MOLOTKOV, A.; VOROB'YEV, D.; BONDAREV, A.

Mechanized processing of waterfowl. Mias.ind.SSSR 25 no.1:9-11 '54. (MLRA 7:3)

1. Brattsevskaya ptitsefabrika. (Ducks) (Poultry, Dressing of)

L 31310-65 EWT(d)/EWT(m)/EWP(h)
ACCESSION NR: AP5008725

S/0209/65/000/003/0044/0049

AUTHOR: Kalotkov, A. (Major general of aviation, Meritorious test pilot of SSSR)

TITLE: Mastery plus automation

SOURCE: Aviatsiya i kosmonavtika, no. 3, 1965, 44-49

TOPIC TAGS: pilot training, instrument flying

ABSTRACT: This article discusses the pros and cons of some modern concepts of pilot training for instrument flying. The author reviews some of the shortcomings of instruments, stressing display standardization and improvement. He emphasizes some non-Soviet achievements in instrumentation and advocates the use of autopilots on helicopters and other short-range aircraft, as well as the forceful introduction of existing means for bringing the pilot's role closer to that of a monitor of automatic systems. The author concludes that the use of automation and program control in aircraft will not lessen the need for the careful and systematic training of pilots. [LB]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

NO REF SOV: 000 OTHER: 000 SUB CODE: AC, MS

Card 1/1 ATD PRESS: 3212

MOLOTKOV, A., general-mayor aviatsii, zasluzhennyy letchik-ispytatel' SSSR;
NIKITIN, A.kand. voyennykh nauk, general-polkovnik aviatsii, otstavka

Reviews and bibliography. Av. i kosm. 47 no.6:[illegible] (MIRA 18:5)

MOLOTKOV, A., general-mayor aviatsii, zasluzhennyy letchik-ispytatel' SSSR

The morning of a flight day. Av. i kosm. 48 no.8:6-11 Ag '65.
(MIRA 18:7)

STOYANOV, B.G.; MOLOTKOV, A.Yu. (Moskva)

Progress of the execution by medical periodicals of the resolutions of the June Plenary Session of the Central Committee of the CPSU concerning ideological problems. Sov. med. 28 no.4: 3-7 Ap '64. (MIRA 17:12)

MAKAROV, P.O., professor; MOLOTKOV, A.G., professor [deceased]

Diapasonometry of conductivity disturbances in injured human nerves exposed during operation and surgical treatment for some kinds of pain. Uch.zap.Len.un.no.138:267-274 '52. (MLRA 9:6)

1. Iz Laboratorii elektrofiziologii Leningradskogo filiala Vsesoyuznogo instituta eksperimental'noy meditsiny i Otdeleniya khirurgii perifericheskoy nervnoy sistemy Leningradskogo neyrokhirurgicheskogo instituta imeni professora A.L. Polenova.

(NERVES--SURGERY) (PAIN)

ACCESSION NR: AP4043736 S/0190/64/006/008/1426/1433

AUTHOR: Zelenov, Yu. V., Molotkov, A. P.

TITLE: Relaxation time spectra of rubbery lattice-type polymers

SOURCE: Vy*sokomolekulyarny°ye soyedineniya, v. 6, no. 8, 1964, 1426-1433

TOPIC TAGS: polymer, rubber, synthetic rubber, lattice polymer, relaxation time

ABSTRACT: In order to contribute to the limited available data on the behavior, in a mechanical or electrical field, of linear polymers undergoing spatial structural changes, the authors investigated the spectral characteristics (height, length and shape) and in different types of rubber and vulcanates with different lattice densities. The spectral characteristics were calculated from relaxation-time spectra and dynamic parameters found in the literature, and from formulas derived by the authors on the basis of the phenomenological theory of relaxation. The types of rubber and vulcanates investigated were the PIB, NK, SKN-18, SKN-26, SKN-30, SKN-40, SKB and SKB sulfurized rubber vulcanates, and the SKS-30, SKB, and SKN-40 radiation and thermal rubber vulcanates. The LgH vs Lgτ curves are presented, revealing a maximum region, a transition region and a plateau in the otherwise rather

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ACCESSION NR: AP4043780

nonuniform spectral patterns of all these polymers. The spectral height of the synthetic rubbers with lower molecular weights and a less pronounced spatial structure is lower than that of the high-molecular weight polyisobutylene rubber (PIB). Orig. art. has: 6 figures and 15 formulas.

ASSOCIATION: Moskovskiy gosudarstvenny*y pedagogicheskiy institut imeni V. I. Lenina (Moscow State Pedagogical Institute)

SUBMITTED: 18Sep63 SUB CODE: MT

NO REF SOV: 006 OTHER: 006

Card 2/2

ACC NR: AR6013661 SOURCE CODE: UR/0058/65/000/010/E019/E019

AUTHOR: Zelenev, Yu. V.; Molotkov, A. F.

TITLE: A physical basis for a macroscopic model of linear polymers

SOURCE: Ref. zh. Fizika, Abs. 10E136

REF SOURCE: Uch. zap. Mosk. obl. ped. in-ta, v. 147, 1964, 151-159

TOPIC TAGS: linear polymer, mathematic model, polymer physical chemistry

TRANSLATION: A model made up of a set of linear elastic and inelastic elements, including one nonlinear element (a nonlinear viscosity) is proposed to describe the mechanical behavior of polymer systems, especially linear polymers. A specific physical mechanism is associated with each element of the model. Equations for the model are derived and analyzed for the simplest cases of mechanical behavior (dynamic testing, stress, relaxation, creep). The relationships qualitatively reflect the behavior of linear polymers in vitrified highly-elastic and viscous-flow state, but only for polymers with sufficiently pliable chains. An electrical model was constructed analogous to the proposed mechanical model. A. Malkin.

SUB CODE: 07,11,20

Card 1/1

25(1)

SOV/125-59-1-13/15

AUTHOR: Chernega, D.F., Molotkov, B.A., Kisel', N.F., Trofimova, K.G.

TITLE: The Influence of Electric-Slag Heating of the Ingot Shrinkage Head by Graphitized Electrode on the Properties of Metal (Issledovaniye vliyaniya elektroshlakovogo obogreva pribyl'noy chasti slitka grafitizirovannym elektrodom na svoystva metalla)

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 1, 81-86 (USSR)

ABSTRACT: The macrostructure of a heated ingot has, in comparison with a non-heated ingot, the following features: shrinkage holes, better toughness of metal, less-marked low tapers and V-type segregation. The electric-slag heating of 3-ton ingots performed by direct current of positive polarity 1000 a and 50 v, results in no noticeable change in the chemical content of the metal. The concentration of sulphur in the heated ingot is by 0.002 to 0.005% less than in the unheated ingot. Under the influence of direct current, the content of hydrogen in the ingot body decreases. As a rule, the remaining hydrogen will shift

Card 1/2

25(1) SOV/125-59-1-13/15

The Influence of Electric-Slag Heating of the Ingot Shrinkage Pipe and by Graphitized Electrode on the Properties of Metal

to the negative pole. Electric-slag heating by means of direct current is most suitable for reducing hydrogen in the ingot and for improving the mechanical properties in the metal. There are three graphs, one sketch, one photo, one table, and ten Soviet references.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Politechnical Institute). Zhdanovskiy metallurgicheskiy zavod im. Il'icha (Zhdanov Metallurgical Plant imeni Il'ich)

SUBMITTED: July 7, 1958

Card 2/2

MOLOTKOV, D.

Feed Water Purification

Apparatus for purifying feed water. Hias.ind. 23, No. 4, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. UNCLASSIFIED.

KONCHAKOV, G.; MOLOTKOV, D.; YAKOVLEV, A.

Production line with membrane units for freezing meat in blocks. Mias.ind.SSSR 31 no.5:5-7 '60. (MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy promyshlennosti (for Konchakov). 2. Gor'kovskiy myasokombinat (for Yakovlev).

(Meat, Frozen)

MELNIKOV, G. A.

Use of forsterite brick in regenerator packing. V. F. Gerasimov, G. A. Molotkov, and A. L. Tuzhilkin. *Stal*, 1955, No. 9, pp. 830-31. Abstracted in *J. Iron Steel Inst. (London)*, 183 (2) 273 (1957). The use of forsterite brick in regenerators for open-hearth furnaces with chrome-magnesite roofs working at temperatures up to 1750° was investigated. Samples of the brick were periodically extracted during furnace maintenance, and the behavior of the brick in single and double-pass regenerators was compared. Different packing arrangements are considered, and it is concluded that heat exchange and resistance to dust action is improved. In general, forsterite brick in air regenerators enables both life and operating temperature to be increased, with corresponding improvements in furnace operation. Cf. *Chem. Abst.*, 1956, July, p. 11[illegible]. V.B.K.

Molotkov, G. A.

Use of forsterite brick for checkerwork of open-hearth furnace regenerators. V. F. Geev, G. A. Molotkov, and A. L. Turubiner. *Stal'* 15, 838-41(1955).—Possibility of working at 1700° permitted by all-basic furnaces places heavy demands on the checkerwork, which silica brick cannot well meet. Replacing first 15 top rows of brick in the air checkers with forsterite brick extends their life for the life of the roof (491 heats) and by replacing 2-3 top rows of them during roof rebuilding extends checker life to 850-100 heats. In gas checkers this brick is not satisfactory, because a 10-15 mm. thick layer on the outside is rapidly converted into a porous friable mass having poor heat cond.

J. D. Ge.

Use of forsterite brick in regeneration of open-hearth furnaces. [illegible] L. A. Monastyrev, A. I. Zimarenko and I. I. Lavrenko. Ogneupory, 20, No. 2, 62-64, 1955. Without replacing burner nozzles with forsterite, it is impossible to utilize completely the advantages of chrome-magnesite arches. Use of forsterite nozzles is one of the chief means of combating refinery progressive "aging" by increasing life to 1000 heats. Forsterite nozzles should be not less than 18 rows in air regenerator and 3 rows in gas regenerators. The temperature of such nozzles should be about 1400°C.

B.Z.K.

(4)

KIORESKO, B.V.; GUSEV, V.F.; TURUBINER, A.L.; MOLOTKOV, G.A.; CAVIN, A.I.

Automatization of open-hearth furnaces at the Zaporozhstal' Plant.
Stal' 16 no.8:689-697 Ag '56. (MLRA 9:10)

1.Zavod "Zaporozhstal'."
(Zaporozh'ye--Open-hearth furnaces) (Automatic control)

MOLOTKOV Gennadiy A.

LESKOV, Aleksandr Vasil'yevich; MARAKHOVSKIY, Il'ya Semenovich; MOLOTKOV, Gennadiy Aleksandrovich; TURUBINER, Anatoliy L'vovich; KOCHERGA, N., ~~redakshchiy redaktor;~~ ~~TARSAIDUK~~, P., tekhnicheskiy redaktor.

[Fundamentals of rapid steel smelting] Osnovy skorostnoi vyplavki stali. Kiev, Gos.izd-vo tekhn.lit-ry USSR, 1957. 249 p. (MIRA 10:11)
(Smelting)

Metallurgy

[illegible] Phase transformation in chrome-magnesite brick during service in the regenerator chambers of O.H. furnaces.—I. I. Yaroshevskaya and G. A. Medvedev (Ogneupory, 21, 211, 1957). In Russian. A petrographic examination in transmitted and reflected light was made on powder preparations and sections of chrome-magnesite bricks before service and after 507 hours in the top and 2nd courses of an air chamber, and in the top course of a gas checker. Max. temperature in the checkers was 1,450–1,500°. Phase transformations in the bricks lead to the formation of spinels of high refractoriness. In the top course of the air checkers, the bricks density and crack, as for 1st and subsequent courses there are hardly any signs of destruction. Destruction is more severe in gas checkers; the body disintegrates and structural strength is lost. Disintegration is caused by transformations of the oxides contained in the gas phase when the composition is constant, varying between oxidizing and reducing.

Chrome grains are the most vulnerable constituent of chrome-magnesite bricks. It is suggested that bricks containing $MgAl_2O_4$ instead of chromite should be used especially in air checkers. (2 figs., 1 table.)

SKLYAROV, P.I.; MOLOTKOV, G.A.

Technical and economic council of the Zaporozh'ye Economic Region. Met. i gornorud. prom. no.1:78-79 Ja-F '62. (MIRA 16:6)

1. Predsedatel' Zaporozhskogo soveta narodnogo khozyaystva (for Sklyarov). 2. Uchenyy sekretar' Tekhniko-ekonomicheskogo soveta Zaporozhskogo soveta narodnogo khozyaystva (for Molotkov).
(Zaporozh'ye Province—Industries)

MOLOTKOV, G.A.

Efficient way of laying out checkerwork. Stal' 22 no.7:617-618 Jl '62. (MIRA 15:7)

1. Zaporozhskiy sovnarkhoz.
(Open-hearth furnaces—Design and construction)

MOLOTKOV, G. P. (Docent, Candidate of Technical Sciences)

"Method of Noise Functions for Investigating a System Subjected to Random Signals"

report presented at the Scientific-technical Conference on Modern Gyroscope Technology Ministry of Higher and Secondary Special Education RSFSR, held at the Leningrad Institute of Precision Mechanics and Optics, 20-24 November 1962

(Izv. vysshikh uchebnykh zavekeniy. Priborostroyeniye, v. 6, no. 2, 1963)

S/024/62/000/005/002/012
E140/E155

16.8000

AUTHOR: Mozotkov, G.P. (Moscow)

TITLE: Analysis of linear functions by means of noise functions

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Energetika i avtomatika, no.5, 1962, 59-65

TEXT: If g is the weighting function of a linear system, the investigation of the stationary and non-stationary behaviour of the latter is facilitated by the "noise weighting functions"

$$K_6^H(t', t - z) = \int_0^{t-z} g(t', \lambda)\, g(t, \lambda + z)\, d\lambda, \qquad (2.3)$$

$$K_6^H(t, t' - z) = \int_0^{t'-z} g(t, \lambda)\, g(t', \lambda + z)\, d\lambda, \qquad (2.4)$$

$$K_6^H(t, t - z) = \int_0^{t-z} g(t, \lambda)\, g(t, \lambda + z)\, d\lambda \qquad (2.5)$$

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Analysis of linear functions by ... S/024/62/000/005/002/012
E140/E135

where, in the stationary case, the right-hand side becomes a function of λ only. The expressions obtained permit use of the two-sided Laplace transform. An example is given in which the optimal time constant of a servo-system is obtained with respect to the minimum sum of mean square and dynamic errors.

SUBMITTED: May 28, 1962

Card 2/2

ACCESSION NR: AT4038161 S/2690/63/005/006/0035/0041

AUTHOR: Molotkov, G. P.

TITLE: Determination of the variance of an output stationary signal by the noise-function method

SOURCE: AN LatSSR. Institut elektroniki i vy*chislitel'noy tekhniki. Trudy*, v. 5, 1963. Avtomatika i vy*chislitel'naya tekhnika (Automation and computer engineering), no. 6, 35-41

TOPIC TAGS: probability theory, random process, distribution statistics, Laplace transformation, optimal control

ABSTRACT: The problem is considered of determining the variance of a stationary output signal, defined by the formula

$$D_{\text{out}} = 2\int_0^\infty k_\delta(\lambda)\, k_{\text{in}}(\lambda)\, d\lambda,$$

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ACCESSION NR: AT4038161

with a noise function

$$k_\phi(\tau) = \int_0^\infty w(\lambda)\, w(\lambda + \tau)\, d\lambda$$

in such a way as to reduce the calculations to an operative procedure. Two very simple cases are first considered, in which the investigated system is either an inertial or an oscillating element. The material is then generalized to include systems of arbitrary order. In this case the noise function becomes

$$k_\phi(\tau) = \int_0^\infty w(\lambda)\, w(\lambda + \tau)\, d\lambda = \int_0^\infty \sum_1^n c_i e^{p_i \lambda} \sum_1^n c_i e^{p_i(\lambda+\tau)}\, d\lambda =$$

$$= -\left[c_1^2 e^{p_1\tau} \frac{1}{2p_1} + c_2^2 e^{p_2\tau} \frac{1}{2p_2} + \ldots + c_1 c_2 e^{p_1\tau} \frac{1}{p_1 + p_2} + \right.$$

$$\left. + c_1 c_2 e^{p_1\tau} \frac{1}{p_1 + p_2} + \ldots \right].$$

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ACCESSION NR: AT4038161

and the final form for the variance is

$$D_{вых} = -2\sum_{\substack{i=1 \\ j>i}}^{n} G(p_i; p_j) K_{вх}(p_i; p_j),$$

where $G(p_i; p_j)$ takes into account the dynamic properties of the investigated system and $K_{BX}(p_r; p_j)$ takes into account the properties of the input signal. The relation obtained is close in form to the formulas obtained on the basis of the two-dimensional Laplace transformation. Orig. art. has: 23 formulas.

ASSOCIATION: None

Card 3/4

ACCESSION NR: AT4038161

SUBMITTED: 00 DATE ACQ: 04Jun64 ENCL: 00

SUB CODE: MA, DP NR REF SOV: 003 OTHER: 000

Card 4/1

ACCESSION NR: AP4028979 S/0280/64/000/002/0087/0092

AUTHOR: Molotkov, G. P. (Moscow)

TITLE: Conversion of canonical-expansion-defined random signals by a discrete system

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 2, 1964, 87-92

TOPIC TAGS: cybernetics, automatic control

ABSTRACT: A method for determining dispersion at the output of an automatic-control system (see Enclosure 1) is suggested, based on the theory of canonical expansions, the z-conversion, and the method of polynomial equations. A digital corrector D(z) may be placed either in the forward or feedback loop. Both stationary and nonstationary signals are considered, and formulas for dispersion are developed for all four combinations. Orig. art. has: 2 figures and 42 formulas.

ASSOCIATION: none

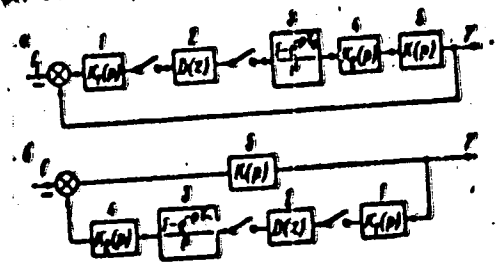
SUBMITTED: 20Apr63 DATE ACQ: 30Apr64 ENCL: 01

SUB CODE: DP, IE NO REF SOV: 005 OTHER: 001

Card 1/2

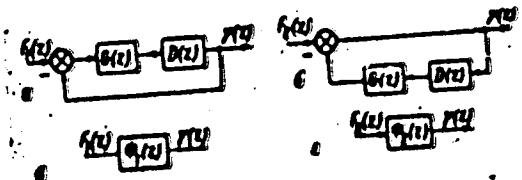
ENCLOSURE: 1

ACCESSION NR: AP4028979



A linear discrete automatic-control system. Many systems can be reduced to this form.

D(z) -- a digital corrector -- is placed either in the forward loop (top) or in the feedback loop (bottom diagram).



Logical schemes of the discrete automatic-control system.

G(z) is the z-transfer function of the invariable part of the system

D(z) is the z-transfer function of the digital corrector

$\Phi_a(z)$ and $\Phi_z(z)$ are z-transfer functions of closed loops

Card 2/2

MOLOTILOVA, G.P.

Fluorescence microscopy of the blood and bone marrow cells in leukemia. Probl. gemat. i perel. krovi 9 no.11:12-16 N '64. (MIRA 18:4)

1. Kafedra laboratornoy klinicheskoy diagnostiki (zav. -prof. Ye. [illegible]ost) TSentral'nogo instituta usovershenstvovaniya vrachey, Moskva.

L 27096-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1) BC

ACC NR: AT5028447 SOURCE CODE: UR/2690/65/009/000/0059/0069

40

AUTHOR: Molotkov, G. P.

B+1

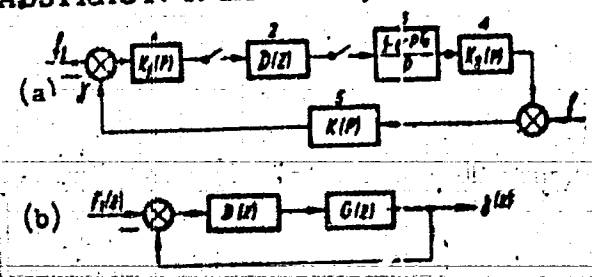
ORG: none

TITLE: Investigation of systems with digital correctors by the method of polynomial equations in the neighborhood of optimal solution

SOURCE: AN LatSSR. Institut elektroniki i vychislitel'noy tekhniki. Trudy. v. 9, 1965. Avtomatika i vychislitel'naya tekhnika, 59-69

TOPIC TAGS: digital system, optimal automatic control, polynomial equation, electronic signal

ABSTRACT: A discrete system (see figure) is considered which consists of sensor 1, corrector 2 with fixer 3 and linear part 3 and 4; corresponding transfer functions are shown in the figure. Continuous disturbances f and f_1 are applied. The initial block diagram (a) can be reduced to the form (b). The z-transfer function D(z) of the correcting loop is so synthesized (by the method of polynomial equations) that the output signal $y(t) = y$



Structural diagrams with f = 0

2

UDC: 519.25:62-501.135

Card 1/2

L 27096-66

ACC NR: AT5028447

meets specified performance requirements. Three examples illustrate the synthesizing techniques. Orig. art. has: 4 figures and 70 formulas.

SUB CODE: 13, 09 / SUBM DATE: none / ORIG REF: 007

Card 2/2

MOLOTKOV, A., general-mayor aviatsii, [illegible]

Skill plus automation. Av. i kosm. 47 no.[illegible] Mr '66. (MIRA 16:3)

SOV/54-58-3-6/19

AUTHOR: Molotkov, I. A.

TITLE: Non-Steady Propagation and Diffraction of Waves in a Two-Layer Medium With Cylindric Interface (Nestationarnoye rasprostraneniye i difraktsiya voln v dvusloynoy srede s tsilindricheskoy granitsey razdela)

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1958, Nr 3, pp 51-64 (USSR)

ABSTRACT: The present paper is a continuation of the work described in reference 2 and is based on the methods of the work of reference 1. The mathematical problem and especially the formulation of the point source for the case when the wave propagation is described by the wave equations $\Delta u - c_\nu^2 u_{tt} = 0$, $\nu = 1,2$ are contained in references 1 and 2. The character of the wave propagation in media with a cylindric interface is essentially dependent on the relations between the quantities c, c_1, a and 1. In the chosen problem the rapidly variable wave field was described by the Fourier (Fur'ye) series with the radial function

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SOV/54-58-3-6/12

Non-Steady Propagation and Diffraction of Waves in a Two-Layer Medium With Cylindric Interface

$$u_n(\varrho,\tau) = -\frac{R_1}{2\pi n a}\int_{x-i\infty}^{x+i\infty}\frac{I_n(-in\varrho_1 z)\,H_n^{(2)}(-in\varrho a z)}{\Delta_n(z)}\cdot\frac{e^{n\tau z}dz}{z^2}$$

The investigation and calculation of the functions (5) in the case of $n \geqslant n_0$ were carried out by means of asymptotical formulae (Ref 8) for cylindric functions and by the method of steepest descent. The rapidly variable part of the field turned out to be equal to the following expression:

$$u(\varrho,\varphi,\tau) = M_2(y_1)\sum_{n=n_0}^{\infty}\frac{\sin n(\eta_1-\varphi) - \cos n(\eta_1-\varphi)}{n^{3/2}} +$$

$$+ M_2(y_2)\sum_{n=n_0}^{\infty}\frac{\cos n(\eta_2-\varphi) + \sin n(\eta_2-\varphi)}{n^{3/2}} \qquad (21)$$

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SOV/54-58-3-6/19

Non-Steady Propagation and Diffraction of Waves in a Two-Layer Medium With Cylindric Interface

with $\tau_3 < \tau < \tau_4$ or

$$u(\varrho, \varphi, \tau) = M_2(y_2) \sum_{n=n_0}^{\infty} \frac{\cos n(\eta_2 - \varphi) + \sin n(\eta_2 - \varphi)}{n^{3/2}} \qquad (22)$$

with $\tau_4 < \tau < \tau_5$.

The formula

$$u(\varrho, \varphi, \tau) = A \sum_{n=n_0}^{\infty} \frac{e^{-x\sqrt[3]{n}(\tau - \tau_2)}}{n^{13/6}} \sin n\gamma \qquad (31)$$

indicates the exponential decrease of the diffraction effects with increasing difference $\tau - \tau_2$. This can be brought into connection with the known decrease in intensity of the refracted waves according to the penetration into the domain of the geometrical shadow. If the shadow boundary is approached from the illuminated domain and on the assumption that

Card 3/4

SOV/54-58-3-6/19

Non-Steady Propagation and Diffraction of Waves in a Two-Layer Medium With Cylindric Interface

$y = a^{-1} + \varepsilon$, $0 < \varepsilon \ll 1$ holds, the equation

$\varphi - \varphi_0 = \frac{\tau - \tau_2}{a} - \varepsilon \tau_2 + O(\varepsilon^{3/2})$ is obtained. Thus the surface

$$\varphi - \varphi_0 = \frac{\tau - \tau_2}{a} \qquad (32)$$

which corresponds with the Fermi principle serves as continuation of the wave front into the domain of the geometrical shadow. The author thanks G. I. Petrashen' for the supervision of the work. There are 3 figures and 9 references, 6 of which are Soviet.

SUBMITTED: December 25, 1957

Card 4/4

MOLOTKOV, I.A.

Nonsteady propagation and diffraction of waves in a two-layer medium with a cylindrical separation boundary [with summary in English]. Vest. LGU 13 no.16:51-64 '58. (MIRA 11:11)
(Wave mechanics)

16(1) SOV/49-58-19-11/16

AUTHOR: Molotkov, I.A.

TITLE: On the Theory of the Longitudinal Impact of Thin Bars (K teorii prodol'nogo udara tonkikh sterzhney)

PERIODICAL: Vestnik Leningradskogo universiteta, Seriya matematiki, mekhaniki i astronomii, 1958, Nr 19(4), pp 139 - 150(USSR)

ABSTRACT: The author wrote this paper in 1951 at the suggestion of G.I. Petrashen'. The author aims at a uniform representation of the treatment of different problems on the longitudinal impact of thin bars, and thereby at a solution as rigorous as possible. § 1. Central impact of two bodies -- Position of the problem. § 2. Impact of thin bars, 4 fundamental problems : A.) Impact of an absolutely rigid body on a fixed bar B.) Impact of the bar on an absolutely rigid half space C.) Impact of an absolutely rigid body on a free bar D.) Longitudinal impact of two free bars. § 3. Bar oscillations. § 4. Calculation of the pressure at the end of the bar. § 5. Solution of the problems B,C,D. § 6. Comparison with experimental data; correction of some error appearing in the literature. Most of the results are not new; however, the uniform representation is very well

Card 1/2

On the Theory of the Longitudinal Impact of Thin Bars SOV/43-58-19-11/16

done.
There are 11 references, 6 of which are Soviet, 2 English, 2 French, and 1 German.

SUBMITTED: March 31, 1957

Card 2/2

BULDYREV, V.S.; MOLOTKOV, I.A.

Nonstationary propagation of waves in homogeneous and isotropic media by cylindrical or spherical boundaries. Uch.zap. LGU no.246: 261-321 '58. (MIRA 12:2)

1. Leningradskiy gosudarstvennyy universitet.
(Wave motion, Theory of)

PETRASHEN', G.I.; MOLOTKOV, I.A.

Remarks on the paper "Asymptotic representation of cylindrical functions." Uch.zap. LGU no.246:347-352 '58. (MIRA 12:2)
(Functions)

Mo L. Kou, I. A.

16(1) SOV/2660

PHASE I BOOK EXPLOITATION

Tretyaya matematicheskiy s"yezd. 3rd, Moscow, 1956

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

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskiy institut.

Tech. Ed.: G.E. Shavrshenko; Editorial Board: A.L. Abrashkin, V.G. Boltyanskiy, A.M. Yaglom, B.V. Gnedenko, L.D. Kudryavtsev, S.M. Nikol'skiy (Resp. Ed.), A.G. Postnikov, Yu. V. Prokhorov, K.A. Rybnikov, P. L. Ul'yanov, V.A. Uspenskiy, A.G. Chatayev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

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

Bakarov, A.I. (Leningrad), V.S. Buldyrev (Leningrad), R.M. Gramilov (Leningrad), I.A. Ibragimov (Leningrad). Quantitative study of the nonstationary diffraction of waves from spherical and cylindrical regions 120

Fedorchuk, I.Ya. (Moscow). The turning to zero of renormalized charges in theories with point interaction 120

Ramer, Yu.P. (Novosibirsk). Five-dimensional optics 120

Zhuravlev, S.A. (Moscow). On the theory of the reflection of electric waves from a curvilinear boundary 122

Stanyukovich, K.P. (Moscow). Relativistic mechanics and the electrodynamics of continuous media 122

Shadchnev, L.Sh. (Stalinabad). Singular functions of quantum field theory in n-dimensional pseudo-Euclidean space 123

Card 23/34

85954

S/020/60/134/005/030/C35/XX
B019/B070

24.1200

AUTHORS: Buldyrev, V. S. and Molotkov, I. A.

TITLE: An Investigation of the Exact Solutions of Unsteady Diffraction Problems in the Vicinity of Sliding Fronts

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 5, pp. 1051 - 1054

TEXT: The properties of an acoustic wave field u(P, t) (P is a point of space, t the time) in the region of a geometric shadow has been studied by a selection of the nonanalytical parts, the shadow being produced in a two-component medium with cylindrical or spherical boundary. The sliding front consists of all points P for which the integral $\tau = \int_Q^P c^{-1} ds = 1$ holds. In the vicinity of the sliding front, a solution of the unsteady wave field is then given as $u(P,t) = \mathrm{Re}\left[\sum_{s=1}^{\infty} \sum_{n=m}^{\infty} T_s\left[i\nu(n)\right] + f(P, t)\right]$ (2). The asymptotic representation of $T_s(i\nu)$ for large $|\nu|$ in

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An Investigation of the Exact Solutions of Unsteady Diffraction Problems in the Vicinity of Sliding Fronts S/020/60/134/005/C30/C35/XX B019/B070

the sector $|\arg\nu| < \pi/2$ is discussed, and the separation of the nonanalytic part of the series $\mathrm{Re}\sum_{n=m}^{\infty} T_s[i\nu(n)]$ (8) is considered.

$$u_s(P, t) = \frac{3}{2}\sum_{k=0}^{N} a_k^{(s)}\left[\varkappa_s(\gamma+\delta)\right]^{3\beta-3+k} W_{3\beta-2+k}(p_s) + e^{-2p_s/3}O(p_s^{5/2-3\beta-N}) \quad (12)$$

is obtained. Equation (12) describes the behavior of $u_s(P, t)$ in the vicinity of $\gamma=0$, and permits an approximate calculation to be made of $u(P, t)$ in the vicinity of the sliding front. In the last section, some formulas for the coefficients $a_k^{(s)}$ for various diffraction problems are given. G. I. Petrashen and V. M. Babich are thanked for the discussion of the results. There are 8 references: 4 Soviet and 4 US.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova (Leningrad State University imeni A. A. Zhdanov)

PRESENTED: May 27, 1960, by V. I. Smirnov, Academician

SUBMITTED: April 21, 1960

Card 2/2

MOLOTKOV, I. A.

Cand Phys-Math Sci - (diss) "Study of point solutions of non-staticnary problems of diffraction in the neighborhood of wave fronts and sliding [soskal'zyvaniye] fronts." Leningrad, 1961. 7 pp; (Academy of Sciences USSR, Physics-Technology Inst); 180 copies; price not given; bibliography at end of text (13 entries); (KL, 6-61 sup, 194)

S/169/62/000/009/007/120
D228/D307

24,1200,

AUTHOR: Molotkov, I. A.

TITLE: Asymptotic behavior of an unstationary wave field around a sliding front in the convex cylinder diffraction problem

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 14, abstract 9A94 (In collection: Vopr. dinamich. teorii rasprostr. seysmich. voln, 5, L., Leningr. un-t, 1961, 206-209)

TEXT: A plane sound wave falls in the form of a step on a rigid cylinder, bounded by a smooth convex surface, perpendicular to its generatrix. The nature of the diffracted waves in the shadow zone, around so-called "sliding fronts", is investigated. The rays perpendicular to the sliding fronts represent the cylinder's semitangents, filling the shadow zone. Each point in the shadow zone can be characterized by a distance r from the cylinder along the ray, passing through this point, and by a length δ of an arc on the cylinder's

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surface from the shadow zone's boundary to the point of contact of the ray under consideration. In order to study the peculiarities of the wave field around the fronts, it is sufficient to know the short-wave asymptotic of the analogous problem for set harmonic vibrations (V. S. Buldyrev, Dokl. AN SSSR, 129, no. 2, 1959, 291-294). For the problem under consideration the short-wave asymptotic in the shadow-zone is known (V. I. Ivanov, Nauchn. dokl. vysah. sholy, fiz-mat. nauki, no. 6, 1958, 192-196). This allowed an expression to be derived for the near-frontal region in the shadow zone. The nature of the wave arrivals is described by the equation:

$$A\sqrt{\gamma}\ \exp\left\{-\frac{b}{\sqrt{\gamma}}\right\}\varepsilon(\gamma)$$

where A and b are the magnitudes, depending on the position of the observation point; γ is the distance along the arc from the observation point to the sliding front; $\varepsilon(\gamma)$ is the Heaviside function, which equals zero before the front and unity behind it. When the

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distance from the front is fixed, the field diminishes with the growth of r according to the usual laws for the divergence of energy in ray tubes; it abates exponentially if δ increases (the exponent is proportional to the integral from the radius of the cylinder's curvature on the arc δ, taken to the power 3/2). [Abstracter's note: Complete translation.]

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S/020/61/140/003/007/020
B104/B125

9.9000 (1103)

AUTHOR: Molotkov, I. A.

TITLE: Unsteady propagation of waves in an inhomogeneous medium in the formation of a geometrical shadow

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 3, 1961, 557-559

TEXT: A method of separating the non-analytical part was applied to study the properties of an unsteady wave field in the region of a geometrical shadow within an inhomogeneous semi-space. Waves of a variable velocity $n^{-1}(z)$ are assumed to propagate through a semi-space $z > 0$, proceeding from a point source in $z = r = 0$ (cylindrical coordinates). These waves are taken to be regular and monotonic in $z > 0$. The intensity $u(r,z,t)$ of the point source is described by a Heaviside function $\varepsilon(t)$. $u(r,z,t)$ is the exact solution

$$u(r,z,t) = \frac{1}{4\pi t}\int_0^\infty J_0(kr)\,dk \int_L \frac{G(z,k,s)}{G(0,k,s)}\frac{e^{st}}{s}\,ds. \qquad (2)$$

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of the problem

$$u_{rr} + \frac{1}{r} u_r + u_{zz} - n^2(z) u_{tt} = 0, \qquad (1)$$
$$u|_{t=0} = u_t|_{t=0} = 0, \quad u|_{z=0} = r^{-1}\delta(\cdot)\varepsilon(\cdot).$$

Here, $J_0(z)$ is the Bessel function, and λ is the Mellin contour. $G(\lambda,k,s)$ is the solution of the equation

$$\frac{d^2V}{dz^2} = k^2\left\{1 + s^2n^2(z)\right\} V = 0$$

which, in the region $\mathrm{Re}(ks) \geqslant 0$, $|s - in^{-1}(z)| \gg |k|^{-2/3}$ is asymptotically represented by

$$G(s, k, s) = \qquad (3)$$
$$= \sqrt{\frac{2}{k\pi}}\left[1 + s^2n^2(z)\right]^{-1/4} \exp\left[-k\int\sqrt{1 + s^2n^2(z)}\,dz\right]\left[1 + O\left(\frac{1}{ks}\right)\right].$$

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Unsteady propagation of waves...

If $n'(z) > 0$ in $z > 0$, an infinite zone of a geometrical shadow will appear in the semi-space

$$\delta \equiv r - n_0 \int_0^z \frac{dz}{\sqrt{n^2(z) - n_0^2}} > 0, \quad n_0 \equiv n(0). \tag{4}$$

Slide fronts propagate along this zone in conformity with

$$\gamma \equiv \frac{t}{n_0} - \delta - \frac{1}{n_0} \int_0^z \frac{n^2(z)}{\sqrt{n^2(z) - n_0^2}} dz = 0 \tag{5}$$

The properties of $G(z,k,s)$ are thoroughly studied for an $n(z)$ that is regular in $z > 0$ and rises monotonically. The asymptotic relation

$$u(r, z, t) = \sqrt{\frac{n_0}{r}} \left(\frac{n_0'}{n_0}\right)^{1/6} \frac{(6\gamma)^{1/6}}{(\varkappa_1\delta)^{1/6}} \frac{|\mathrm{Ai}'(2^{1/3}\varkappa_1 e^{i\pi/3})|^{-1}}{\sqrt{n^2(z) - n_0^2}} \times \tag{7}$$

$$\times \exp\left[-\frac{2}{3}\frac{(\varkappa_1\delta)^{3/2}}{\sqrt{3\gamma}}\right] [1 + O(\sqrt{\gamma})] \varepsilon(\gamma).$$

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Unsteady propagation of waves...

is obtained for the field in the environment of the slide front. This relation is invalid at the boundary of the semi-space ($z \to 0$) and also when approaching the boundary beam ($\delta \to 0$). There are 7 references: 6 Soviet and 1 non-Soviet. The reference to English-language publication reads as follows: R. Langer, Phys. Rev., 51, no. 8, 669 (1937).

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

PRESENTED: May 5, 1961, by V. I. Smirnov, Academician

SUBMITTED: April 12, 1961

Card 4/4

MOLOTKOV, I.A.

Study of the transient propagation of waves in a nonhomogeneous medium during the formation of the area of a geometric umbra. Vop. din. teor. raspr. seism. voln no.6:92-102 '62. (MIRA 16:7)
(Seismic waves) (Shades and shadows)

ACC NR: AP6021404 (N) SOURCE CODE: UR/0387/66/000/006/0034/0038

AUTHOR: Babich, V. M.; Molotkov, I. A.

ORG: Academy of Sciences SSSR, Mathematics Institute im. V. A. Steklov (Akademiya nauk SSSR, Matemeticheskiy institut)

TITLE: Propagation of Love waves in an elastic half-space which is inhomogeneous in two coordinates

SOURCE: AN SSSR. Izvestiya. Fizika zemli, no. 6, 1966, 34-38

TOPIC TAGS: elastic wave, wave propagation, seismic wave

ABSTRACT: The dependence of Love waves on the coordinates and on the frequency is determined by the parabolic-equation method, first for an elastic half-space ($z \geq 0$) with Lame parameters λ, μ and density ρ that depend only on z, and then modifying the solution for a dependence on both z and x. The solution is obtained in the form

$$u(x, z, t) = \exp[-i\omega(t - xv_\phi^{-1})]U(z, \omega)\mathbf{j},$$

where j is a unit vector in the y direction, so that the equation for U turns out to be

$$\frac{d}{dz}\left[\mu(z)\frac{dU}{dz}\right] + \omega^2\left[\rho(z) - \frac{\mu(z)}{v_\phi^2}\right]U = 0. \qquad (4)$$

subject to the boundary condition that the derivation of U with respect to z vanishes at $z = 0$. In addition it is assumed that near the boundary of the half-space

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ACC NR: AP6021404

$$\frac{\partial b(x,z)}{\partial z} > 0, \quad b = \sqrt{\frac{\mu}{\rho}}. \tag{1}$$

Since the phase velocity is always larger than the minimum of the transverse velocity b(z), the problem is restricted to the determination of the slowest Love waves among the waves for which

$$v_\phi > b(0), \quad \frac{v_\phi}{b(0)} - 1 \ll 1. \tag{6}$$

It is shown that as the frequency becomes infinite, the solution of (4) can be expressed in terms of Airy functions. The final solution is obtained in the form

$$u_\epsilon(x,z,t) = \exp\{-i\omega[t - xb^{-1}(0)]\} U_\epsilon(x,z,\omega)\}, \tag{12}$$

$$U_\epsilon(x,z,\omega) = c_\epsilon \exp\left(-\frac{i}{2}\omega^{1/3}\beta_\epsilon^{1/3}\xi_\epsilon x b(0)\right) v[\omega^{1/3}\beta_\epsilon^{1/3}(z - h_\epsilon)][1 + O(\omega^{1/3})],$$

in the case of inhomogeneity in the z direction only, and

$$u_\epsilon(x,z,t) = \exp\{-i\omega[t - \tau(x)]\} U_\epsilon(x,z,\omega)\}, \tag{23}$$

$$U_\epsilon(x,z,\omega) = c_\epsilon \frac{n_x^{1/6}}{\mu^{1/3} n^{1/6}} \exp\left[-\frac{i\omega^{1/3}\xi_\epsilon}{2^{1/6}} \int_0^x \frac{|n_x(x,0)|^{1/6}}{n^{1/3}(x,0)} dx\right] \times$$

$$\times v[\omega^{1/3}\alpha^{1/3}(x)(z - h_\epsilon(x))][1 + O(\omega^{-1/3})], \tag{24}$$

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ACC NR: AP6021404

in the case of inhomogeneity in both the x and z directions. The expression obtained for the phase velocity of the s-th Love wave is

$$v_\varphi^{(s)}(x) = \frac{1}{\frac{d}{dx}\left[\tau(x) - \omega^{-1/3}\frac{\xi_s}{2^{1/3}}\int_0 \frac{|n_z(x,0)|^{2/3}}{n^{1/3}(x,0)}dx + O(\omega^{-4/3})\right]} =$$

$$= b(x,0) + \omega^{-1/3}\frac{\xi_s}{2^{1/3}}\frac{|n_z(x,0)|^{2/3}}{n^{1/3}(x,0)} + O(\omega^{-4/3}). \qquad (26)$$

and for the depth of penetration

$$h_s(x) = \omega^{-1/3}\alpha^{-1/3}(x)\xi_s, \qquad (25)$$

Orig. art. has: 26 formulas.

SUB CODE: 20, 08/ SUBM DATE: 20Jul65/ ORIG REF: 004

Card 3/3

ACC NR: AT7006689 SOURCE CODE: UR/2517/66/092/000/0165/0181

AUTHORS: Molotkov, I. A.; Mukhina, I. V.

ORG: none

TITLE: The nonstationary propagation of waves in a heterogeneous half-space with a minimum propagation velocity

SOURCE: AN SSSR. Matematicheskiy institut. Trudy, v. 92, 1966. Krayevyye zadachi matematicheskoy fiziki (Boundary value problems of mathematical physics), no. 4, 165-181

TOPIC TAGS: wave propagation, boundary value problem, integral calculus, Euler equation, asymptotic property, wave front

ABSTRACT: The propagation of nonstationary waves in a stratified medium with one maximum and one discontinuity of the refractive index is examined. The heterogeneous half space $z \geq 0$ in the Cartesian coordinate system x, y, z has a refractive index $n(z)$ that is independent of x and t. The function $n(z)$ is defined and positive for $0 \leq z < \infty$, analytic for $0 \leq z < z_2$, continuous for $z > z_2$, and permits a discontinuity of the first kind at $z = z_2$. It has a unique maximum at $z = z_1$, and, when $z \to \infty$, it approaches the constant value $n_\infty \leq n(z_2 + 0)$, so that

$$n(z) = n_\infty + O(z^{-2}).$$

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ACC NR: AT7006689

The following two-dimensional problem of nonstationary-wave propagation $u(x, y, z)$ is examined:

$$u_{xx}+u_{zz}-n^2(z)u_{tt}=0,$$

$$u(x, 0, t)=\delta(x)\delta(t),\quad u(x, z, 0)=u_t(x, z, 0)=0,$$

$$u(x, z_2-0, t)=u(x, z_2+0, t),\quad u_z(x, z_2-0, t)=u_z(x, z_2+0, t),$$

where $\delta(r)$ is a Dirac function. This problem is solved by the method of contour integrals. The asymptotic form of the functions $E(1, 2)(z, k, s)$ and $G(z, k, s)$ as $k \to \infty$ is also examined, and the asymptotic properties of the functions for a parabolic cylinder and their zeros are considered. The solution

$$u(x, z, t)=\frac{1}{2\pi^2 i}\int_0^\infty k\cos kx\,dk\int_\lambda V(z, k, s)e^{st}ds,$$

$$V(z, k, s)=\Delta_0^{-1}([G, E^{(2)}]_{z_2}E^{(1)}(z, k, s)+[E^{(1)}, G]_{z_2}\cdot E^{(2)}(z, k, s)),\quad (0\leqslant z\leqslant z_2),$$

$$V(z, k, s)=\Delta_0^{-1}[E^{(1)}, E^{(2)}]G(z, k, s),\quad (z_2\leqslant z<\infty),$$

$$\Delta_0=[G, E^{(2)}]_{z_2}E^{(1)}(0, k, s)+[E^{(1)}, G]_{z_2}E^{(2)}(0, k, s),$$

is divided into the terms that correspond to the individual waves. Orig. art. has: 72 formulas, 8 graphs, and 1 table.

SUB CODE: 12 20/ SUBM DATE: none/ ORIG REF: 011/ OTH REF: 002

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KOROL'KOV, S. (Leningrad); MOLOTKOV, L. (Leningrad)

The laboring class has helped. Sov. profsoiuzy 17 no.13:9-11 Jl '61. (MIRA 14:7)

(Leningrad--Electric industry workers)
(Rozhdestveno (Leningrad Province))--Collective farms)

MOLOTKOV, L.

Role of creative brigades in reducing time-consuming production. Sots.trud 7 no.7:129-133 Jl '62. (MIRA 15:8)

1. Redaktor gazety "Elektrosila".
(Leningrad—Turbines—Technological innovations)

MOLOTKOV, L. A. and PETRASHOV, G. I.

"On Certain Dynamic Properties of Thin Elastic Layers."

paper presented at the 4th All-Union Conf. on Acoustics, Moscow, 26 May - 6 Jun 58.

SOV/54-58-4-13/18

10(2)

AUTHORS: Petrashen', G. I., Molotkov, L. A.

TITLE: Several Problems of the Dynamic Elasticity Theory in the Case of a Medium Containing Thin Layers (O nekotorykh problemakh dinamicheskoy teorii upругosti v sluchaye sred, soderzhashchikh tonkiye sloi)

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1958, Nr 4, pp 137-156 (USSR)

ABSTRACT: This paper is a summary of a report held by the authors on the occasion of the 4. Vsesoyuznaya akusticheskaya konferentsiya (All-Union Conference of Acoustics) in Moscow in June 1958. It is the aim of the present paper to give a short survey on the various directions of research of the problems mentioned in the title as well as to interpret the results dealing with the lowest-frequency oscillations contained in thin layers. These problems are closely related with the engineering-theory of oscillation of thin plates and the problems of dynamic modelling on "plane models". Among the methods dealing with the investigation of wave fields Fourier's method is emphasized, the method of contour integrals, which has much in common with the method men-

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Several Problems of the Dynamic Elasticity Theory in the Case of a Medium Containing Thin Layers

tioned first, with the exception that the latter also takes the non-stationary problem into account. For their investigations the authors used always the second method. Among the bases for the problems of the dynamic elasticity theory as given in publications especially that by Epstein (Ref 6) is pointed out; an own paragraph is devoted to its explanation. The authors themselves prove the engineering theory rigorously. In this connection to begin with the problems are solved for the simpler systems, as in our case for the external surfaces: $R_1 = R_2 = \infty$. The results obtained are compared with the results of reference 6 for this special case, then the applicability of the results of reference 6 is investigated under special consideration of this case and then the conditions of applicability are extrapolated to a broader class of external surfaces. Thus, it is possible to subject the findings of the engineering theory of oscillation of thin plates to a thorough investigation and to demonstrate the field of applicability. Besides, it was also proved that the laws of wave propagation can under certain conditions be applied

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Several Problems of the Dynamic Elasticity Theory in the Case of a Medium Containing Thin Layers

in plane problems of dynamic electricity theory to models consisting of plates with a uniform thickness. There are 8 references, 6 of which are Soviet.

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MOLOTKOV, L.A.

Some properties of cylindrical functions and their zeros. Vop. din. teor. raspr. seism. volna no.5:233-239 '61. (MIRA 14:11)
(Bessel's functions)

S/044/62/000/007/038/100
C111/C222

24.4300

AUTHOR: Molotkov, L.A.

TITLE: On the propagation of elastic waves in media containing thin plane parallel layers

PERIODICAL: Referativnyy zhurnal, Matematika, no. 7, 1962, 66, abstract 7B318. ("Vopr. dinamich. teorii rasprostr. seysmich. voln." S.L., Leningr. un-t, 1961, 240-280)

TEXT: The paper is devoted to the exhibition of the solutions of most generally formulated instationary problems for laminated media. It is assumed that besides of thick plane parallel layers there can exist one or more thin layers. The problem is formulated for axialsymmetric influences and for influences parallel to the boundaries. It is assumed that besides of elastic solid layers, also liquid layers occur. At first the solution is constructed in an integral form with the aid of incomplete separation of variables for an elastic layer enclosed between two elastic half spaces, and then for a system of thin layers between two half spaces. The determination of the interference perturbations in

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On the propagation of elastic waves ... S/044/62/000/007/038/100
C111/C222

an n - layer system is carried out by summation over the single waves. Solutions for elasto-liquid systems bounded by a free surface are constructed. Interference perturbations are determined for the case of a rotational influence and of a force parallel with the separating boundaries.

[Abstracter's note : Complete translation.]

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24.4200

S/044/62/000/003/043/092
C111/C444

AUTHOR: Molotkov, L. A.

TITLE: On the propagation of oscillations of low frequency in liquid semi-spaces which are separated by an elastic thin layer

PERIODICAL: Referativnyy zhurnal, Matematika, no. 3, 1962, 75, abstract 3B318. ("Vopr. dinamich. Teorii rasprostr. seysmich. voln.", S.L., Leningr. un-t, 1961, 281-302)

TEXT: The solution of the problem set-up is constructed in the case of concentrated influences according to the method of incomplete separation of variables; the solution has the shape of double integrals (Riemann-Mellin and Fourier-Bessel). In detail investigated are the roots of the frequency equation (they are the poles of the functions, standing under the integrals, for symmetric and insymmetric oscillations). The ideas for the estimation of the wave fields by deformation of the contour $\sigma - i\infty$, $\sigma + i\infty$ into the stationary contour λ are described. There the wave field is naturally expressed by the sum of the fields which correspond to the residues in the poles and the integral with respect to λ. This integral describes the reflected and refracted waves

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in semispaces and in the layer; the residuum in the origin gives the static part of the field; the residues at the other poles describe the propagation of the eigenoscillations of the layer (the eigenoscillations are bending oscillations in case of an antisymmetric disturbance) and the head waves of the thin layer. In analogy the solution of the problem on the oscillations of a plate between two liquid semispaces is investigated by aid of engineer equations. The solutions are compared in the case of oscillations of low frequency. Conditions are given under which the engineer equations for plates may substitute the exact equations for a layer. The main results of the paper are well corresponding with the experiment.

[Abstracter's note: Complete translation.]

MOLOTKOV, L.A.

Engineering equations of the vibration of plates with a layered structure. Vop. din. teor. raspr. seism. voln no.5:303-313 '61. (MIRA 14:11)

(Elastic plates and shells)

GORYUNOV, I.I.; MOLOTKOV, L.A.

Relationship between the reservoir properties and the electrical resistivity of fractured rocks. Trudy VNIGRI no. 165:237-247 '61. (MIRA 14:8)

(Oil sands--Electric properties)
(Joints (Geology))

KRAUKLIS, P.V.; MOLOTKOV, L.A.

Propagation of SH waves in an elastic medium having a thin layer. Pt. 1. Vop. din. teor. raspr. seism. voln no.6:103-112 '62. (MIRA 16:7)

(Seismic waves)

MOLOTKOV, L.A.; KRAUKLIS, P.V.

Formation of low-frequency head waves in thin layers. Izv. AN SSSR. Ser. geofiz. no.6:946-947 Je '63. (MIRA 16:7)

1. Matematicheskiy institut imeni V.A.Steklova AN SSSR, leningradskoye otdeleniye.

(Seismic waves)

KRAUKLIS, P.V.; MOLOTKOV, L.A. (Leningrad)

Low-frequency vibrations of a plate lying on an elastic half-space. Prikl. mat. i mekh. 27 no.5:947-951 S-O '63. (MIRA 16:10)

MOLOTKOV, L.A.; PETRASHEN', G.I. (Leningrad)

"On the methods of deriving engineering equations for vibrations of thin plates, bars and certain shells".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

BOYARSKIY, M.N.; KLEVYADO, A.N., prepodavatel' istorii partii; LANDO, M.N.; MOLOTKOV, L.D.; POPOVA, I.V., istorik; TKACHENKO, P.M.; POCHEBUT, G.A., kand.istor.nauk, starshiy nauchnyy sotrudnik, nauchnyy red.; ROZANOV, M.D., red.; TIKHONOVA, I.M., tekhn.red.

[Resources for electrification; brief description of the history of the Leningrad "Electric power" Plant named in honor of S.M. Kirov] Arsenal elektrifikatsii; kratkii ocherk istorii leningradskogo zavoda "Elektrosila" imeni S.M.Kirova. Leningrad, Lenizdat, 1960. 267 p. (MIRA 13:7)

1. Zamestitel' direktora zavoda "Elektrosila" (for Boyarskiy). 2. Nachal'nik byuro tekhnicheskoy informatsii zavoda "Elektrosila" (for Lando). 3. Redaktor zavodskoy gazety "Elektrosila" leningradskogo zavoda "Elektrosila" (for Molotkov). 4. Tekhnicheskiy muzey zavoda "Elektrosila" (for Popova). 5. Zaveduyushchiy kabinetom politicheskogo prosveshcheniya partkoma zavoda "Elektrosila" (for Tkachenko). 6. Institut istorii partii pri Leningradskom obkome Kommunisticheskoy partii Sovetskogo Soyuza (for Pochebut).
(Leningrad--Electric power plants)

ACC NR: AT6032728 SOURCE CODE: UR/0000/66/000/000/0024/0028

AUTHOR: Krauklis, P. V.; Molotkov, L. A.; Petrashen', G. I.

ORG: none

TITLE Certain wave processes in media containing thin layers

SOURCE: AN SSSR. Institut fiziki Zemli. Geoakustika; ispol'zovaniye zvuka i ul'tra-zvuka v seysmologii, seysmorazvedke i gornom dele (Geoacoustics; the use of sound and ultrasound in seismology, seismic prospecting, and mining). Moscow, Izd-vo Nauka, 1966, 24-28

TOPIC TAGS: seismic modeling, seismic wave, wave propagation, head wave

ABSTRACT: Theoretical investigations of wave fields in seismic models containing a thin layer are briefly reviewed. The following are considered: free elastic model, elastic medium in a liquid, elastic medium in rigid or sliding contact with another elastic medium, and a liquid layer between elastic media. The effect of parameters of surrounding media and the type of boundary conditions on propagation of low-frequency waves along the layer is considered. The properties of head waves propagated along an elastic layer placed in a liquid are summarized. Orig. art. has: 6 formulas and 2 figures.

SUB CODE: 08/ SUBM DATE: 28Mar66/ ORIG REF: 008/ OTH REF: 001

Card 1/1

MALYY, V.I., inzhener; MOLOTKOV, L.F., dotsent, kandidat tekhnicheskikh nauk

Improving the quality of cast iron rolls for shape rolling. Stal' 15 no.6:558-560 Je '55. (MLRA 8:8)

1. Ministerstvo chernoy metallurgii SSSR i Dneprodzerzhinskiy metallurgicheskiy institut. (Rolls (Iron mills))

MOLOTKOV, L.F., kandidat tekhnicheskikh nauk, dotsent; TSUKANOV, G.M.; BORTUNOV, Ye.M., inzhener.

The operating conditions of vertical rolls in universal mills. (MIRA 9:1)
Stal' 15 no.10:914-915 O '55.

1.Dneprodzerzhinskiy metallurgicheskiy institut i zavod imeni Dzerzhinskogo.
(Rolling mills)

MOLOTKOV, L.F., kandidat tekhnicheskikh nauk, dotsent; YUFEROV, V.M., kandidat tekhnicheskikh nauk, dotsent; TSUKANOV, G.N., inzhener; CHERNOVICH, Ye.M., inzhener; BORTUNOV, Ye.M., inzhener; SOROCHAN, N.G.

Improving the mechanical properties of structural steel for bridges. Stal' 15 no.10:930-937 O '55. (MLRA 9:1)

1. Dnepredzerzhinskiy metallurgicheskiy institut i zavod imeni Dzerzhinskogo. (Steel, Structural)

133-58-4-17/40

AUTHORS: Tsukanov, E.F., Ivanchenko F. K. and Molotkov, L.F., Docents, Pavlenko, B. A., Nikolayev, V. A., Krizhanovskiy, A. L. and Kokhno, P. Ya., Engineers

TITLE: Investigation of Loads During Rolling Plates (Issledovaniye davleniy pri prokatke listov)

PERIODICAL: Stal', 1958, Nr 4, pp 332-334 (USSR)

ABSTRACT: The measurements of rolling loads endured by rolls in a medium plate mill during rolling plates were carried out. The mill consisted of two stands in line: three rolls (LAUT) for rolling plates and two-rolls for riffling plates. In the three roll mill 670 x 517 x 670 mm for rolling smooth plates cast iron rolls with a chilled surface are used and for riffled plates, forged steel rolls (50 KhG). The length of rolls 1800 mm. In the two roll stand in which only one pass is made for riffling, cast iron rolls of 650 mm diameter with chilled surface are used. The mill is powered with a 900 h.p. motor. Riffled plate was rolled in 10-12 passes and smooth plates in 11-13 passes. Measurements of loads on rolls were carried out during rolling plates (dimensions in Table 1) and the most characteristic results are given in Table 2. Experimental results are compared in Figs.1-3.

Card 1/2

Investigation of Loads During Rolling Plates 133-58-4-17/40

Conclusions: During intensive reductions in cast iron chilled rolls stresses are formed considerably exceeding the permissible ones. Specific load on rolls 5-6 kg/mm^2 at the beginning of rolling increases at the end of rolling to 28-30 kg/mm^2. During rolling on steel rolls the specific load is higher than on rolling on cast iron rolls (due to an increase in friction in the former case). During rolling comparatively thin products ($H < 33$ mm) the maximum specific pressure was observed at reductions of 34-40%. With further increase in reduction the specific load decreases.
There are 2 tables, 3 figures and 3 references, all of which are Soviet.

ASSOCIATIONS: Dnepodzerzhinskiy vecherniy metallurgicheskiy institut (Dneprodzerzhinsk Evening Metallurgical Institute) and zavod im. Dzerzhinskogo (Works imeni Dzerzhinskiy)

1. Rolling mills--Operation 2. Plates--Rolling 3. Rolling mills--Stresses

Card 2/2

MOLOTKOV, L.F., kand.tekhn.nauk, dots.; CHERNEVICH, Ye.M., inzh.

Heat treatment of low-alloy cast iron used for iron mill rolls. Izv.vys.ucheb.zav.; chern.met. 2 no.7:91-95 Jl '59. (MIRA 13:2)

1. Dneprodzerzhinskiy vecherniy metallurgicheskiy institut i zavod im. Dzerzhinskogo.
(Cast iron--Heat treatment)
(Rolls (Iron mills))

S/137/61/000/005/014/060
A006/A106

AUTHORS: Ivanchenko, F.K., Molotkov, L.P., Tsukanov, E.F., Nikolayev, V.A., Pavlenko, B.A.

TITLE: Measurement of pressure on a medium-sheet mill and new conditions of reduction

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no.5, 1961, 4, abstract 5D26 ("Sb.tr. Dneprodzerzh. vech. metallurg. in-ta", 1960, v.2, 139-145)

TEXT: The authors present a short description of the mill which consists of two stands: a Lauth three-high mill - for the broaching of a smooth sheet, and a two-high mill for the rolling of a corrugated sheet. During the investigations the temperature and pressure of the metal on the rolls were measured when rolling smooth sheets of 4 x 1,400 x 4,200 mm dimensions and Ст.3 (St.3) corrugated steel sheets of 5 x 1,100 x 6,000 mm. The experimental results were used to calculate new conditions of reduction which make it possible to raise the efficiency of the mill by 15 - 20%.

V. P.

[Abstracter's note: Complete translation]

Card 1/1

S/137/62/000/003/099/191
A006/A101

AUTHOR: Kolotkov, L.P.

TITLE: Tapered roller draw-plates for the broaching of pipes

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 31, abstract 3D178 (V sb. "Proiz-vo trub", no. 4, Khar'kov, Metallurgizdat, 1961, 69 - 71)

TEXT: A roller draw-plate was designed and tested, with the aid of which broaching of 1Х18Н9Т (1Kh18N9T) steel pipes was performed on a long mandrel. Designs were developed of a 6-roller draw-plate (schematic drawing presented) and a two-taper roller draw-plate (schematic drawing presented). The simplicity and reliability of the design of roller draw-plates and the accuracy of regulating the pads ensures the manufacture of thin-walled precision pipes of special purpose from stainless and heat-resistant steels by broaching them on a long mandrel.

N. Yudina

[Abstracter's note: Complete translation]

Card 1/1

MOLOTKOV, L.F.

Multipaired, tapered roller drawing die. Biul.TSIICHM no.4:52 '61.
(Dies (Metalworking)) (MIRA 14:10)

MOLOTKOV, L.F.; YUFEROV, V.M.; KRYZHANOVSKIY, A.L.; SHAFRAN, I.K.; BORTUNOV, Ye.M.; SOROCHAN, N.G.; MADZHAR, N.I.; VOROB'YEV, A.F.

Investigating pressures during the rolling of universal stripe. Izv.vys.ucheb.zav.; chern.met. 5 no.4:76-81 '62. (MIRA 15:5)

1. Dneprodzerzhinskiy metallurgicheskiy institut i Zavod im. F.E.Dzerzhinskogo.
(Rolling (Metalwork)) (Pressure)

KOLOTKOV, L.F., dotsent, kand. tekhn. nauk; YUFEROV, V.M., dotsent, kand. tekhn. nauk; ZHUKOVSKIY, M.P., inzh.; CHERNEVICH, Yo.M.; BORUNOV, Ye.M.; SUMACHAN, N.G.; MADZHAR, P.I.

Ways of increasing the output of rolled products acceptable for their mechanical properties during the rolling of M.G.S, St.3M, and 15KhSND steel on universal mills. Stal' 24 no.9:824-827 S '64. (MIRA 17:10)

137-58-6-11747

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 77 (USSR)

AUTHORS: Molotkov, N.A., Siverskiy, M.V., Zhidetskiy, D.P.

TITLE: A New Organization Chart for Modern Open-hearth Departments (Organizatsiya upravleniya sovremennymi martenovskimi tsekhami)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1957, Vol 18, pp 532-537

ABSTRACT: The present organization of open-hearth departments (OHD) suffers from extreme decentralization of branches of the operation resulting in a long chain of management, an increase in the numbers of managerial, engineering, and technical personnel, and complications in production management. The writers propose the compilation of unified standard organization charts for OHD envisaging elimination of unnecessary links in management by combining small OHD and doing away with the present practice of excluding the slag dump and the mold-car-preparation shops from the purview of the OHD, and also of separating furnaces within a department into blocks and groups. The number of furnaces in a department should

Card 1/2

137-58-6-11747

A New Organization Chart for Modern Open-hearth Departments

be the decisive factor in determining the organizational pattern of management. Recommendations are advanced on standards for numbers of technical personnel relative to the volume of work of an OHD.

A.D.

1. Manangement engineering--USSR 2. Open hearth furnaces--Operation
3. Industrial plants--Organization

Card 2/2

LISUNOV, V.R.; KOCHETOV, M.N.; GOMEZIROV, V.K.; [illegible], N.A.; [illegible], S.T.

Determining the oil recovery factor from field and geological data. Nauch.-tekh. sbor. po dob. nefti no.22:81-83 '64. (MIRA 17:9)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

MOLOTKOV, N.K.

Unylskaya cave in the Uda Valley. Nov.kar.i spel. no.2:90-92 '61. (MIRA 15:9)

(Uda Valley—Caves)

BUKHMAN, Yakov Zakharovich; MOLOTKOV, Pavel Georgiyevich; YEROKIN, G.M., red. izd-va; IL'INSKAYA, G.M., tekhn. red.

[Mine brattices]Shakhtnye peremychki. Moskva, Gosgortekhizdat, 1962. 154 p. (MIRA 15:9)
(Mining engineering—Equipment and supplies)

MOLOTKOV, P.G., inzh.

Quality of mine brattices. Gor.zhur. no.2:66-68 F '63. (MIRA 16:2)

(Mine ventilation) (Mine fires--Safety measures)

MOLOTKOV, P.I.

Mobility of sap in the vascular system of trees and its transmission between trees having root connections. Bot.zhur. 41 no.3: 407-409 Mr '56. (MLRA 9:8)

1. Voronezhskiy lesokhozyaystvennyy institut.
(Plants, Motion of fluids in)

Molotkov, P.I

K-3

USSR / Forestry. Dendrology.

Abs Jour: Ref Zhur - Biologiya, No. 1, 1958, 1331

Author : Molotkov, P.I.

Title : Relicts of the Cedar in the Trans-Carpathians

Orig Pub: Priroda, 1957, No. 1, 95-98

Abstract: The European cedar has been preserved in insignificant quantities (the total quantity of wood not exceeding 2000 cubic meters) in the eastern part of the Main Carpathian Range. It is a valuable timber variety. The tree is up to 25 meters in height with a broad round crown and a powerful root system of the stem type /? aterzhniy/. Its requirements are not high as to soil conditions; it is frost- and shade-resistant. It occurs in the mountains at an elevation of from 1000 to 2500 meters. In the 100-1200 meter

Card 1/2

K-5

USSR/Forestry - Forest Cultivation.

Abs Jour : Ref Zhur - Biol., No 9, 1958, 39111

Author : Mol- , P.I., Kaplunovskiy, P.S.

Inst : -

Title : From the Experiment of Foresters in the Carpathians and in Podolia.

Orig Pub : Lesn. Khoz. 1957, No 7, 79-82.

Abstract : Experiments implying the successful growth of forest plantings in various leskhoz' of the oblast are described. Rational methods of agronomic technique of crops on stony deposits and on fresh fellings (without soil preparation and subsequent care) are described. Successful results of the passage method for the reconstruction of plantations of poor quality are noted.

Card 1/1

MOLOTKOV, P.I., kandidat sel'skokhozyastvennykh nauk.

Cedar relicts in Transcarpathia. Priroda 46 no.1:95-99 Ja '57. (MLRA 10:2)

1. Zakarpatskaya lesnaya opytnaya stantsiya Ukrainskogo nauchno-issledovatel'skogo instituta lesnogo khozyaystva, Mukachevo.
(Transcarpathia--Cedar)