PERZ, Marian

Geotrichum candidum as a cause of conjunctival mycoses. Klin. oczna 35 no.3:443-446 '65.

Notes on corneal aspergillosis according to our observations. Ibid.:459-461

1. Z Oddzialu Ocznego Szpitala im. J. Strusia (Ordynator: dr. med. M. Perz) i z Zakladu Mikologii Lekarskiej AM w Poznaniu (Kierownik: prof. dr. med. J. Alkiewicz).

OLSZAK, W.; PERZYNA, P. (Warsaw)

"Equation for the elastic-plastic state of the soil".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964.

PERZACKI, W.

TECHNOLOGY

Periodicals: PRZEMYSL SPOZYWCZY. Vol. 12, no. 9, Sept. 1958

PERZACKI, W. The meat industry in the German Federal Republic p. 389

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No.2, February 1959, Unclass.

PERZADAYEV, O. P., Candidate of Veterinary Sciences and Veterinarians A. K. Filippov,
Z. Ye. Zhirkova
Chkalov Sci Res Vet Expt'l Station (NIVOS)

"Identification of Salmonellae in Chkalov Oblast and their Pathogenicity in the Young of Farm Animals"

As a result of bacteriological, biochemical and serological studies of a large amount of pathological anatomical material sent to the veterinary experimental station from various rayons of Chkalov Oblast, the authors isolated 64 strains of bacteria of the Salmonella group.

Veterinariya, Vol 27, No 1, pp 23-27, 1950
U-5549, 16 Feb 1954

ELISEYEV, K. M. and KOCHEGANOV, Kh. E. (Docents), PERZADAYEV, O. P. (Candidate of Veterinary Sciences), ATACHKIN, Zh. A. and TULAKIN, V. I. Veterinary Doctors, Semipalatinsk Zooveterinary Institute).

"The work of helminthological brigades..."
Veterinariya, vol. 39, no. 2, February 1962 pp. 15

PERZASHKEVICH, L.M.

Influence of the height of occlusion on the intensity of mastication and the degree of food grinding by dentures. Trudy LSGMI 63:81-90 '60. (MIRA 15:1)

(DENTAL PROSTHESIS) (MASTICATION)

PERZASHKEVICH, L.M.

Masticatiographic data on the influence of the height of occlusion on mastication by dental prostheses. Trudy LSMI 63:91-99 '60. (MIRA 15:1)

(DENTAL PROSTHESES) (MASTICATION)

PERZASHKEVICH, L.M.

Peculiarities of dental prosthesis in accelerated odontotripsis. Stomatologiia 38 no.2:53-54 Ap '59. (MIRA 12:7)

1. Iz 1-y Leningradskoy gorodskoy stomatologicheskoy polikliniki (nauchnyy rukovoditel' - prof. I.S. Rubinov).
(DENTAL PROSTHESIS) (TEETH--MUTILATION)

PERZASHKEVICH, L. M.

Cand Med Sci - (diss) "Features of the chewing function as a function of the height of occlusion in dental prosthesis." Leningrad, 1961. 18 pp; (Ministry of Public Health RSFSR, First Leningrad Medical Inst imeni Academician I. P. Pavlov); 350 copies; price not given; (KL, 5-61sup, 205)

TERZEL, J.

The outlook for the technical development of our railroads. p. 477.
(TECHNICKA PRACA, Vol. 9, No. 7, July 1957, Bratislava, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 1, [illegible]

PERZELY, GY.

Recent data on the warming of the stratosphere caused solar activity.
p. 121. Vol. 60, No. 2 Mar/Apr. 1956. Budapest, Hungary. IDOJARAS.

SOURCE: East European List, (EEAL) Library of Congress Vol. 6, No. 1
January 1956.

PERZHINSKIY, Z. [Perzynski, Z.], inzhener (Pol'sha)

Electrogeoosmosis. Tekh.mol. 29 no.6:37-39 '61. (MIRA 14:7)
(Soil stabilization)

PEREZHNYANKO, A.Ye.

Chuck for polishing two parallel openings with one adjustment. Stan.i instr. vol. 24 no.9:28-29 S '53. (MLRA 6:10)
(Grinding and polishing)

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10.4000

SOV/179-59-5-7/41

AUTHOR: Perzhnyanko, E.A. (Moscow)

TITLE: Action of Long Waves on a Floating Body

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1959, Nr 5, pp 34-40 (USSR)

ABSTRACT: An arbitrary solid body with vertical sides is assumed to be floating on a heavy ideal liquid. The depth of the liquid is small in relation to the length of the waves; the dimensions of the body and its immersed depth are small in relation to the depth of the liquid. The induced vibrations of the body and the waves reflected from it are also small. The liquid is imagined divided into two regions, one underneath the body, the other outside it, and the differential equation for the pressure is set up for each region. The equation is solved for the boundary conditions appropriate to a rectangular strip and to a circle by the Fourier method of separating the variables. The method of solution can also be applied to an ellipse.
Card 1/2 Thanks are expressed to L.N. Stretenskiy for advice

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Action of Long Waves on a Floating Body SOV/179-59-5-7/41

during the preparation of the paper. There are 4 figures and 1 Soviet reference.

SUBMITTED: March 16, 1959

4

Card 2/2

PERZHNYANKO, E. A., Cand Phys-Math Sci (diss) -- "The effect of long waves on floating bodies, and the wave resistance of bodies moving in a circle". Moscow, 1960. 6 pp (Acad Sci USSR, Inst of Mech), 135 copies (KL, No 14, 1960, 126)

Porzhnyanko, E.A.

1999. Paszhnyanko, E. A., Vertical vibrations of a body floating on the surface of a liquid between two parallel walls, and waves resulting from them (in Russian), *Prikl. Mat. Mekh.* 20, 3, 362-372, May-June 1956.

Writer extends work of L. N. Sretenskii to more complicated boundary, rendering a rather complete analysis (11 pages). Resonance of body and resonance of waves are two different things: considering forced vibration, body offers most resistance to motion when waves are at resonance. Effect is similar to that of a "dynamic absorber."

R. A. Burton, USA

10 (4) S/020/60/130/03/008/065
B014/B014

AUTHOR: Pershnyanko, E. A.

TITLE: The Problem of Wave Resistance of a Body During Its Motion in a Circle

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 3, pp 514 - 516 (USSR)

ABSTRACT: In the present paper a body is assumed to move in a horizontal circle with constant angular velocity ω beneath the free surface of a perfect heavy liquid. It is further assumed that the velocity potential of the liquid be constant on the axes of the body. The author studies the motions of a body in a round basin (case I), in a circular channel (case II), and in a circular cylinder (case III). The equation for the velocity potential φ_1, which is assumed to be known, is given for the motion of the body in an unbounded liquid. The velocity potential of wave motion (1) is sought in cylindrical coordinates. The equations for the three above-mentioned cases yield the exact value of the wave potential at a sufficient distance from the body. In the neighborhood of the body these equations offer a close approximation, but do not warrant a rigorous satisfaction of the

Card 1/2

PERZYK, Z.

For a proper system of work in designing offices. p. 186.

MECHANIK. (Stowarzyszeni e Inzynierow i Technikow Mechanikow Polskich) Warszawa, Poland. Vol. 4, no. 4, July/Aug. 1959.

Monthly List of East European Accession. (EEAI) LC, Vol. 9, no. 1, Jan. 1960.

Uncl.

PERZYNA, Barbara

Impressions of the Scientific conference at the Municipal Clinic of Jaw Orthodontics in Zwickau. Czas. stomat. 18 no.3:317-319 Mr '65.

1. Z Zakladu Ortodoncji Akademii Medycznej w Poznaniu (Kierownik: doc. dr. T. Ziolkiewicz).

PERZYNA, Barbara

Preoperative orthodontic procedures in complete cleft of the lip, alveolar process and palate. Poznan.tow.przyjaciol nauk, wydz. lek. 21 no.5:1-26 '61.

(CLEFT PALATE surg)

PERZYNA, F., inz.

On more proper utilization of machines. "ormalizacja P 28 no.12:576-579 D '60.

PERZYNA, P.

Constitutive equations for work-hardening and rate sensitive plastic materials. Bul Ac Pol tech [illegible] :249-256 '64.

Dynamic behavior of rate sensitive plastic materials. Ibid.:26[illegible] 266

1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw. Presented by W. Olszak.

PERZYNA, P.; WIERZBICKI, T.

Temperature dependent and strain rate sensitive plastic materials. Bul Ac Pol tech 12 no.4:[illegible] '64.

1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw. Presented by W. Olszak.

PERZYNA, P.; BEJDA, J.

The propagation of spherical stress waves in a work-hardening and rate sensitive plastic medium. Bul Ac Pol tech 12 no.4: 283-290 '64.

1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw. Presented by W. Olszak.

L 24636-65 EWT(m)/EPF(c)/EWP(j)/EWP(b)/EWP(t) Pc-4/Pr-4 JD/RM

ACCESSION NR: AP5002536 P/0033/64/016/006/1215/1244

AUTHOR: Perzyna, P. (Warsaw); Bejda, J. (Warsaw)

22
B

TITLE: The propagation of stress waves in a rate sensitive and work hardening plastic medium

26

SOURCE: Archiwum mechaniki stosowanej, v. 16, no. 6, 1964, 1215-1244

TOPIC TAGS: strain wave propagation, viscoelastic medium, plastic material, rate sensitive material

ABSTRACT: The paper presents solutions of certain boundary value problems for work-hardening and deformation-rate-sensitive plastic material. 15 This is a continuation of an earlier investigation by the author dealing with the propagation of stress waves in a rate-sensitive plastic medium (ZAMP 3, v. 14, 1963, 241--261), but in the present paper more involved equations are necessary to describe the problem. It is assumed that the material can be treated like a viscoelastic plastic, for which the differential equations are written out. Four types of waves are considered: spherical, cylindrical radial, cylindrical shear, and plane. It is proved that for each of these types of waves, the work of plastic

Card 1/3

L 24636-65

ACCESSION NR: AP5002536

deformation on the front of the shock wave (strong discontinuity) is equal to zero. Consequently, the problem of a plastic medium with work hardening reduces to the ideal plastic problem, involving a nonlinear Volterra differential equation of the second kind. This equation is solved by successive approximations. In the zones of viscoelastic deformations behind the front of the wall of a strong or weak discontinuity, the problem is solved along the characteristics by an approximate finite-difference method. In the zones of inelastic deformations, a unified form of equation is obtained for all waves, and the boundary conditions lead to the solution of the generalized Picard problem. Examples of the propagation of a spherical wave and of a plane wave in half-space are presented for the case of soft steel. Comparison of the results of the work-hardening theory and the theory of a perfect plastic shows that in practice the influence of work hardening can be neglected, at least in a certain range of deformation rates. "The authors thank the staff of the computing center of the Polish Academy of Sciences for valuable assistance in the programming of the computations." Orig. art. has: 15 figures, 3 tables, and 100 formulas.

ASSOCIATION: Department of Mechanics of Continuous Media, IBTP, Polish Academy of Sciences

L 24636-65

ACCESSION NR: AP5002536

SUBMITTED: 31Aug64 ENCL: 00 SUB CODE: ME

NR REF SOV: 000 OTHER: 009

Card 3/3

PERZYNA, Piotr

The constitutive equations for work-hardening and rate sensitive plastic materials. Proceed vibr probl 4 no. 3:281-290 '63.

1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw.

PERZYNA

POLAND/Solid State Physics - Mechanical Properties of Crystals and Polycrystalline Substances E-10

Abs Jour : Ref Zhur - Fizika, No 12, 1958, No 27592

Author : Olszak Waclaw, Perzyna Piotr

Inst : Not Given

Title : Extremum Theorems in the Theory of Plasticity of Non-homogeneous and Anisotropic Bodies.

Orig Pub : Arch. mech. stosowanoi, 1957, 9, No 6, 695-712

Abstract : No abstract

Card : 1/1

24 1200

S/044/62/000/004/063/099
C111/C333

AUTHOR: Perzyna, P.

TITLE: Analysis of propagation of plane elasto-plastic waves in a nonhomogeneous medium. I. Finite strains

PERIODICAL: Referativnyy zhurnal, Matematika, no. 4, 1962, 61, abstract 4B260. (Bull. Acad. polon. sci. Sér. sci. techn.", 1960, 8, no. 9, 485-492)

TEXT: By a mathematical investigation of the equations of motion conditions are obtained which must be satisfied by the dependence stress-deformation and the properties of the inhomogeneous medium in order that the problem of propagation of charge and discharge waves can be solved by successive approximation and with the aid of difference equations along the characteristics.

[Abstracter's note : Complete translation.]

Card 1/1

24.1200

S/044/62/000/004/064/099
C111/C333

AUTHOR: Perzyna, P.

TITLE: Analysis of propagation of plane elasto-plastic waves in a nonhomogeneous medium. II. Infinitesimal strains

PERIODICAL: Referativnyy zhurnal, Matematika, no. 4, 1962, 61, abstract 4B281. ("Bull. Acad. polon. sci. Sér. sci. techn.", 1960, 8, no. 9, 493-502)

TEXT: This is the continuation of the paper (Ref 4B280). It is assumed that stresses and deformations are connected by a linear law. It is shown that the character of the solution depends on whether the pressure at the boundary of the medium increases from a certain value forward or from zero forward. In the first case there arise waves of discontinuity. The problem is solved according to the method of successive approximations and reduced to two generalized Piccard problems. The author mentions the modifications which must be carried out in this method, if the pressure at the boundary of the medium increases monotonely from zero forward.

[Abstracter's note : Complete translation.]

Card 1/1

28125
P/033/60/012/003/006/007
D242/D302

24.4260 1327

AUTHOR: Perzyna, Piotr, (Warsaw)

TITLE: General analysis of the problem of propagation of plane elastic-plastic waves in a non-homogeneous medium

PERIODICAL: Archiwum mechaniki stosowanej, v. 12, no. 3, 1960, 371 - 378

TEXT: In the present paper the author analyzes the propagation of plane strain waves in a non-homogeneous elastic-plastic body assuming that the strain-displacement relation is

$$\varepsilon(x, t) = u_x(x, t) + \frac{1}{2} [u_x(x, t)]^2$$

where the subscript x denotes differentiation with respect to x. Since the practical aspect of this paper consists in possibly applying the considerations presented to investigating plane stress

Card 1/8

waves in soils, the influence of the transversal motion may be disregarded. A similar assumption may be introduced if the propagation of stress waves in very thin bars is investigated. Taking the quadratic terms in the (ε - u)-relation, it is possible to investigate the wave motion under high pressures, usually accompanied by great plastic strains. The purpose of the mathematical analysis presented in this paper is to give the conditions to be imposed on the functions, determining the (σ - ε)-relation and the mechanical properties of the non-homogeneous body in order to obtain the solution describing the propagation of loading and unloading waves by the iteration method or the method of characteristics. An analysis is also made of the discontinuities appearing on the front of the elastic wave and on the front of the plastic wave as a result of definite boundary conditions in the case of linearization of the (σ - ε)-relations. In the discussion of the non-linear body problem the author first considers the loading process He assumes the stress-strain relation in the form

$$\sigma = f(\varepsilon, x) \qquad (1.1.1)$$

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012402

General analysis of the problem ... P/033/60/012/003/006/007
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The author points out that the function $f(\varepsilon, x)$ should be determined on the basis of experimental investigations of the body considered. He assumes that this function is of the C^1 class in relationto the variables ε and x, and that its geometrical image in the (σ, ε, x) space is a surface, whose convexity is turned in the direction of the positive o axis. The equation determining the motion of the body is

$$-\frac{\partial^2 u}{\partial t^2} + \varrho^{-1}(x)\frac{\partial f}{\partial \varepsilon}(1+u_x)u_{xx} + \varrho^{-1}(x)\frac{\partial f}{\partial x} = 0. \quad (1.1.2)$$

The above assumptions for $f(\varepsilon, x)$ do not admit the formation of shock waves or discontinuity waves resulting from the surface conditions of the soil for x = 0. In view of the non-linearity of Eq. (1.1.2) the author gives its solution by the method of characteristics. He then considers the unloading process, for which the relations are given in the form

$$\sigma = f(\varepsilon_0, x) - \left|\frac{\partial f(\varepsilon, x)}{\partial \varepsilon}\right|_{\varepsilon=0} (\varepsilon_0(x) - \varepsilon), \quad (1.2.1)$$

Card 3/8

23125

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D242/D302

General analysis of the problem ...

where $\varepsilon_0(x)$ is the strain in the unloading wave. The equation of motion of the body in the unloading zone is

$$-\frac{\partial^2 u}{\partial t^2}+\varrho^{-1}(x)\left[\frac{\partial f(\varepsilon, x)}{\partial \varepsilon}\right]_{\varepsilon=0}(1+u_x)u_{xx}+F(u_x, x)=0. \qquad (1.2.2)$$

which is also a non-linear equation. Since the problem of propagation of waves for a body characterized by a non-linear function is very complicated, the author in the subsequent analysis confines himself to a linear function $f(\varepsilon, x)$. In discussing the physically linear body, the author first considers the loading process for which he assumes the relation (1.1.1) in the form

$$\sigma(x, t)=\begin{cases}\alpha(x)\varepsilon(x, t) & \text{for } \varepsilon(x, t)<\varepsilon_s(x),\\ \beta(x)\varepsilon(x, t)+[\alpha(x)-\beta(x)]\varepsilon_s(x) & \text{for } \varepsilon(x, t)\geqslant\varepsilon_s(x),\end{cases} \qquad (2.1.1)$$

where $\varepsilon_s(x)$ denotes the yield point. It is assumed that $\alpha(x)>\beta(x)$

Card 4/8

in the entire body, and that both functions are of the C^1 class. The loading zone is composed of two regions, the elastic and the plastic. In the elastic region the equation of motion is

$$(2.1.2)\quad -\frac{\partial^2 u}{\partial t^2}+\frac{a(x)}{\varrho(x)}(1+u_x)u_{xx}+\varrho^{-1}(x)\frac{da(x)}{dx}\left[u_x+\frac{1}{2}(u_x)^2\right]=0. \qquad (2.1.2)$$

In the plastic region it is

$$(2.1.3)\quad -\frac{\partial^2 u}{\partial t^2}+\frac{\beta(x)}{\varrho(x)}(1+u_x)u_{xx}+\varrho^{-1}(x)\frac{d\beta(x)}{dx}\left[u_x+\frac{1}{2}(u_x)^2\right]+ \qquad (2.1.3)$$

$$+\frac{d}{dx}\{[a(x)-\beta(x)]\varepsilon_s(x)\}=0.$$

In the case of Eqs. (2.1.1) discontinuity waves may appear, depending on the boundary conditions. If on the surface x = 0 a pressure p(t) is applied starting from a certain value $p = p_0$, the front of the elastic wave and the front of the plastic wave are strong discontinuity lines. The author first discusses the elastic wave problem for which he obtains the non-linear integral Volterra equa-

Card 5/8

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P/033/60/012/003/006/007
D242/D302

General analysis of the problem ...

tion

$$u_x(x) = -1 + \sqrt{1 - 2\varepsilon_x^0} + \int_0^x \varphi_1(z, u_x(z))\,dz. \qquad (2.1.10)$$

He assumes that the function $\varphi_1(x, u_x)$ satisfies the Lipschitz condition in relation to u_x. The series

$$u_{x_0}(x) + \sum_{\nu=0}^{\infty} |u_{x_{\nu+1}}(x) - u_{x_\nu}(x)|, \qquad (2.1.14)$$

is absolutely and uniformly convergent and its sum

$$u_x(x) = \lim u_{x_n}(x) \qquad (2.1.15)$$

is the solution of the integral equation (2.1.10). In the case of the plastic wave problem the author obtains the non-linear Volterra integral equation

Card 6/8

P/033/60/012/003/006/007
General analysis of the problem ... D242/D302

The solution of the problem in the unloading zone may be obtained by using the inverse method. The author finally mentions full linearization. He states that under the assumption that $\varepsilon(x, t) = \partial u(x, t)/\partial x$ the Eqs. (2.1.2) and (2.1.3) become linear. Such a problem was solved in detail by the author in a previous article (Ref. 2: Arch. Mech. Stos., 5, 11, 1959, 595-612). There are 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: P. Perzyna, The problem of propagation of elastic-plastic waves in a non-homogeneous bar, in "Non-Homogeneity in Elasticity and Plasticity", Symposium, Warsaw, September 2-9, 1958, Pergamon Press, New York-London, 1959.

ASSOCIATION: Department of Mechanics of Continuous Media, IBTP
Polish Academy of Sciences

SUBMITTED: January 25, 1960

Card 8/8

OLSZAK, W.; PERZYNA, P.iotr

Extremum theorems in gener-l viscoelasticity. Bul Ac Pol tech 9 no.1:17-24 '61. (EEAI 10:9)

1. Department of Mechanics of Continuous Media, Institute of Fundamental Technical Problems, Polish Academy of Sciences. Presented by W. Olszak.

(Elasticity) (Viscosity)

PERZYNA, Piotr

Study on the dynamic behavior of rate sensitive plastic materials. Archiw Mech 15 no.1:113-130 '63.

1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw.

PERZYNA, P.

On a nonlinear boundary-value problem for a linear hyperbolic partial differential equation. Bul Ac Pol tech 12 no.12:861-866 '64.

1. Department of Mechanics of Continuous Media of the Institute of Basic Technical Problems of the Polish Academy of Sciences, Warsaw. Submitted September 9, 1964.

L 24632-66 EWP(w)/EWP(j)/T/ETC(m)-6 IJP(c) WW/EM/RM
ACC NR: AP6011772 SOURCE CODE: PO/0033/66/018/001/0085/C100

AUTHOR: Perzyna, P. (Warsaw); Wojno, W. (Warsaw)

46
B

ORG: Department of Mechanics of Continuous Media, IBTP Polish Academy of Sciences

TITLE: Determinant equations for elastic viscoplastic materials under finite strain

26

SOURCE: Archiwum mechaniki stosowanej, v. 18, no. 1, 1966, 85-100

TOPIC TAGS: deformation rate, equation of state, plastic deformation, elastic deformation

ABSTRACT: The paper deals with a detailed analysis and formulation of determinant equations describing the behavior of elastic viscoplastic materials sensitive to deformation. It is assumed that the material is isotropic and homogeneous and that the process is isothermal. The assumption of the additivity of the elastic and nonelastic parts of the deformation tensor makes possible individual equations describing the elastic and nonelastic properties of the material. A new representation of a material is proposed which, under certain additional conditions, with respect to Cauchy and Green, is al elastic material. The nonelastic properties of the material consist of the rheological relaxation-type effects and the plastic properties

Card 1/2

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ACC NR: AP6011772

including both isotropic and anisotropic work-hardening. The effects are described, and it is assumed that the nonelastic part of the deformation tensor is proportional to the isotropic function of the stress tensor. The proportionality factors of that stress depend on the difference the actual state of stress and that corresponding to the state of plasticity. The authors discuss the case with limit $\gamma = \infty$ and propose determinant equations for the theory of plasticity. Orig. art. has: 88 formulas. [Based on author's abstract] [AM]

SUB CODE: 11, 12, 20/ SUBM DATE: 12Sep65/ ORIG REF: 001/ OTH REF: 011/

Card 2/2

L 54928-65 EWT(d)/EWP(w)/EWA(d) IJP(c) EM

ACCESSION NR: AP5012334 PO/0033/65/017/001/0087/0107

AUTHOR: Perzyna, P.

TITLE: The application of the iteration method to the solution of the problems of propagation of stress waves in an inelastic medium

SOURCE: Archiwum mechaniki stosowanej, v. 17, no. 1, 1965, 87-107

TOPIC TAGS: stress wave propagation, elastic medium, iteration method, wave propagation calculation, cylindrical shear propagation, viscoplastic medium, boundary value problem, successive approximation, partial differential equation

ABSTRACT: In his previous papers (Arch. Mech. Stos., 13, 1961, 851-867; Ibid., 14, 1962, 93-111; ZAMP, 14, 1963, 241-261), the author showed that the stress wave propagation through an infinite elastic/viscoplastic medium may be reduced (for all types of waves) to a single mathematical problem. By varying the coefficients and boundary conditions of appropriate differential equations, one can describe the spherical, cylindrical radial, cylindrical shear, and plane waves. In each case, the problem of elastic/viscoplastic deformations is reduced to the solution of a quasi-linear hyperbolic system of differential equations in first-order partial derivatives of the form

$$U_t + AU_z + B = 0, \qquad (1.1)$$

Card 1/4

L 54928-65
ACCESSION NR: AP5012334

where U is the appropriate n-component vector, A is an n x n matrix, and B is an n-component vector. A and B depend on the spatial coordinate z, time t, and the components of the vector U. R. Courant (Comm. Pure Appl. Math., 3, 14, 1961, 257-265; R. Courant, D. Hilbert, Methods of mathematical physics, Vol. 2, Partial Differential Equations by R. Courant, Interscience Publishers, New York, 1962) previously investigated the applicability of the method of successive approximations to the solution of the initial boundary-value problems for the system (1.1). The present paper describes the applicability of such successive approximations to the solution of problems concerning the propagation of waves in inelastic media. It shows that the problems can be reduced to the solution of one of the two general problems: I. Find the solution of the almost-linear, second-order, hyperbolic, canonical, partial differential equation with two independent variables

$$u_{xy} = f(x, y, u, u_x, u_y), \quad (2.1)$$

Card 2/4

L 54928-65
ACCESSION NR: AP5012334

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(u is the unknown function), satisfying the boundary conditions

$$u_x(x, \varphi(x)) = g\big(x, u(x, \varphi(x)), u_y(x, \varphi(x))\big),$$

$$u_y(\psi(y), y) = h\big(y, u(\psi(y), y), u_x(\psi(y), y)\big),$$

$$u(x^0, y^0) = u^0, \qquad (2.2)$$

[This problem was first formulated by Z. Szmydt (Bull. Acad. Polon., Cl. III, 4, 1956, 579-584) who proved the existence and uniqueness of its solution]; II. Find the solution of the linear, hyperbolic, second-order, canonical, partial differential equation with two independent variables

$$\mathcal{L}(u) = u_{xy} + a(x, y)u_x + b(x, y)u_y + c(x, y)u = d(x, y). \qquad (3.1)$$

satisfying the same boundary conditions (2.2). [This is a somewhat generalized problem formulated by Diaz et al. (Arch. Rat. Mech. Anal., 10, 1962, 1-28; Ibid., 3, 6, 1964, 187-195)]. Both methods allow an exact analysis and estimation of the convergence properties of their solutions. An illustrative example is worked out on the propagation of a cylindrical shear wave. II covers several special cases arising from individual properties of the various media under investigation. Orig. art. has: 61 formulas and 2 figures.

Card 3/4

L 54928-65
ACCESSION NR: AP5012334

ASSOCIATION: Department of Mechanics of Continuous Media, IBTP Polish Academy of Sciences

SUBMITTED: 15Sep64 ENCL: 00 SUB CODE: ME, MA

NO REF SOV: 002 OTHER: 041

Card 4/4

ACCESSION NR: AP4038484

P/0033/64/016/001/0135/0143

AUTHOR: Perzyna, Piotr (Warsaw); Wierzbicki, Tomasz (Warsaw)

TITLE: Temperature dependent and strain rate sensitive plastic materials

SOURCE: Archiwum mechaniki stosowanej, v. 16, no. 1, 1964, 135-143

TOPIC TAGS: dynamic metal property, strain rate effect, dynamic stress, dynamic strain, temperature stress relation

ABSTRACT: A critical review of previous works concerning the effects of simultaneous action of both strain rate and temperature on the dynamical properties of metals beyond the elasticity limit is presented. Constitutive equations describing the behavior of metals under these conditions are modified by using available experimental data to obtain more accurate results. Therefore, only narrow ranges of temperature and strain rate are investigated. Theoretical and experimental results are compared in diagrams by plotting the stress-versus-temperature curves for various strain rates for steel, iron, and aluminum, and a fair agreement between theory and experiment

Card 1/2

ACCESSION NR: AP4038484

can be seen. Orig. art. has: 12 formulas and 5 figures.

ASSOCIATION: Department of Mechanics of Continuous Media, IBTP Polish Academy of Sciences

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Card 2/2

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1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw.

PERZYNA, Piotr; WIERZBICKI, Tomasz

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1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw.

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Effect of hypothermia on the behavior of electropheretic fractions of blood proteins in rabbit. Polski przegl. chir. 30 no.2:103-110 Mr '58

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(BLOOD PROTEINS, determ.
electrophoresis, eff. of hypothermia in rabbits (Pol))
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PERZYNA, Tadeusz

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infected, eff. of pred. of exper. pancreatic necrosis (Pol))
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exper. necrosis, eff. of infected bile (Pol))

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PERZYNA, Tadeusz (Poznan, I Klinika Chirurgiczna A. M., ul. Dluga 1/2)

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surg. (Pol))

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concusion, intravenous procaine ther. (Pol))

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1. Z I Kliniki Chirurgicznej AM w Poznaniu Kierownik: prof. dr S. Nowicki.

(PANCREATITIS) (POSTGASTRECTOMY SYNDROMES)
(PEPTIC ULCER)

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(COMMON BILE DUCT)
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Apparatus for reproductions. Pt. 2. Horyz techn 16 no.3:30-31 '63.

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P/001/60/000/005/001/003
A223/A026

AUTHOR: Perzyński, Zdobysław, Engineer

TITLE: Light "on the Index" - A Report From the Warsaw "Foton" Photochemical Plant

PERIODICAL: Horyzonty Techniki, 1960, No. 5, pp. 195 - 197

TEXT: The article describes the origin and products of the Warsaw branch of the "Foton" Photochemical Plant. The first Polish photochemical plant was established in Warsaw in 1888 by Engineer Piotr Lebiedziński, a famous specialist in the field of light-sensitive materials. This plant, which also exported some of its products, operated successfully until after World War I when it met with financial difficulties. Lebiedziński, trying to save the situation, formed an association under the name of "Foton" which counted among its members Professor Iliński, the present head of the laboratory of the "Foton" Photochemical Plant. In 1937, the Photochemical Plant was formed as a section of the Colored Paper and Wallpaper Plant under the management of the Franaszek Plant in Warsaw. The largest pre-war photochemical plant in Poland was the "Alfa" Plant in Bydgoszcz, founded in 1926. There were also a number of small plants, such as the "Orion" in Kielce and the

Card 1/3

P/001/60/000/005/001/003
A223/A026

Light "on the Index" - A Report From the Warsaw "Foton" Photochemical Plant

"Ero" in Poznan, both of which were destroyed during World War II. The "Alfa" Plant started operating again in 1945 immediately after cessation of hostilities, and the Franaszek Plant in Warsaw after reconstruction under the name of "Film Polski". Today there are two plants of this kind in Poland, i.e., the Warszawskie Zakłady Fotochemiczne (Warsaw Photochemical Plant), formerly "Franaszek" and the Bydgoskie Zakłady Fotochemiczne (Bydgoszcz Photochemical Plant), formerly "Alfa". Both of these plants are known under the joint name of "Foton". The Warsaw branch produces films and the Bydgoszcz branch paper, glass plates and chemicals. The Warsaw Plant which in the beginning produced the primitive "Fotopan" amateur film, has considerably increased its assortment and produces today the "Fotopan F" and "Fotopan Super" film with 17 and 21° DIN sensitivity and corresponding to the Agfa "Isopan F" and "Isopan ISS" films. Although the "Fotopan F" film gives good results and is used also for scientific photography, the amateur photographers would do well to use Agfa or Kodak films. The "Fotopan Super" film gives good results under proper light conditions. In case of over-exposure the results are not too good and efforts are being made by the plant to improve the quality of this product. Excellent photos have been obtained with the latest product of the plant, the "Fotopan Ultra" film which has a sensitivity of 24° DIN, or by Polish standards C.U.K. The positive

Card 2/3

P/001/60/000/005/001/003
A223/A026

Light "on the Index" - A Report From the Warsaw "Foton" Photochemical Plant

film of the "Foton" Plant with a fine-grain emulsion does not lag behind its Agfa or Kodak counterpart. The domestic production of this film covers 60% of Poland's requirements for this type of article. The Plant also achieved excellent results with the production of X-ray films. Two years ago an X-ray film with a sensitivity of 44°C.U.K. was produced. Lately, the Plant started the production of X-ray films with a sensitivity of 88°C.U.K. The Plant has been working on the manufacture of color films since 1949, when the first research laboratory was set up. The first positive color films will be on the market soon. The small-scale production of negative color films started in 1959 will be expanded in 1960. Preparations for the production of several color films are in progress. In 1959, the production of 8 and 16 mm cinema films was prepared, but the production had to be postponed until better cutting machines could be obtained. In the first section of the plant the emulsion is prepared and tested and in the second section the emulsion is spread onto celluloid tape, which is then perforated, rolled and packed. The Plant also carries out film developing and printing. There are 4 photos.

Card 3/3

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"A Drilling and Boring Head for Large Blind Holes," Stanki I Instrument, 17, No. 6, 1946

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Vertical vibrations of a body floating on the surface of a liquid between two parallel walls, and waves resulting from them. Prikl.mat.i mekh. 20 no.3:362-372 My-Je '56. (MLRA 9:8)
(Hydrodynamics)

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Perzhnyanko, E. A. On vertical oscillations of a body floating on the surface of a liquid between two parallel walls, and on waves produced in this situation. Prikl. Mat. Meh. 20 (1956), 362-372. (Russian)

An infinitely deep liquid is contained between two parallel vertical walls. Midway between them on the surface floats a body symmetric about the vertical axis through the centroid. A slight displacement of the body in the vertical direction results in oscillations which are communicated to the surrounding liquid. The author determines the equation of motion of the centroid and obtains a solution in the form of an infinite series of residues. He studies particularly the beating phenomenon which takes place when the natural frequency of oscillation of the body is near one of the standing-wave frequencies in the liquid due to the presence of the bounding walls.

R. N. Goss (San Diego, Calif.)

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Adjustment of polishing disks. p. 598.
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PERZYNA, Barbara, Poznan, Slowackiego 42/2

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1. Z Zakladu ortodoncii Akademii Medycznej w Poznaniu. Kierownik: doc. dr. T.Ziolkiewicz
(MALOCCLUSION, therapy
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PERZYNA, F.

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PERIODICAL: MECHANIK, Vol. 31, no. 7, July 1958.

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(Strains and stresses) (Waves) (Elasticity)
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