) (Automation)

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Ender Conditions to the Personness in the Development of Manu- Malantipy, F.P. [Kuybysher]. Special Features in the Development of Manu- Naturing Processes With the introduction of Group Machining of Parts (Controlled Processes With the Introduction of Group Machining of Parts	Expansions, J.A. (Raddagrad). The Experience of Introducting Group-Processing Section 1. 1 (Section 2). The Experience of Introducting Group-Processing Section 1. 1 (Section 2). The Experience of Introducting Group-Processing 200 Manufacture 1. 200 Manufacture	of Gereral Zears Operation of a Plant John of Introducing Group-Processing	Existingual, P.D. [isolograd]. The Experience of Introducing Group Processing 160 to Exceptional Symmethics In the Existinguants of the Leningrad Symmethics 278	Table-18 Califord, Approximate to Electric Instrument Manufacturing, 260 Mechanisation of Lessably Operations in Electric Instrument Manufacturing, 260 Mechanisation Processing	Wags Alfa [Lesingrad]. Experience in Application of the Group Weshou in 246 Sench-Assembly Openations	Achite In P. (form). Group Salups and Maleiproduce Lines for Fact Modifine 236 in the Livershift sared artopographics (Liver Leading-Track Plant).	of the Organizington Institute) Reducts_d_h. [Foromesh]. Group [Processing] Lines and Chesed Sectors in Small- Lot Production	Debition A.i. Property (Antiprocess of the "granty Projectory" Plant (Walthout Tooks (From the Wort Experience of the "granty Projectory") (Washing Tooks (From the Wort Experience 22) (Astronomy) (Walthout Production Lines (From the Wort Experience 22)	TABLE CF CONTESTS:	Conference on drup recessing in the recession of a section was called by half Screenbar Alla, 1999 in Bestinger. The conference was called by rejectific and technical societies of the machine and instrument indiatry, agric party, and insurements. The articles are best on the stretched of indiatry in introducing the grouping principle in processing. They discuss a state of such a decembers, and group machining as the best of such construction of secondary and an adversariation of sprinciples in the secondary processing on relices such that introduction of group-machining matters of preservating on relices such the laterated the processing on relices such the laterated the processing on relices such that are considered. Planting, secondardisation, and solveds for calculating the secondary offsetters of group processing are also treated. No personalities are manifored. There are no references.	PRINCES: The collection of actions is intended for technical pressured in sa- chine planty designing organizations and actantific research institutes. It may also be useful to skilled workers.	Ed. (111e page): 3.P. Mircfanor, Josin Price Winder, Rendidate of Pechnical Sciences; Zde: 4.5. March, Indiane of Pechnical Sciences, 7.5. Science; Ladidate of Pechnical Sciences, 7.5. Science; Daddidate of Pechnical Sciences, 8.A. Marchael Sciences, 8.A. Sciences, 8.A. Marchael Sciences, 8.A. Sciences, 8.A. Marchael	Grapporaya tekhnologiya w mashinsatroyanii i priborosiroyanii (iroun-fracessing Wathada in the Yachine and Instrument Industrias) Mostova Mashgis, 1920. 178 p. Errata ship inserted. 7,000 copies printei.	Yesogumnye soveshchanije po gruppovya technologickaskia proteessan v mahinostroyenii. ist, leningmaj, 1999	PHASE I BOUT EXPLICITATION SOV/4754	

Use of a multicycle continuous line for the production of electric instruments. Vest.elektroprom. 31 no.1:55-58 (MRA 13:5) Ja '60. (Assembly-line methods) (Electric apparatus and appliance)

VLASOV, Mikhail Fedorovich; PIGIN, Sergey Mikhaylovich; CHERVYAKOVA, Vera Ivanovna; LAVRUKHIN, M.A., retsenzent; TKALIN, I.M., retsenzent; LEKHSHTEYN, L.I., red.; ZHISHNIKOVA, O.S., tekhn. red.

[Assembly and adjustment of electric measuring devices]Sborka i regulirovka elektroizmeritel'nykh priborov. Izd.2., perer. Moskva, Gosenergoizdat, 1963. 260 p. (MIRA 16:3) (Electric meters)

PANKOV, S.Ye.; TKANKO, N.V.

First steps in lowering the production costs on the "Proletarskii"
State Cattle-Breeding Farm. Zhivotnovodstvo 20 no.5:24-30 My 158.

(MIRA 11:5)

1. Direktor plemsovkhoza "Proletarskiy," Ryazanskaya oblast' (for Pankov). 2. Glavnyy zotekhnik plemsovkhoza "Proletarskiy,"
Ryazanskaya oblast' (for Tkanko).

(Dairy cattle breeding)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

	Transligorikarskritera 1986s	EASE: 07/16/200		-00513R00175593
TKANOV	Yn.R.			
TAKNOT	, 143.1	ations on die casti	ng machines. Li	t.proizv.
	no.7:38-39 Jl	162. (Die casting—Saf		(MIRA 16:2)
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TKANY, Z.

"Torpedoing in hydraulic drilling."

p. 299 (Vodni Hospodarstvi) No. 11, Nov. 1957
Prague, Czechoslovakia

SO::Monthly Index of East European Accessions (EMAI) LC. Vol. 7, no. 4,
April 1958

Rotating worm boring, a new boring method for soft rocks. p.191.
(Stavivo, Vol. 35, No. 5, May 1957, Praha, Czechoslovakia)

So: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

TKANY, Z.; JEDLICKA, M.

Core bores with large profiles. p. 212. (Inzenyrske Stavby, Vol. 5, No. 4, Apr. 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

THAM, 2.

THORNOLGY

periodicals: BUDY Vol. 6, an. 12, Dec. 1059

THAM, Z. Hole boring for sereen blasting. p. 512.

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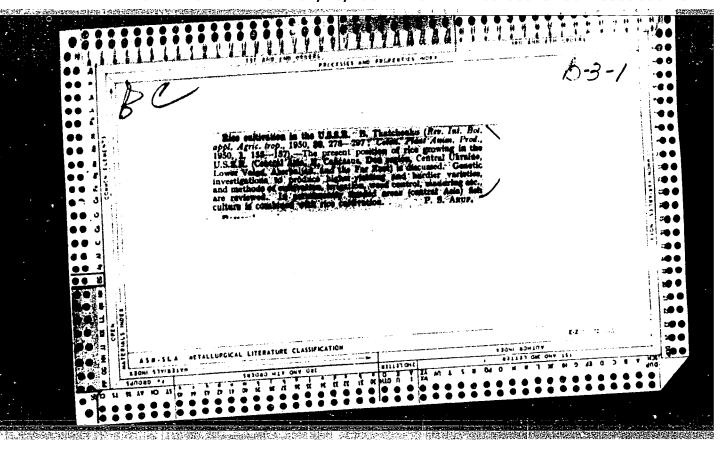
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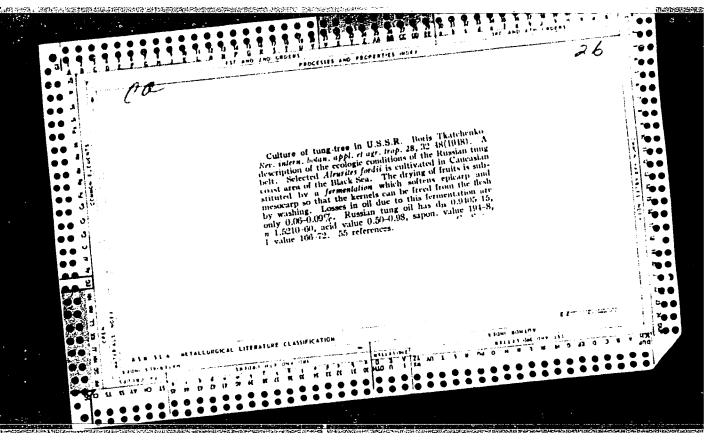
TKANY, Z.

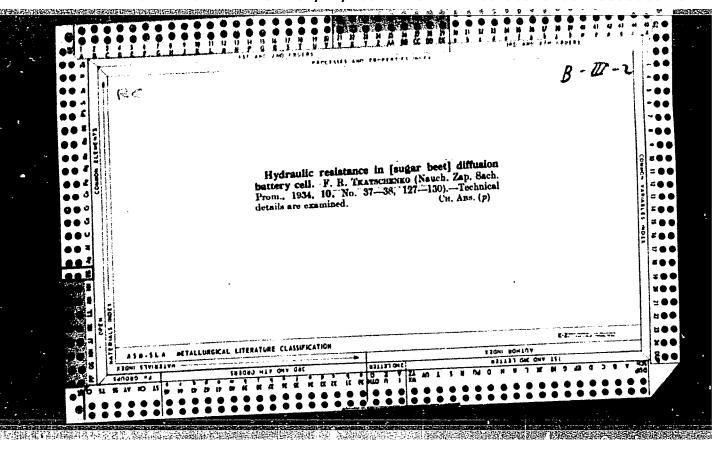
The determination of the boring ability of rocks.

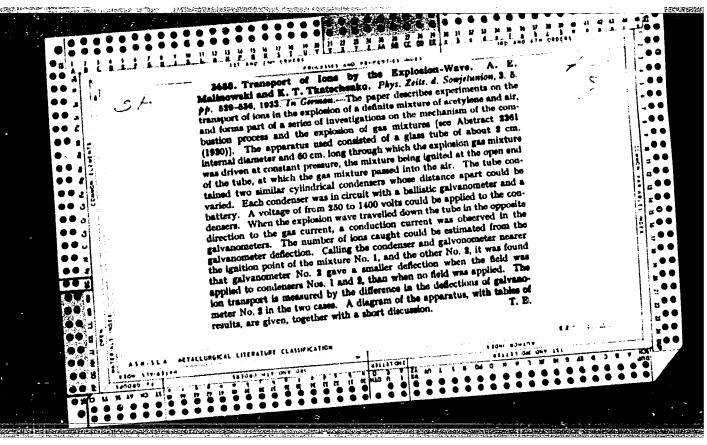
p. 524 (Inzenyrske Stavty) Vol. 5, no. 10, Cct. 1957, Fraha, Czechoslovakia

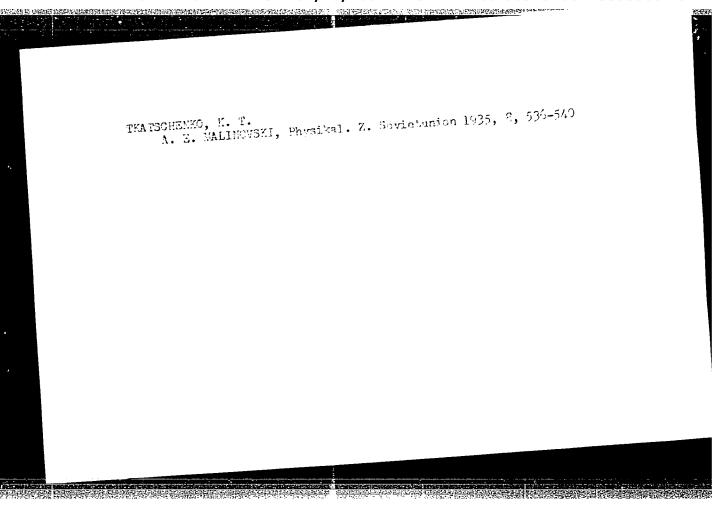
SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO. 1, JAN. 1958

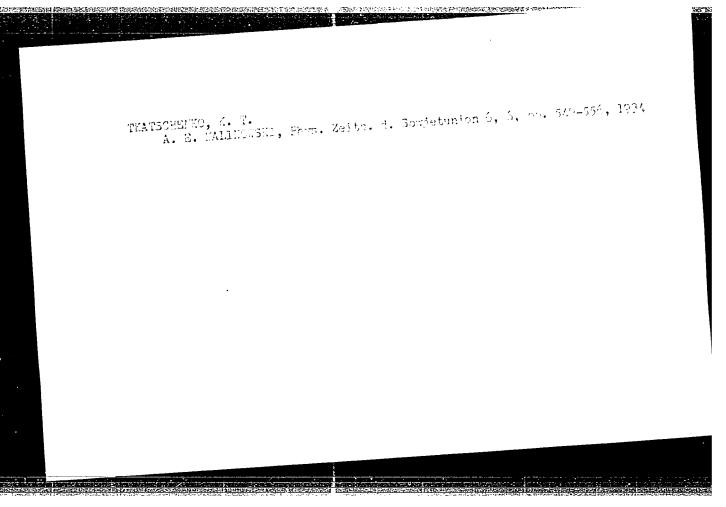






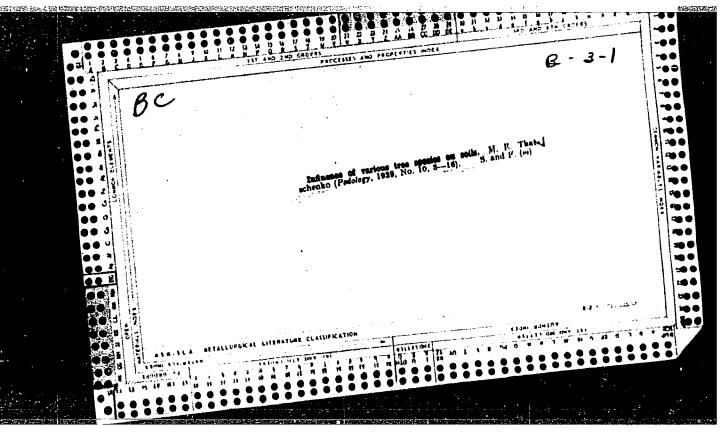


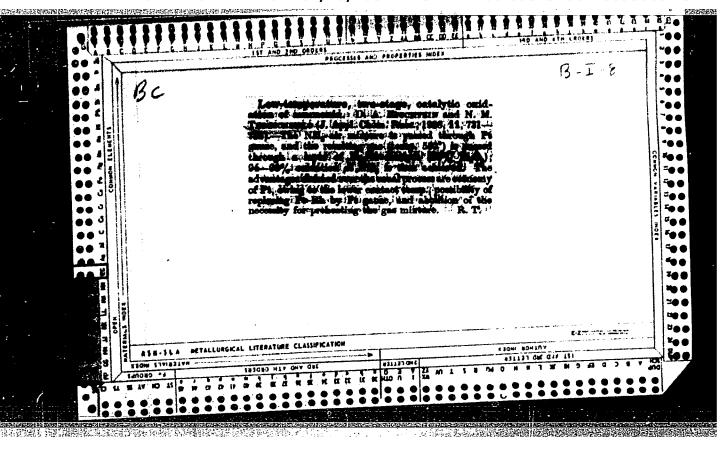


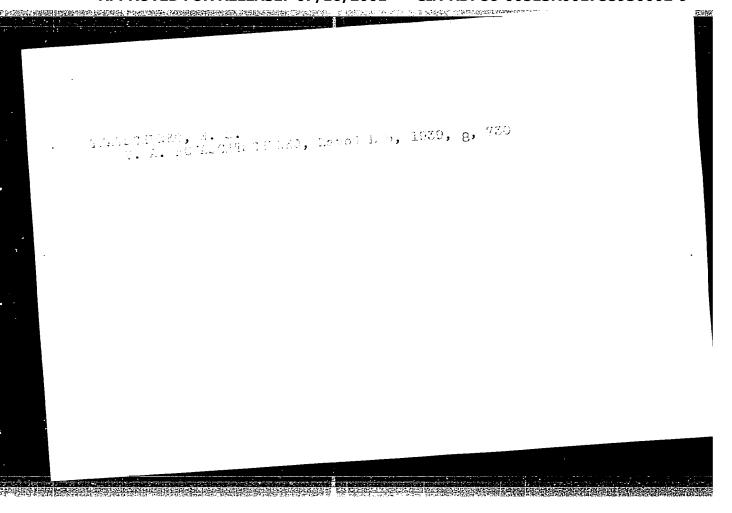


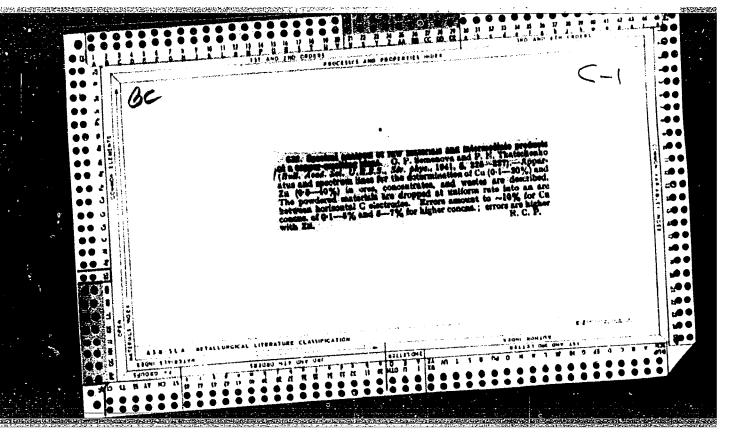
TKATECHYNKO, K.T.,
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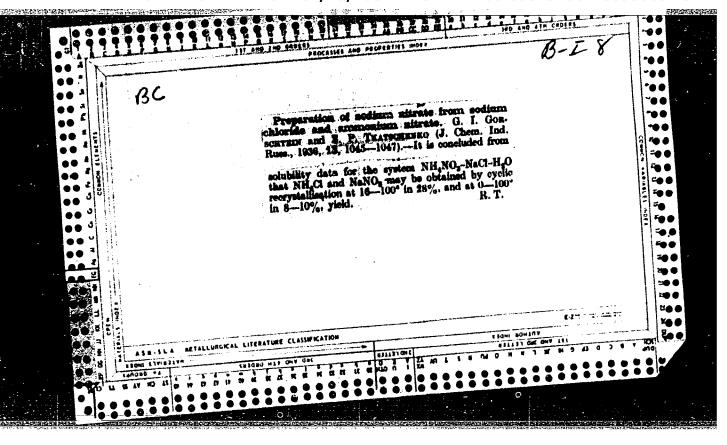
TKATSSECEKO, K.T.,
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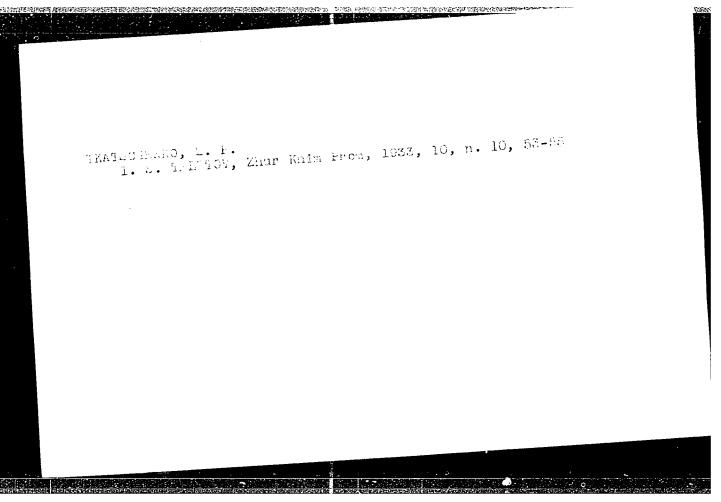












CIA-RDP86-00513R001755930002-9 "APPROVED FOR RELEASE: 07/16/2001

TKATSHENKO, G. V.

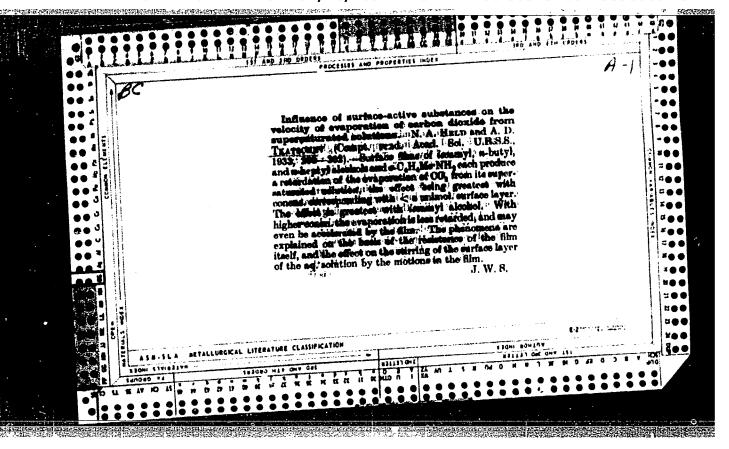
G. V. Tkatshenko and P. M. Khomikovskiy

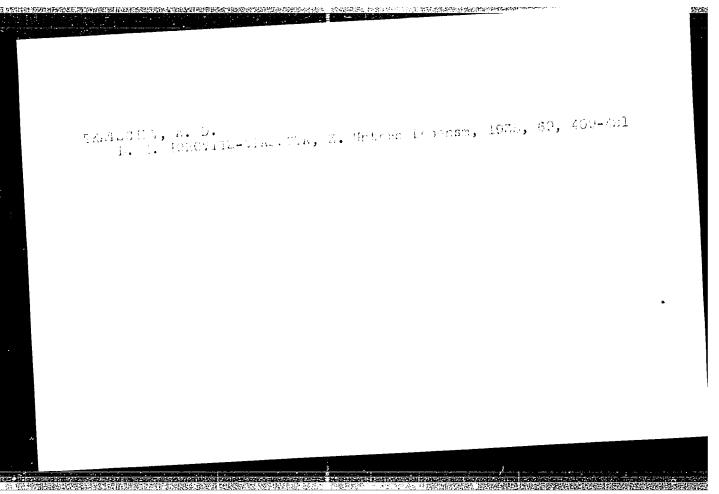
"The Mechanism of Emulsion Polymerization. Polymerization of 1.1-Dichloroethylene in Emulsifier-Solutions", Colloid Journal 13, 217-225, June 1951, Moscow

ABSTRACT AVAILABLE

D-50054

CIA-RDP86-00513R001755930002-9" **APPROVED FOR RELEASE: 07/16/2001**





PASSINSKIY, G.M., inzn. (Leningrad); TKALICH, M.B. (Leningrad)

Frotenting radiators from treezing in air conditioning systems.

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TKALICH, S.M.; MINEYEV, I.K., glavnyy red.; RYABENKO, V.Ye., zam. glavnogo red.; TUMOL'SKIY, L.M., zam. glavnogo red.; KUR'YANOV, F.K., otv. zav vypusk; BASSOLITSYN, Ye.P., red.; BLINNIKOV, I.I., red.; DAUKSHO, Yu.Ye., red.; DZINKAS, Yu.K., red.; ZHARKOV, M.A., red.; ZAVALISHIN, Yu.Ye., red.; MANDEL'BAUM, M.M., red.; MATS, V.D., red.; MALETOV, P.I. red.; NOMOKONOVA, N., red.; NOSEK, A.V., red.; SERD, A.I., red.; SEMENYUK, V.D., red.; TAYEVSKIY, V.M., red.; TIKHONOV, V.L., red.; TROFIMUK, I.N., red.; TOMILOVSKAYA, M.V., red.; FOMIN, N.I., red.; SHAMES, P.I., red.; TROSHANIN, Ye.I., tekhn. red.

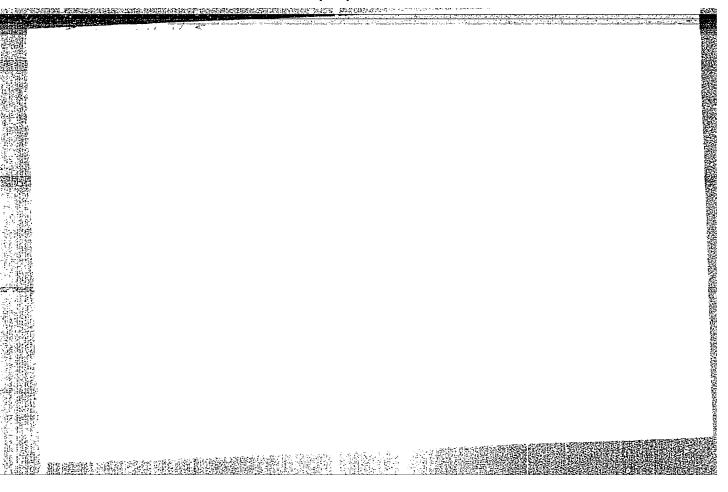
[Biogeochemical anomalies and their interpretation.] Biogeokhimicheskie anomalii i ikh interpretatsiia. Irkutsk, 1961. 39 p. (Materialy po geologii i poleznym iskopaemym Irkutskoi oblasti no.3).

TKALICH, V.S.

Focusing in a linear accelerator by means of traveling waves [with summary in English]. Ukr. fiz. zhur. 2 no.4:299-302 O-D 157. (MIRA 11:3)

1. Fiziko-tekhnichniy institut AN URSR.

(Particle accelerators)



AUTHOR:

TKALICH, V.S.

TITLE:

On the Possibility of Focussing in a Linear Scoelerator by Means PA - 2996 of a Travelling Wave. (O vozmoshnosti fokusirovki lineynom

uskoritele begushchey volnoy, Russian)

PERIODICAL:

Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 3, pp 625-626

Received: 6 / 1957

Reviewed: 7 / 1957

ABSTRACT:

By a modification of the method of radial- and phase stabilization by the introduction of periodic inhomogeneities into the wave conductor (of. V.MYRON, L.GOOD, Phys.Rev. 92, 538, 1953) the possibility of a stabilization of the motion of heavy particles by means of a focussing travelling wave of an additional generator is here theoretically discussed. The nonrelativistic equations of motion are first solved for synchronic particles by successive approximations. Next, small disturbances of the motion are examined and the conditions for simultaneous radial- and phase stability are derived. By the addition of nonlinear terms expressions for the angular capture domain and the permitted dispersion of velocities are obtained. (6 Citations from Works Published).

ASSOCIATION:

Physical-Technical Institute of the Academy of Science of the Ukrainian SSR

PRESENTED BY:

SUBMITTED:

20.12.1956

AVAILABLE: Card 1/1

Library of Congress

sov/57-58-8-28/37 Stepanov, K. N., Tkalich, V. S. AUTHORS:

On Electron Plasma Vibrations in External Electric and TITLE:

Magnetic Fields (O kolebaniyakh elektronnoy plazmy vo

vneshnikh elektricheskom i magnitnom polyakh)

Zhurnal tekhnicheskoy fiziki, 1958, Nr 8, pp. 1789 - 1800 PERIODICAL:

(USSR)

This paper gives an account of the study of the propagation of electromagnetic waves in a plasma placed in cross-wise ABSTRACT:

arranged electric and magnetic fields. The thermal motion of the electrons is taken into consideration and the behaviour of the plasma waves is studied in detail. The fundamental equations are laid down and formula (19) for the dispersion is deduced. Several limiting cases involved in this equation are examined. Formulae (39) - (42) are deduced. They take account of the influence of the collision of the electrons with heavy particles per gap width (na shirinu razryvov). In the final part the vortex field is also considered (rot $E \neq 0$)

and the dispersion relation (46) for this case is obtained.

The refraction index of the plasma waves is computed from (46).

Card 1/2

CIA-RDP86-00513R001755930002-9" APPROVED FOR RELEASE: 07/16/2001

SOV/57-58-8-28/37

On Electron Plasma Vibrations in External Electric and Magnetic Fields

All solutions of (46) in the entire frequency range, for which

(46) is valid, can only be obtained, if $E_0 = 0$. A. I.

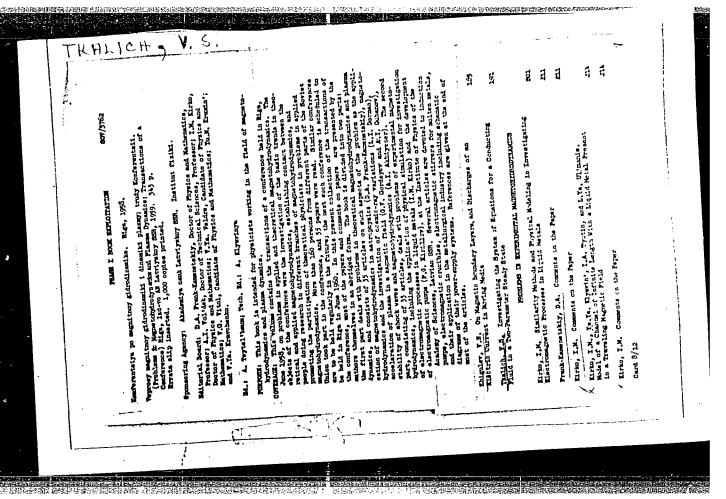
Akhiyezer suggested the problem and supervised the work, Ya. B. Faynberg and A. G. Sitenko discussed the results with the authors. There are 9 references, 8 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR, Khar'kov (Physical and

Technical Institute, AS USSR, Khar'kov)

SUBMITTED: April 27, 1957

Card 2/2



507/179-59-4-18/40

10(4)

Tkalich, V. S. (Sukhumi)

AUTHOR:

Investigation of the System of Equations of Magnetic Hydromedian personal and a second district

TITLE:

mechanics

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, 1959, Nr 4, pp 134-135 (USSR)

ABSTRACT:

The system of equations of ideal magnetic hydromechanics (hydromechanics of incompressible liquids) is first written down in the absolute Gaussian unit system (Ref 1). For the steady case $\partial/\partial t = 0$, the system can be written down in form of (1) after integration of the induction equation. This system is studied in any orthogonal coordinate system (q_1, q_2, q_3) . The investigation is restricted to $\partial/\partial q_3 = 0$, and the method by I. S. Gromeka (Refs 3,4) is generalized for this case. The general solutions of the first two equations (1) have the form of (2). Formula (2) is substituted into the third component of the induction equation, $\partial \phi/\partial q_3$ is assumed

Card 1/2

to be equal to 0 (ϕ is the electrostatic potential), and a Jacobian equation (Ref 5) is obtained, the general solution

sov/179-59-4-18/40

Investigation of the System of Equations of Magnetic Hydromechanics

of which has the form of (3). When the cross derivations of function Φ are set equal to each other, an equation is obtained which gives a further Jacobian equation by means of (2). The third component of the equation of motion has a similar form. The total solution of this system is (4). These equations (4) constitute a system of equations which are linear with respect to H and V. If the determinant of the system is not equal to zero, the system can be solved with respect to H and V, and the formulas (5) are obtained. By use of (2) the two first components of the equation of motion (1) can be represented in form of (6). This formula is equivalent to Pfaff's equation. H and V are eliminated, and formula (7) is obtained by means of (5). On the assumption of (8), formula (7) can be simplified to formula (9). The general solution of (9) is equation (10). If the conditions of (11) are applicable, formula (10) becomes linear .- P. Ya. Kochina discussed the results of the investigation with the author. N. V. Saltanev and T. R. Soldatenkov showed continuous interest in the present investigation. There are 6 Soviet references.

SUBMITTED: Card 2/2

December 29, 1958

67600 sov/179-59-5-21/41 10.4000 Tkalich, V. S. (Sukhumi) Transformation of a System of Equations for the AUTHOR: Hydrodynamic Approximation of Plasma 1 TITLE: PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1959, Nr 5, pp 122-123 (USSR) ABSTRACT: The plasma of N types of ions considered in a stationary Maxwell system $\partial/\partial t = 0$ is defined by Eq (1), where ϕ is the electrostatic potential. The general solution can be presented in the form of Eq (2), where ψ and ψ_{k} - stream functions, h_3 - the third Lame coefficient; $H = h_3 H_3$, $V_k = h_3 v_{k3}$ If Eq (2) is substituted in the equation of ion motion, Eq (1) (k-type), then the formula $J(\psi_k, \alpha_k \psi + v_k) = 0$ can be obtained, the solution of which can be shown as Eq (3). Thus, the magnitude of H can be defined as Eq (4). By excluding V_k from the third equation of Eq (3), the expression Eq (5) can be obtained from which the formula (6) is derived for the first two

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

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SOV/179-59-5-21/41
Transformation of a System of Equations for the Hydrodynamic Approximation of Plasma

components of the equation of ion motion (k-type):

ts of the equation of ion motion (12 s),
$$\nabla^{*}_{W_{k}} = (v_{k} \times v_{0} t v_{k})^{*} + a_{k} (v_{k} \times H)^{*},$$

$$(6) can be sh$$

The system of equations (5) and (6) can be shown in the linear form as Eq (7), which, together with Eqs (2) to (4), determines the magnetic field and the velocity. Acknowledgments are expressed to N.V.Saltanov for his advice. There are 4 Soviet references,

SUBMITTED: December 29, 1958

Card 2/2

CIA-RDP86-00513R001755930002-9" APPROVED FOR RELEASE: 07/16/2001

69305 s/179/60/000/01/030/034 E032/E514 Tkalich, V.S. (Sukhumi) A Study of the Equation of Magnetic Hydromechanics in 10.2000A AUTHOR: PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh TITLE: nauk, Mekhanika i mashinostroyeniye, 1960, Nr 1, ABSTRACT: The present paper is a continuation of previous work reported by the author in Ref 1. The notation employed is defined in that paper, where it was shown that in the steady state the system of equations of ideal magnetic hydromechanics is given by Eq (1) of the present paper. The analysis of these equations given in Ref 1 is continued in the present note, using the method of I. S. Gromeka (Refs 1-6). The analysis is carried out in an arbitrary orthogonal system of coordinates (q₁, q₂,q₃) assuming that the quantities H, v, D, and w are independent of q. The two-parameter and w are independent of q. The two-parameter were shown in Ref 1 to be card 1/3 solenoidal fields H and V were shown in Ref 1 to be

S/179/60/000/01/030/034 E032/E514

A Study of the Equation of Magnetic Hydromechanics in the Two-Parameter Case

given by Eq (2), where H and V are given by Eq (3) given by Eq. (2), which is an arbitrary functions of χ and and ψ , ψ , α , β are all arbitrary function of q_1 and the latter quantity is an arbitrary function of the latter quantity is an arbitrary function of q1 q2. Substituting Eq (2) into Eq (1), one finds that the electrostatic potential is a function of the parameter t. Moreover, the arbitrary function β can be expressed in terms of the electrostatic potential Φ in the form $\beta = cd \Phi/d \xi$. Thus, all the equations in Eq (1) can be integrated in a closed form except for the first two components of the equation of motion (Eq 5). If the determinant of the system given by Eq (3) has a non-zero value, then the parameter & is conveniently chosen to be of the form given by Eq (6). The quantities H and V are then given by Eq (7). Integration of the equation of motion (Eq 5) yields the solution given by Eq (8), which can also be rewritten in the form given by Eq (10). If w is of the form defined by Eq (11), where a, a and a and a are arbitrary constants, then the basic equation (Eq 10)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

S/179/60/000/01/030/034 E032/E514

A Study of the Equation of Magnetic Hydromechanics in the Two-Parameter Case

becomes linear. The analysis is then continued for the special case of a cylindrical system of coordinates and assuming that the functional relationship $J(\xi, r) = 0$ exists. An expression is derived for the total pressure P(r). A further special case discussed is that in which the determinant of Eq (3) is equal to zero. Acknowledgments are made to N. V. Saltanov and Ye.F. Thalich for valuable discussions.

Tkalich for valuable discussions.

There are 8 references, 7 of which are Soviet and 1 English.

SUBMITTED: October 23, 1959

Card 3/3

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9

TKALICH, V.S. (Sukhumi); TKALICH Ye.F. (Sukhumi)

Helical motions in the multicomponent magnetohydrodynamics. Izv.AN

SSSR. Otd.tekh.nauk.Mekh.i mashinostr. no.5:184-186 S-Q '60.

(MIRA 13:9)

(Magnetohydrodynamics)

6. 3000 (3201, 1099, 1162) 5110 0150 1144, 1063, 1147 86813 S/185/60/005/001/013/018 A151/A029

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Tkalick VS Pakhomov, V.I.

TRAILCR. TRAILCR. Trail Trail Tube Filled With a Liquid
Files Elastic Waves in a Thin Toroidal Tube Filled With a Liquid

SHOODICALS Ukrayins'kyy Fizychnyy Zhurnal, 1960, Vol. 5, No. 1, pp. 115 - 117

The generation of homogeneous acoustic fields in a liquid is of great importance for certain technical purposes (Ref. 1). A homogeneous acoustic field (according to period) can be generated in a resonator which is shaped like a toroidal tube filled with a liquid. In such a system, a wave can be established which runs along the tube's axis (Ref. 2). Mathematically and by considering the potential of the liquid's velocity, the deformation vector in a hard body, the velocity of the sound in the liquid (c), the longitudinal (ce) and body, the velocity of the sound in the liquid, the normal tension component on transverse (ct) sound velocities in the liquid, the normal tension component on inner surface of the tube, as well as a number of other factors, the authors tensive a formula by which the phase speed can be calculated:

in inner surface of the the phase speed can be calculated:

serive a formula by which the phase speed can be calculated:

$$\frac{1}{2} + \frac{1}{2} + \frac{$$

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Elastic Waves in a Thin Toroidal Tube Filled With a Liquid

where $a=(\frac{ct}{c_e})^2$, $b=(\frac{ct}{c})^2$, $d=2\frac{\rho r_v}{\rho_0 \Delta r}$. The phase speed calculated according to the above formula (for the minus symbol) coincides with the results of the calculation and the experiment (Ref. 4) in the case of small frequencies. The ra dicant expression in the formula is a positive value. It has been established that there are always two different undamped waves, which correspond to two solutions (8) of the own frequencies equation (7). The relationship of the ener gy flow in the wall of the tube to the energy flow in the liquid q at d>1 is (9)

gy flow in the wall of expressed in the following way: $q = \frac{a(\Omega^2 b - 1)}{2 d} \cdot \frac{a^2 + (1 - a)^2}{(1 - a)(1 - 2a)^2}$

Therefore, if the phase speed is close to the sound velocity in the liquid, then the greated part of the energy is concentrated in the liquid. Thus, the homogeneity of the acoustic field in a liquid is attained (on the average according to period) owing to the thinness of the tube. In closing, the authors express trear gratitude to K.D. Syel'nykov, O.I. Akhiyezer, V.S. Humenyuk, H.Ya. Lyubars'kyy and M.A. Khyzhnyak for valuable discussions. There are 4 references: 3 Soviet and 1 English.

card 2/3

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9

86813

S/185/60/005/001/013/018 A151/A029

Tastic Waves in a Thin Toroidal Tube Filled With a Liquid

95 TATION: Fizyko-tekhnichnyy instytut AN URSR (Physico-Technical Institute,

AS UkrSSR)

SJEMITTED: October 17, 1959

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Card 3/3

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9"

S/057/60/030/010/017/019 B013/B063

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Saltanov, N. V., Tkalich, V. S.

AUTHORS : TITLE:

Magnetohydrodynamic Waves of Finite Amplitude

PERIODICAL:

Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 10, pp 1253 - 1255

TEXT: From the set of equations (1) for an ideal, incompressible fluid of ideal conductivity the authors derived equation (7),

 $\left[\left(\frac{\partial}{\partial t} + v_0 \frac{\partial}{\partial r}\right)^2 - v_\alpha^2 \frac{\partial^2}{\partial r^2}\right] \vec{\psi} = 0; \ v_\alpha^2 = H_0^2/4\pi\varrho, \text{ on the condition that all}$

physical quantities depend on time and one coordinate. The general solution (Ref. 4) of equation (7) is given by $\vec{\psi} = \vec{\psi}_{+}(\mathbf{r} - \int \mathbf{v}_{0} dt + \mathbf{v}_{\alpha} t) + \vec{\psi}_{-}(\mathbf{r} - \int \mathbf{v}_{0} dt)$ $v_{\alpha}t$) (8), where the vectors $\vec{\psi}_{\perp}$ and $\vec{\psi}_{\parallel}$ are arbitrary functions of their arguments. Equation (9), $\vec{h} = \vec{\psi}_{\perp}^{\dagger} + \vec{\psi}_{\parallel}^{\dagger}$, $\vec{v}_{\parallel} = (1/\sqrt{4\pi Q})(\vec{\psi}_{\parallel}^{\dagger} - \vec{\psi}_{\parallel}^{\dagger})$, holds for the fields h and v. This solution describes the sum of two waves

Card 1/2

Magnetohydrodynamic Waves of Finite Amplitude \$\frac{5}{057}/60/030/010/017/019 \\
\text{B013/B063}

propagating along a constant magnetic field in opposite directions. The conducting fluid is assumed to propagate along the field at a velocity $\mathbf{v}_{o}(t)$. The latter is an arbitrary time function. In this wave, the vector of the variable part of the magnetic field strength is arbitrarily polarized. The following relations hold for $\mathbf{v}_{o} \neq 0$:

$$\vec{\psi} = \vec{\psi}_{+}(\mathbf{r} + \mathbf{v}_{\alpha}\mathbf{t}) + \vec{\psi}_{-}(\mathbf{r} - \mathbf{v}_{\alpha}\mathbf{t})$$

$$\vec{h} = \vec{\psi}_{+}^{\dagger} + \vec{\psi}_{-}^{\dagger}, \quad \vec{\nabla} = (1/\sqrt{4\pi\varrho}) (\vec{\psi}_{+}^{\dagger} - \vec{\psi}_{-}^{\dagger})$$
(10)

In waves having the form of (10), the vectors \vec{h} and \vec{v} , in general, are not parallel. As a result, there is one component of the alternating field in the direction of a constant magnetic field (contrary to the Alfvén and Valen waves). The authors thank Ye. F. Tkalich for discussions. There are 4 Soviet references.

SUBMITTED: April 8, 1960

Card 2/2

"APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R001755930002-9

TRALICH, V.S

s/056/60/039/01/12/029 B006/B070

AUTHOR:

Tkalich, V. S.

TITLE:

Waves of Finite Amplitude in a Multi-component Conducting

Medium

PERIODICAL:

Zhurnal eksperimental noy i teoreticheskoy fiziki, 1960,

Vol. 39, No. 1 (7), pp. 73-77

The purpose, for which the present work was undertaken, was to reduce the system of equations which in hydrodynamical approximation describes a non-perfect plasmal which consists of N kinds of ions each of which may be considered to be an incompressible fluid) to a linear system. With this reduction the assumption that the signal be small is avoided. The propagation of waves with finite amplitude is investigated for the case when the neutral plasma is situated in a constant homogeneous magnetic field. Some conditions for the applicability of the hydrodynamical approximation to a plasma are mentioned. Thus, for example, to satisfy the condition of incompressibility, the plasma temperature should be so high that the thermal velocity substantially exceeds the

Card 1/2

Waves of Finite Amplitude in a Multi-component Conducting Medium

S/056/60/039/01/12/029 B006/B070

translational velocity. Results obtained for a two-component plasma (particularly the phase velocity) are compared with the results of other authors (S. I. Braginskiy, Ref. 3, S. I. Syrovatskiy, Ref. 15). In conclusion, the choice of appropriate boundary value conditions is considered. The author thanks N. V. Saltanoy and Ye. F. Tkalich for discussions. There are 15 references: 12 Soviet, 2 American, and

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SUBMITTED: October 22, 1959

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9

TKALICH, V. S.

Cand Phys-Math Sci - (diss) "Several non-linear problems of plasma dynamics." Sukhumi, 1961. 12 pp; (Physics-Technical Inst Academy of Sciences Georgian SSR); 250 copies; price not given; (KL, 10-61 sup, 205)

5/179/61/000/002/012/017 E081/E141

AUTHORS:

Tkalich, V.S., and Tkalich, Ye.F. (Sukhumi)

TITLE:

The correspondence between stationary flow in

hydrodynamics and magneto-hydrodynamics

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh

nauk, Mekhanika i mashinostroyeniye, 1961, No. 2,

pp. 115-116

The paper is a continuation of previous work by V.S. Tkalich (Ref. 4: Sbornik voprosu magnitnoy gidrodinamiki i dinamiki plazmy, Riga, 1959, p. 191; Ref.5: the present journal, 1960, No.1). The system of vector equations for the ideal magnetohydrodynamics of an incompressible fluid are quoted from H. Alfvén (Cosmic Electrodynamics, IL, 1952). If the electric field vanishes, then in the stationary state ($\frac{1}{3}/\frac{1}{3}t = 0$) the equations reduce to :

$$\operatorname{div} \mathbf{H} = 0, \quad \operatorname{div} \mathbf{V} = 0, \quad \mathbf{V} = \varphi \mathbf{H}$$

$$\nabla w = \mathbf{V} \times \operatorname{rot} \mathbf{V} - \frac{1}{4\pi\rho} \mathbf{H} \times \operatorname{rot} \mathbf{H}, \quad w = \frac{1}{2} \mathbf{V}^2 + \frac{P}{\rho} + P \tag{1}$$

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The correspondence between \$/179/61/000/002/012/017 E081/E141

where $\varphi = \varphi(\mathbf{r})$ is a function of the coordinates. (Abstractor's note: φ is the only quantity in Eq.(1) defined in the paper). If $4\pi \varphi^2 \neq 1$ the equations reduce to the simpler form (Eq.3) by introducing:

$$s \equiv sign (4\pi\rho \varphi^2 - 1), \qquad \xi \equiv \pm \sqrt{s \left(\varphi^2 - \frac{1}{4\pi\rho}\right)}, \quad U \equiv \xi H$$
 (2)

$$\nabla (sw) = \mathbf{U} \times \text{rot } \mathbf{U}, \quad \text{div } \mathbf{U} = 0, \quad (\mathbf{U} \nabla) \, \boldsymbol{\xi} = 0$$
 (3)

The first two equations in (3) coincide with the system of equations of stationary hydrodynamics, except that differing symbols are used. The solutions of these equations enable comparisons to be made of the kinetic and magnetic energies of the field and the solutions are compared with those obtained earlier by other workers. Acknowledgements are expressed to N.V.Saltanov for his participation in the discussions. There are 6 Soviet references.

SUBMITTED: October 11, 1960

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S/179/61/000/005/004/022 E031/E426

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AUTHOR:

Tkalish, V.S. (Sukhumi)

TITLE:

On unsteady motion in non-ideal magnetic hydromechanics

PERIODICAL: Akademiya nauk SSSR. Izvestiya, Otdeleniye

tekhnicheskikh nauk, Mekhanika i mashinostroyeniye.

v₂5, 1961, 22-29

The fundamental equations are transformed by the TEXT: introduction of a curvilinear coordinate system, and the discussion limited to the case when the physical quantities and the Lame A system coefficients are independent of the third coordinate. of four scalar equations is obtained from which can be determined the stream functions, and the three components of the velocity and If the coordinate system is cartesian, two magnetic fields. non-linear equations are obtained for the stream functions, the remaining quantities are obtained by solving these equations and substituting in the other equations. A number of exact solutions are given for special cases which include steady motion, inviscid fluid and the absence of transverse components of the magnetic Acknowledgments are expressed to Ye.F. Tkalich for I.S. Gromek and S.A. Regirer are mentioned in the discussion. Card 1/2

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On unsteady motion in non-ideal

article for their contributions in this field. There are 27 references: 14 Sowiet-bloc and 13 non-Sowiet-bloc. The four most recent references to English language publications read as follows:

Ref.8: Williams W.E. J. Fluid. Mech., 1960, v.8, no.3; Ref.9: Shmoya J., Mishkin E. Phys. of Fluids, 1960, v.3, no.4; Ref.22: Long R.R. J. Fluid. Mech., 1960, v.7, no.1; Ref.23: Kapur J.N. Appl. Scient. Res., 1960, v.A9, no.2-3.

January 9, 1961 SUBMITTED:

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31627 s/207/61/000/006/002/025 A001/A101

26.1410

Tkalich, V.S., Tkalich, Ye.F. (Sukhumi) AUTHORS:

On non-steady screw motions in multi-component magnetic hydrodynamics TITLE:

Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 6, 1961, PERIODICAL:

The purpose of this work was investigation of non-steady screw motions in multi-component magnetic hydrodynamics. The authors introduce in the analysis the analogs of electromagnetic potentials (φ , rotB) and total momentum (P_k) of the unit of mass of k-type ions. A definition of "screw" motions is given as motions satisfying the condition:

rot $P_k = a_k (P_k - \frac{c e_k}{c m_k} \text{ rot } B)$ (1.4)

The present work is restricted to studying "homogeneous" screw motions in which $a_k = a_k(t)$ i.e., quantities are independent of space coordinates. Then the system of equations given is linear with respect to the functions sought for, which

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are magnetic and electric fields and velocities V_k . Solving the system the authors express magnetic field in terms of a single vector F depending on coordinates and time and electric field in terms of the gradient of an arbitrary harmonic function Ψ_o . If $a_k \neq 0$, momenta P_k and velocities V_k are expressed in terms of vector F. If $a_k = 0$, momentum P_k is a gradient, and such motions represent a generalization of potential motions in conventional hydrodynamics. Using harmonic-conjugated functions the authors solve the system of equations for the case of potential motions and find the vector fields of quantities E, H and V_k . The next case considered is steady motions; in case of the absence of any magnetic field, the equation of motion in the steady case is reduced to Bernoulli's equation. In the case of traveling waves, energy W_k depends on magnetic field H_o and derivatives of function F. Several extreme cases of function F presenting a special interest are analyzed. One or another form of this function is selected depending on the mutual orientation of the magnetic field vector and direction of propagation of traveling waves. For the case of waves traveling along the magnetic field H_o , which is applicable to plasma waveguides in which magnetic field is oriented along the waveguide axis, the form of F-function looks as follows:

$$F = F(q_1, q_2, \gamma_3 x_3 + \omega t)$$
 (5.1)

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As an example the authors consider propagation of axial-symmetrical waves in a cylindrical waveguide. Introducing dimensionless quantities for frequency, density and phase velocity the authors derive a dispersion equation and find the conditions under which its solution is a real quantity. There are 17 references,

SUBMITTED: February 16, 1961

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755930002-9

SALTANOV, N.V. (Sukhumi); TKALICH, V.S. (Sukhumi)

Riemann waves. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.6; (MIRA 14:11)

(Magnetohydrodynamics)

28776 S/057/61/031/010/009/015 B109/B102

10.2000 1.6712 AUTHORS:

Tkalich, V. S., and Saltanov, N. V.

TITLE:

Waves of finite amplitude in non-'deal magnetohydrodynamics

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 10, 1961, 1231-1235

TEXT: The present paper deals with computing the properties of a wave of finite amplitude, propagating along a magnetic field, in dependence on conductivity, viscosity, and other plasma parameters. If V and H are functions of time and of a space coordinate r, the relations $H_1 = H_0/r^n$, $V_1 = V_0/r^n$ can be derived from the known basic equations

$$\frac{\partial \mathbf{H}}{\partial t} = \operatorname{rot}(\mathbf{V} \times \mathbf{H} - \mathbf{v}_{m} \operatorname{rot} \mathbf{H}), \quad \operatorname{div} \mathbf{H} = 0, \quad \operatorname{div} \mathbf{V} = 0,$$

$$\frac{\partial \mathbf{V}}{\partial t} + \nabla \mathbf{W} = \mathbf{V} \times \operatorname{rot} \mathbf{V} - \frac{1}{4\pi\rho} \mathbf{H} \times \operatorname{rot} \mathbf{H} - \operatorname{v} \operatorname{rot} \mathbf{V},$$

$$\mathbf{W} = \frac{V^{2}}{2} + \frac{p}{\rho} + F.$$
(1)

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Waves of finite amplitude ...

(H_o denotes an arbitrary constant, $v_o = v_o(t)$ an arbitrary function of time, n = 0 (plane symmetry) or 1 (cylinder symmetry), subscript 1 denotes the components of the vectors \vec{V} and \vec{H}). The energy W of the unit mass of the fluid considered (without magnetic-field contribution) is assumed to be a linear function of the second and third space coordinates q_2 and q_3 : W = w(r,t) + Q_2q_2 + Q_3q_3 , where $Q_2(t)$, $Q_3(t)$ are arbitrary functions of time. In this case, the linear equations

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Waves of finite amplitude ...

hold for the second and third components of \overrightarrow{H} and \overrightarrow{V} . By adequate specializations the results obtained are identical with those obtained by S. A. Regirer (DAN SSSR, 127, 983, 1959; IFZh, 2, no. 8, 1959), Ya. S. Uflyand (ZhTF, XXX, 799, 1960) and I. B. Chekmarev (ZhTF, XXX, 338, 1960; ZhTF, XXX, 920, 1960). Upon introducing the vector potential

 $\frac{\left[\left(\frac{\partial}{\partial t} + v_0 \frac{\partial}{\partial r} - v_{\frac{\partial^2}{\partial r^2}}\right) \left(\frac{\partial}{\partial t} + v_0 \frac{\partial}{\partial r} - v_{\frac{\partial^2}{\partial r^2}}\right) - \frac{H_0^2}{4\pi\rho} \frac{\partial^2}{\partial r^2}\right] \mathbf{a} = \\
= H_0 \mathbf{e} \times \mathbf{Q} + \mathbf{C}' \quad \mathbf{Q} \equiv (Q_2, Q_3), \quad \mathbf{C} \equiv (C_2, C_3), \\
\mathbf{Special cases:} \quad (\mathbf{A}) \quad \mathbf{v}_0 = \mathbf{y} = \mathbf{y}_m = \mathbf{Q} = \mathbf{C} = \mathbf{0}. \quad \mathbf{Then,}$ (9)

$$A_{2} = \frac{h_{03}}{k} \sin(kr) \sin(\omega t + \varphi_{3}), A_{3} = -\frac{h_{02}}{k} \sin(kr) \sin(\omega t + \varphi_{2}),$$

$$\omega = \frac{skH_{0}}{\sqrt{4\pi_{2}}}, (s = \pm 1),$$
(11)

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Waves of finite amplitude ...

will be a solution of (9), where h $_{02}$, h $_{03}$, ϕ_2 , ϕ_3 are arbitrary constants. From the vector potential one obtains as usually \vec{H} , \vec{V} , and \vec{E} :

$$H_{\bullet} = h_{0\bullet} \cos(kr) \sin(\omega t + \varphi_{\bullet}),$$

$$V_{\bullet} = \frac{sh_{0\sigma}}{\sqrt{4\pi\rho}} \sin(kr) \cos(\omega t + \varphi_{\bullet}), \quad (e = 2, 3).$$
(12)

 $\vec{E} = -[\vec{V} \cdot \vec{H}]/c$. If there is a fluid layer of the thickness L between two layers of ideal conductance at r = 0 and r = L, the dispersion equation

 $ω = smπH / L \sqrt{4πQ}$ is obtained for this layer from the conditions of continuity, m being an integral number. (B) $\vec{Q} = \vec{C} = 0$: the solution of (9) is

$$v_{1} = -v_{0} + \frac{ik(y + v_{m})}{2} + \frac{sH_{0}}{\sqrt{4\pi\varrho'}} \sqrt{1 - \frac{\pi\varrho k^{2}(y - v_{m})^{2}}{H_{0}^{2}}}$$
(14),

where a_{oe} is an arbitrary complex constant, and k denotes the wave number Card $4/\varsigma$

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